

Useful Trees and Shrubs for Ethiopia

Identification, Propagation and Management
for 17 Agroclimatic Zones

Azene Bekele-Tesemma



Edited by
Bo Tengnäs, Ensermu Kelbessa,
Sebsibe Demissew and Patrick Maundu



World Agroforestry Centre
TRANSFORMING LIVES AND LANDSCAPES

Useful trees and shrubs of Ethiopia: Identification, Propagation and Management for 17 Agroclimatic Zones

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RELMA in ICRAF Project

World Agroforestry Centre, East Africa Region, Nairobi Kenya, 2007

THE WORLD AGROFORESTRY CENTRE, also known as the International Centre for Research in Agroforestry (ICRAF), contributes to alleviating poverty, improving food security and conserving the environment through the use of trees, tree products and agroforestry. The Centre pursues these goals through research, education and development activities.

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Foreword

Ethiopia is one of the most important biodiversity hotspots in the world. In 1790, the first European, James Bruce of Scotland, documented only 18 plants in his *Natural History of Ethiopia*. Today, nearly seven thousand plant species, one thousand of which are endemic to Ethiopia, are documented in the *Flora of Ethiopia* (2003). Sadly, many of the species are in danger of extinction because of rapid conversion of forest to agricultural land and over-grazing.

International efforts to document the rich flora of Ethiopia began in earnest in 1986 with the Ethiopian Flora Project of the Ethiopian Government through the Addis Ababa University and the Swedish Government through the Swedish Agency for Research Cooperation with Developing Countries (SAREC).

This book is the second edition of an earlier book (1993), also led by Dr. Azene Bekele-Tesemma and his team. The main aim of this extensively revised book is to benefit the rural people of Ethiopia by encouraging them to grow more trees and shrubs for various reasons, including income generation, timber, medicines, soil fertility, honey production, biodiversity and watershed protection.

The Regional Land Management Unit (RELMA) has published a well-known series of books on useful trees for Kenya, Eritrea, Ethiopia, Tanzania and Uganda. This is the last of the series because the RELMA project ended in December 2006. We are most grateful to Dr. Azene and his team for this great effort, which will have a lasting impact. Many of the RELMA staff, including Dr. Azene, remained at the World Agroforestry Centre (ICRAF), Nairobi.

This book is intended for use by staff involved in agricultural extension at all levels and in the educational system, both in specialist training of foresters and agriculturalists as well as in high schools and teacher training colleges.

It is our hope that the book will be widely used — both in the extension services and education — in Ethiopia to encourage present and future generation to appreciate and keep alive the great botanical heritage of Ethiopia.

Professor Chin Ong
RELMA manager, ICRAF

Acknowledgements

This book is a revised version of *Useful Trees and Shrubs of Ethiopia: Identification, propagation and management for pastoral and agropastoral communities*, published in 1993 as Technical Handbook No. 35 in a series developed by the Regional Land Management Unit (RELMA). Various institutions and many individuals made significant contributions to both versions. It is not possible to name each one of them, but we thank them all for their invaluable contributions.

During the production of the first version in 1993, I was unable to travel to Gambella and Benishangul-Gumuz administrative regions for logistical reasons. It was not also possible for me to go to the Semen mountains of the Amhara Regional State and the Tigray Highlands because these areas were conflict zones in the fighting between Tigray People's Liberation Front and Ethiopia's former socialist government. Since the study did not cover these areas, it missed six important agroclimatic zones and an equal number of important vernacular languages. It also left out 21 important species.

I would like to take this opportunity to thank the Bureaus of Agriculture and Rural Development of the two Regional State Governments for organizing all the logistics that were required to make this additional study possible, and RELMA for financing the project.

At the onset of the study for this revised edition, RELMA conducted a readers' survey that yielded valuable feedback on the first book. The survey confirmed the publication as one of the most used reference books in the fields of agriculture and forestry. The readers appreciated the utility of the book and recommended several changes to make it even more useful.

Readers recommended that each species be classified by agroclimatic zones. They also wanted colour photos used and additional information on certain species and updated illustrations. Some of the readers recommended that the information be presented in a way that would make the book useful to other countries in the region. All these recommendations have been addressed in this revised edition. For instance, classification by agroclimatic zones makes the information applicable outside Ethiopia.

I would like to thank the management of RELMA in ICRAF project for allowing me to undertake research for this book and for financing its production.

Some of the drawings taken from the first version were drawn anew. We in the RELMA in ICRAF project are grateful to the illustrators and all those who allowed us to reuse various illustrations. We are especially grateful to Luise Gull for the drawing of *Ficus carica*, and the Oklahoma

State University, Department of Agricultural Communications (indicated by 'O' in the credits for illustrations) for allowing us to use illustrations of *Discopodium penninervum*, *Erica arborea*, *Hypericum quartinianum*, *H. revolutum*, *H. roeperianum*, *Maesa lanceolata*, *Pittosporum viridiflorum*, *Rhoicissus tridentata*, *Salix mucronata* (*S. subserrata*), *Schefflera abyssinica*, *Steganotaenia araliacea*, *Tamarix aphylla*, and *Woodfordia uniflora*. These drawings first appeared in *Families of Flowering Plants in Ethiopia* by W. C. Burger (Oklahoma Agricultural Experiment Station Bulletin No. 45, O. S. U. Press, Stillwater, Oklahoma 1967).

Some of the drawings from *Plants of Zanzibar and Pemba* by R. O. Williams (Z), and from *Kenya Trees and Shrubs* by I. R. Dale and P. J. Greenway (D G) used in the first edition of also appear in this revised version. The copyright for these illustrations still rests with the original publishers.

Several original illustrations have been prepared for this version, many based on specimen from East African Herbarium in Nairobi. We acknowledge the assistance of the head of the herbarium, Dr. Siro Masinde, and other staff, particularly Mr. Geoffrey Mwachala, Mr. Geoffrey Mungai, Mr. A. F. Odhiambo and Ms. Brenda Nyaboke. We thank the herbarium for permission to photograph many of the dried specimens that are used in this book. A few more were photographed by Dr. Ensermu Kelbesa of Addis Ababa University Herbarium. We are grateful for the assistance.

Many thanks also go to Mr. Patrick Maundu of Bioversity International, Nairobi, who

provided some of the photographs and to Dr. Tadesse Wolde Mariam Gole for the photograph of *Aloe vera*.

Dr. Mike Gilbert, Dr. J. B. Gillett and Dr. Mesfin Tadesse, the Ethiopia Liaison Botanist of the Royal Botanic Gardens, Kew, and Dr. Inga Hedberg of Uppsala gave invaluable help in resolving some taxonomic problems in the first edition.

I also would like to thank Professor Sebsibe Demisew and Dr. Ensermu Kelbesa of the Addis Ababa University, who are the technical editors of this revised edition, and to Mr. Bo Tengnäs, advisor in the first edition and co-editor of the second version. Mr. Maundu also made significant editorial contributions.

The technical content of this book was developed through numerous discussions with farmers, pastoralists and many professionals in the field of multipurpose trees and shrubs in eastern Africa. Without the contribution of local knowledge and experience gained over the many years from rural communities, the content of this book would not be as extensive as it is.

Finally, I would like to acknowledge that no publication of this nature can be correct in every detail. The responsibility for any remaining errors or weaknesses rests entirely with me. I request readers to make use of the feedback form at the end of the book to correct any errors or to provide me with information on the content of this book.

Azene Bekele-Tesemma, PhD

Capacity Building Advisor, Eastern Africa Region, ICRAF

PART I

Introduction

Introduction

The aims of this book

The tree cover in Ethiopia continues to dwindle every year. The major reason for this resource shrinkage is the increasingly intensive use of land for crop and livestock production. Cutting down trees for fuelwood and construction materials also plays a role. About 92% of the nation's total energy comes from biomass sources, with wood and tree residues accounting for 77%. Currently, fuelwood is scarce in 75 % of the country.

Another factor affecting deforestation is failure by farmers to widely use biological measures, including planting shrubs and trees, to control soil erosion and mitigate land degradation. There are many reasons why farmers have not adopted effective soil conservation over the years. Some of the reasons are of a political nature, such as lack of land and tree tenure. Others relate to lack of information — often farmers do not know the species best suited to their areas.

Weak extension services have also contributed. Many of the approaches and technical solutions promoted by the extension workers have not attracted farmers' interest.

Regrettably, forestry is not considered as a means by which Ethiopians can fight food insecurity. Yet forestry is the source of diversified high-value industrial commodities that can guarantee economic access to food and improve people's lives.

Due to the wide variety of agroclimatic and socio-economic conditions in Ethiopia,

no uniform extension package applied nationwide can be effective. On the contrary, extension systems should engage local people in dialogue so that their local circumstances are taken into account and their wishes given priority. So far, training of foresters and agriculturalists has not provided these cadres with a sound knowledge of the wide range of tree species that can be grown in different areas and their local uses.

Forestry training has focused on industrial forestry, while agriculturalists have been trained in crop production and animal husbandry. Knowledge of how farmers use trees and how trees can be incorporated into farming systems has not been given priority. As a result, few development agents (DAs) can communicate effectively with local people, who, in turn, remain indifferent to the extension messages.

Often, in extension work, a few exotic species are promoted at the expense of rich indigenous flora of interest to communities.

Farmers and pastoralists have accumulated knowledge on the uses and characteristics of different tree species over many generations, but forestry policies and extension workers have given such local knowledge little attention. In some cases, extension workers know less about the propagation and management of locally preferred species than the local people themselves. Consequently, farmers have little respect for the extension agents and their advice when it comes to tree or shrub identification, propagation and management.

This book aims to help rectify this situation by providing information on a selection of useful tree and shrub species for the range of conditions in the 17 agroclimatic zones found in Ethiopia. The book is intended for use by staff involved in extension at all levels. It is also suitable for use in the formal education system, both in specialized training of foresters and agriculturalists as well as in high schools and teacher training colleges.

This is a practical handbook; not a botanical textbook. Therefore, efforts have been made to present the material in simple English, although it is impossible to avoid the use of some technical vocabulary when describing some of the important characteristics of the trees and shrubs listed.

A lot of information has been added to this revised edition. Seventeen agroclimatic zones are covered, up from 12 in the first edition. The number of languages covered has increased from 18 to 24.

There are, however, still large gaps in the information provided, especially in newly added species for which only basic information was gathered.

Criteria for selection of the species

There are well over 6,600 higher plant species in Ethiopia, including 22 that are threatened, and it would have been impossible to include them all in this handbook. The present selection is a compromise representing the most important species as indicated by farmers contacted in Amhara, Tigray, Oromia, Southern peoples, Gambella, Benshangul Guuz Harrari, Dire Dawa, Afar,

Somali and Addis Ababa regional states (see map of administrative regions on pages 10 and 11) and the author's experience.

Species were also selected based on their occurrence in crop, grazing or communal land as well as on the knowledge of farmers, pastoralists and extension workers interviewed by the main author. The fact that a species has been found to be useful does not necessarily mean that it must be planted. For many species, particularly in drier lowland areas, protection of natural regrowth may in fact be a more effective and cheaper way to ensure long-term survival.

A few species such as the oil-rich *Jatropha curcas* and many that are good for timber are included because of their industrial value and potential to become investment projects in which farmers can be involved as outgrowers.

We have included indigenous and exotic species. For exotic species, we indicate if the tree has been naturalized.

The species selected are almost all trees, but a number of large and small shrubs are also included. There are, however, a few exceptions. Tall grasses such as *Arundinaria alpina*, *Oxytenanthera abyssinica*, *Arundo donax* and *Olyra latifolia* have been included, as well as the tree fern *Cyathea manniana*, the climbers *Rhoicissus* spp., scramblers such as *Phytolacca dodecandra*, the giant herb of the banana family *Ensete ventricosum* and the economically significant herb *Aloe vera*.

In the selection are fruit species such as *Citrus medica*, *Citrus aurantifolia*, *Casimiroa edulis* and *Malus domestica*.

The large woody *Euphorbia* species are unusual in their family but are also included here because they are useful and well known in Africa.

We hope that subsequent editions of the book will cover more species as our knowledge and contacts with the rural communities grow.

How to use this book

General usage instructions

This book can be used in a number of ways and it is largely up to the user to find out how best to use it in his or her particular situation. A few hints will be given here.

In extension, the book can be used to identify trees and for information on different species. In the field, local people may often indicate that a certain species is useful and know its name. Using the local name as an entry point, the extension worker can identify the corresponding species name indicated in the section on Vernacular Names. After finding the corresponding scientific name, he or she can then compare the criteria of the species in the field with the identification criteria indicated in Part III of this book. If the criteria match, the extension agent now informs farmers on the possible uses of the species, methods of propagation and management requirements.

If the vernacular name does not appear in the list, another option is to search directly for the species in Part III. In this case, the extension agent should try to identify the species from the description, drawings and photographs. If the text in the description is difficult to understand, a study of the

illustrated glossary of botanical terms (page 48) should help.

On other occasions, local communities may simply indicate the various uses that they want to get from the tree or shrub they would like to plant. Then, they may require that the extension agent gives them various options of species they can grow. In this case, the extension agent can select suitable species from the table summarising uses in part IV.

In other situations, users may simply want to find out more information on a known species. In this case, they should search in the alphabetical species list in Part III.

Another situation may be when an extension worker wants to know which species could do well in an area. In this case, the first step is to identify the agroclimatic zone. If data on rainfall and altitude are available, it is easy to identify the zone from the table on page 9. If the altitude and rainfall figures are not known, observations on the natural vegetation, crops and soil type can be matched with those in the table. Once the agroclimatic zone is identified, the list of suitable species for each agroclimatic zone (page 38) can be identified by referring to the section on that lists species by agroclimatic zone in Part II.

It is also good for the extension agents to look around and try to see which species are actually growing and how well they are doing. If the countryside is bare, it is recommended that they study protected forests near churches and preserved areas in towns and villages as they are normally rich in species. Once a relevant list of potential species has

been made and verified with the help of local people, the extension worker should learn more about the species, for instance, their vernacular names, uses, propagation and management, by studying the information provided in Part III. This, together with the information on uses in Part IV, should give the extension worker enough knowledge to gain him or her the confidence of the local people.

In high schools and teacher training colleges, the staff and students can use this book:

- To identify types of trees suitable for different purposes in their environmental education fieldwork.
- As a resource document to demonstrate how seed germination time could be reduced by using suitable seed treatment methods.
- As a resource book for information on how to raise tree seedlings of different species.
- As a reference book for teaching about the environment in subjects such as geography, biology, agriculture, and home science.

In the technical training of foresters and agriculturalists, the book can be used as a resource in studies of forest botany, agroforestry, silviculture and related subjects. Similar use may be possible in selected subjects at university level.

The species descriptions

Vernacular names

The English or scientific names of trees are usually not the names farmers and pastoralists use. Farmers' choice of species is often expressed in their local (vernacular) language. Even though Amharic, Ethiopia's national language is widely understood, there is no single language that is commonly used by all the nation's people. Therefore, it was decided to include as many vernacular languages as possible, 24.

Vernacular names are given in the Part II and again in Part III, where each species is discussed in detail. Knowledge of local names is essential for any person discussing trees with the people of a given area. There are two limitations to the usefulness of these names. Firstly, there are no standard spellings as these are based on phonetic interpretations of the names. Secondly, names may vary because of the existence of several dialects of the same language in different areas.

We request any reader finding errors or omissions in vernacular names to send us this information.

The following abbreviations of local languages have been used in the text:

Afargna (Af), Agewgna (Ag), Agnuakgna (Agn), Amargna (Am), Borenagna (Br), Bertagna (Brt), English (Eng), Gamogna (Ga), Gimirigna (Gm), Gumuzgna (Gmz), Guragigna (Gr), Haderigna (Hd), Kefgna (Kf), Kematgna (Km), Konsogna (Ks), Mejengrgna (Mjr), Nuyergna (Nur), Oromugna (Or), Sahogna (Sh), Shinashgna (Shn), Sidamigna (Sd), Somaligna (Sm), Tigrigna (Tg), and Wolaytgna (Wt).

Ecology

Under the ecology heading, information is given on the occurrence of each species in the various agroclimatic zones, the altitude range, niches in the landscape, soil preference, drought resistance and other important ecological factors.

Ethiopia is extremely heterogeneous ecologically. This diversity has been classified in a number of different ways by various authorities. However, we have used the agroclimatic zone classification indicated by Azene Bekele-Tesemma and Hakan Sjöholm (2005) and reproduced on page 9.

Unlike the previous version of this book, this revised edition indicates trees and shrubs useful for all the currently known 17 agroclimatic zones of Ethiopia. The distribution map of these agroclimatic zones is included for ease of reference.

The list of species under “Species by Agroclimatic Zones” is useful to extension workers who would like to identify the plants that are suitable for their specific areas.

However, a species being listed under a given agroclimatic zone does not necessarily mean that it will grow well throughout that zone. Neither does it mean that it is limited to that agroclimatic zone either. Therefore, one must refer to the more detailed information given under each species in Part III.

Uses

Uses, both as products and services, have been listed for each species in the summary

table in Part IV. It should be noted that the information reflects “reported” uses — mainly what the rural people claim to use these plants for as cited in first-hand information or in literature.

It was not possible to verify all such reports and statements. Sometimes uses vary from one community to another and from one area to the next. Thus, it is always a good idea to verify uses when discussing any of the listed plants with the local people. In some instances, the reports originated from outside Ethiopia. Although it was not always possible to verify the usage in Ethiopia, we still included the potential uses.

It should also be noted that a single tree or shrub cannot be grown for all the potential uses at the same time. On the contrary, management of a particular tree often aims at optimising a specific product or service.

On medicinal uses, it is worth mentioning that herbal medicine requires skilled practitioners. Therefore, although medicinal uses have been indicated, this does not mean that anyone should start using them without first consulting experienced and knowledgeable people.

Description

When a farmer requires a tree for a particular use, proper identification of that tree is of the greatest importance. The descriptions in this manual focus first on the general appearance of the tree and then the bark, leaves, flowers and fruit. On the page opposite each description are line drawings that

complement the text. With a few exceptions, in this revised version, colour photos of trees or their parts are included to make identification easier. The use of specialized botanical terminology has been kept to a minimum. Before beginning to use the text to identify a plant, the reader should refer to the illustrated glossary on page 48.

It must be noted that there can be great variation in tree size and shape as well as in many other plant characteristics depending on the site where it is found. Therefore, the text sometimes indicates the range of variation that can be expected. However, certain features define that plant species alone. Size and scale are also indicated in the text, but in many illustrations of typical mature trees, an adult person is drawn beside the tree to indicate the scale.

Propagation

Whenever information on suitable propagation methods is available it has been included. “Seedlings” indicates that a relevant propagation method is raising seedlings in some sort of nursery, either on-farm or in a central or group nursery. “Wildings” indicates that it is known that farmers propagate a certain species by collecting and transplanting wildings to a desired place on their farms, or that this is one means of propagating the plant.

“Direct sowing at site” means that a species can be propagated by direct sowing of seed at the desired site, and “cuttings” means propagation by cuttings is recommended. Cuttings is a more common vegetative multiplication technique, while budding

and grafting are mentioned for fruit trees. Coppicing resembles propagation but it is actually a management practice. Hence, coppicing ability is given under “management”. The same applies for use of root suckers.

Seed information

Most trees and shrubs are propagated using seed. Information is given on the number of seeds per kilogram, seed storage and simple treatment before sowing (if required).

Storage of seeds should generally be avoided for most species. In this manual, the storage periods indicated are not precise. This is deliberate because loss of seed viability is a gradual process, the speed depending on many factors, but mainly the storage conditions. Hence, only approximate indications of acceptable storage periods can be given. If seeds are to be stored for some time, it is always best to keep them in a cool, dry and insect-free place. Properly dried seeds can be stored in air-tight containers, such as sealed bottles or tins.

Information on seeds for many of the species preferred by farmers is unavailable. In these cases, the user should find out the details locally.

Management

Different management techniques allow tree growers to optimise tree and shrub products or services. Management techniques may also be applied to reduce negative effects of the presence of trees and shrubs, such as the shading effect on adjacent crops.

The most common management practices are pruning of roots and branches, coppicing, lopping and pollarding. Whenever a certain management technique is known to be feasible for a certain species, it is indicated. Information on the growth rate is also provided under this heading.

All young trees grow fast and are more likely to survive if properly weeded and, if necessary, thinned. Since such general management requirements apply to all species, they have not been indicated in the detailed information on each species.

Remarks

Any other useful or interesting information that does not fall into the above categories is included under “remarks”.

Agroclimatic zones considered

1. DRY BEREHA = Dry Hot-lowlands
2. MOIST BEREHA = Moist Hot-lowlands
3. DRY KOLLA = Dry Lowlands
4. MOIST KOLLA= Moist Lowlands
5. WET KOLLA = Wet Lowlands
6. DRY WEYNA DEGA = Dry Mid-highlands
7. MOIST WEYNA DEGA= Moist Mid-highlands
8. WET WEYNA DEGA= Wet Mid-highlands
9. DRY DEGA = Dry Highlands
10. MOIST DEGA = Moist Highlands
11. WET DEGA = Wet Highlands
12. DRY WURCH = Dry Frost zones
13. MOIST WURCH = Moist Frost zones

14. WET WURCH = Wet Frost Zones
15. DRY ALPINE WURCH = Dry Alpina-frost Zones
16. MOIST ALPINE WURCH = Moist Alpina-frost zones
17. WET ALPINE WURCH = Wet Alpina-frost zone

> 3700 asi	<u>DRY ALPINE WURCH</u> A: None (dry and too cold) C: None S: Black soils, degraded T: lichens, <i>Hypericum quartianum</i> , <i>Hypericum roeperianum</i>	<u>MOIST ALPINE WURCH</u> A: None (frost limit) C: None S: Dark black soils, shallow T: <i>Hypericum quartianum</i> , <i>Hypericum roeperianum</i>	<u>WET ALPINE WURCH</u> A: None (too cold and too wet) C: None S: Dark black soils, deep T: Grasses, <i>Hypericum quartianum</i> , <i>Hypericum roeperianum</i>
>3200-3700 m above sea level	<u>DRY WURCH</u> A: Only barley, single cropping per year C: Drainage none S: Gray soils, degraded T: <i>Erica</i> species	<u>MOIST WURCH</u> A: Only barley, single cropping per year C: Drainage rare S: Black soils, degraded T: <i>Erica</i> , <i>Hypericum</i>	<u>WET WURCH</u> A: Only barley. 2 crops per year C: Wide-spread drainage ditches S: Black soils, highly degraded T: <i>Erica</i> , <i>Hypericum</i>
>2300-3200 m above sea level	<u>DRY DEGA</u> A: Barley, wheat and pulses C: Traditional moisture conservation measures eg. furrow with tie-ridges S: Gray to brownish gray soils T: <i>Olea europaea</i>	<u>MOIST DEGA</u> A: Barley, wheat and pulses C: Few traditional terracing S: Brown clay soils T: <i>Juniperus procera</i> , <i>Hagenia abyssinica</i> , <i>Podocarpus falcatus</i>	<u>WET DEGA</u> A: Barley, wheat, Nug, pulses, 2 crops/ year C: Wide spread drainage ditches S: dark brown clay soils T: <i>Juniperus procera</i> , <i>Hagenia</i> , <i>Podocarpus falcatus</i>
>1500- 2300 m above sea level	<u>DRY WEYNA DEGA</u> A: Wheat, tef, rarely maize C: Terracing wide spread S: Light brown yellow soils T: <i>Acacia savannah</i>	<u>MOIST WEYNA DEGA</u> A: Maize, sorghum, tef, enset (rare), wheat, Nug, Dagussa, barley. C: Traditional terracing S: Red brown soils T: <i>Acacia</i> , <i>Cordia africana</i>	<u>WET WEYNA DEGA</u> A: Tef, maize, enset (in West parts), Nug, barley C: Wide spread drainage S: Red clay soils, deeply weathered, Gullies frequent T: <i>Acacia</i> , <i>Cordia</i>
500 - 1500 m above sea level	<u>DRY KOLLA</u> A: Sorghum rarely, tef, C: Water retention terraces S: Yellow sandy soils T: <i>Acacia</i> bushes and trees	<u>MOIST KOLLA</u> A: Sorghum, rarely tef, Nug, Dagussa, C: Widespread terracing S: Yellow silty soils T: <i>Acacia</i> , <i>Erythrina</i> , <i>Cordia</i> , <i>Ficus</i>	<u>WET KOLLA</u> A: Mango, taro, sugar cane, maize, coffee, citrus. C: Ditches frequent S: red clay soils. Highly oxidized. T: <i>Milicia excelsa</i> , <i>Cyathea manniana</i>
< 500 m above sea level	<u>DRY BEREHA</u> A: possible only with irrigation C: Wind erosion frequent S: Aridsol, rigosols, silty and sandy. T: <i>Acacia senegal</i> , <i>Acacia bussei</i> , <i>Tamarix aphylla</i>	<u>MOIST BEREHA</u> A: Seasonal rain-fed agriculture possible C: Burning grasses common, No wind erosion due to cover of tall grasses S: Silty and clayey, mainly black, T: <i>Ziziphus pubescens</i> , <i>Antiaris toxicaria</i>	
ANNUAL PPT	< 900 mm	900 mm - 1400 mm	> 1400 mm
Rainfall in millimetres			

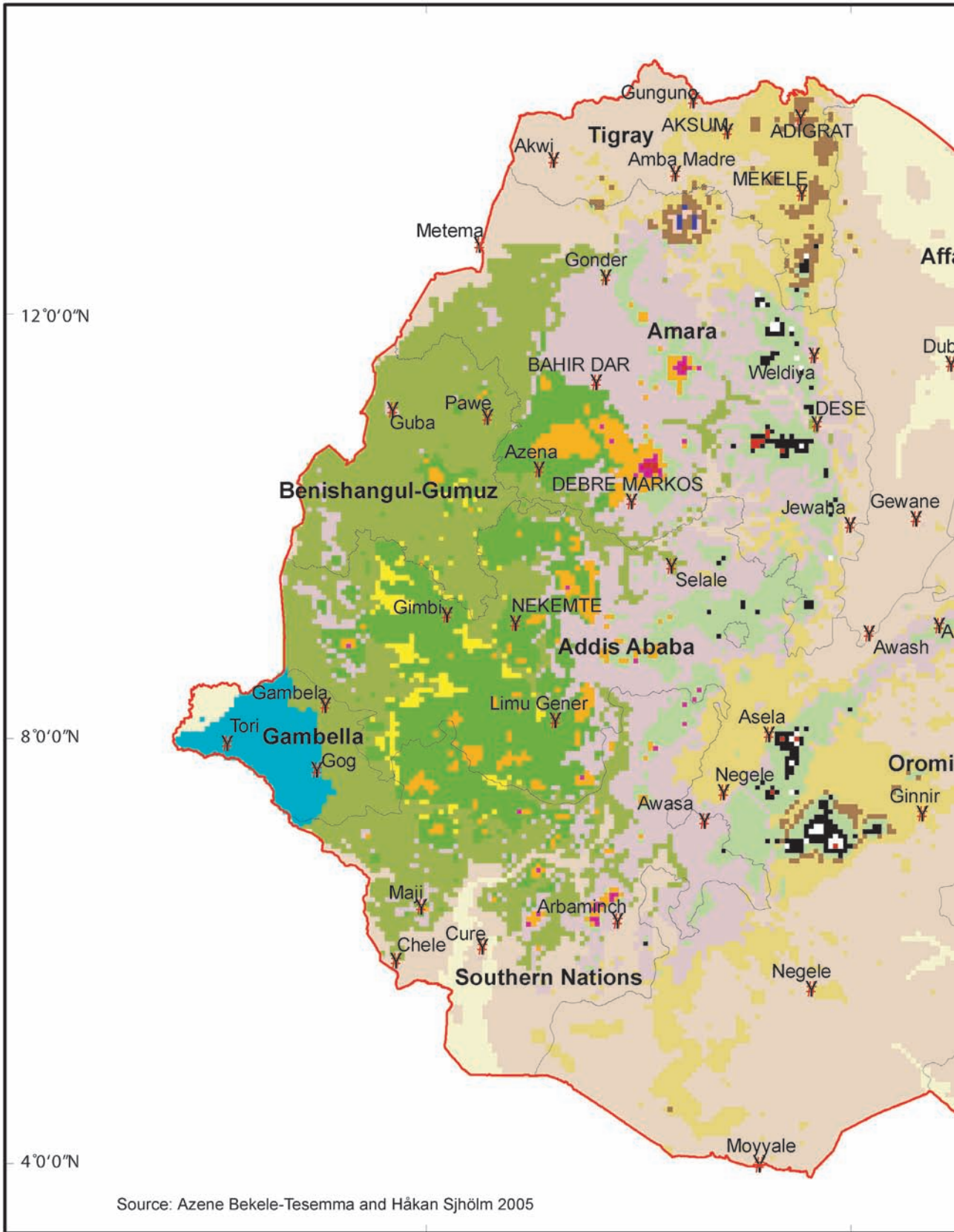
A : Main crop C : Traditional soil conservation S : Soil on slopes T : Natural trees and other vegetation

Source: Azene Bekele-Tesemma, and Håkan Sjöholm. 2005.

PPT : Precipitation

36°00'00"E

40°00'00"E



Source: Azene Bekele-Tesemma and Håkan Sjhölm 2005

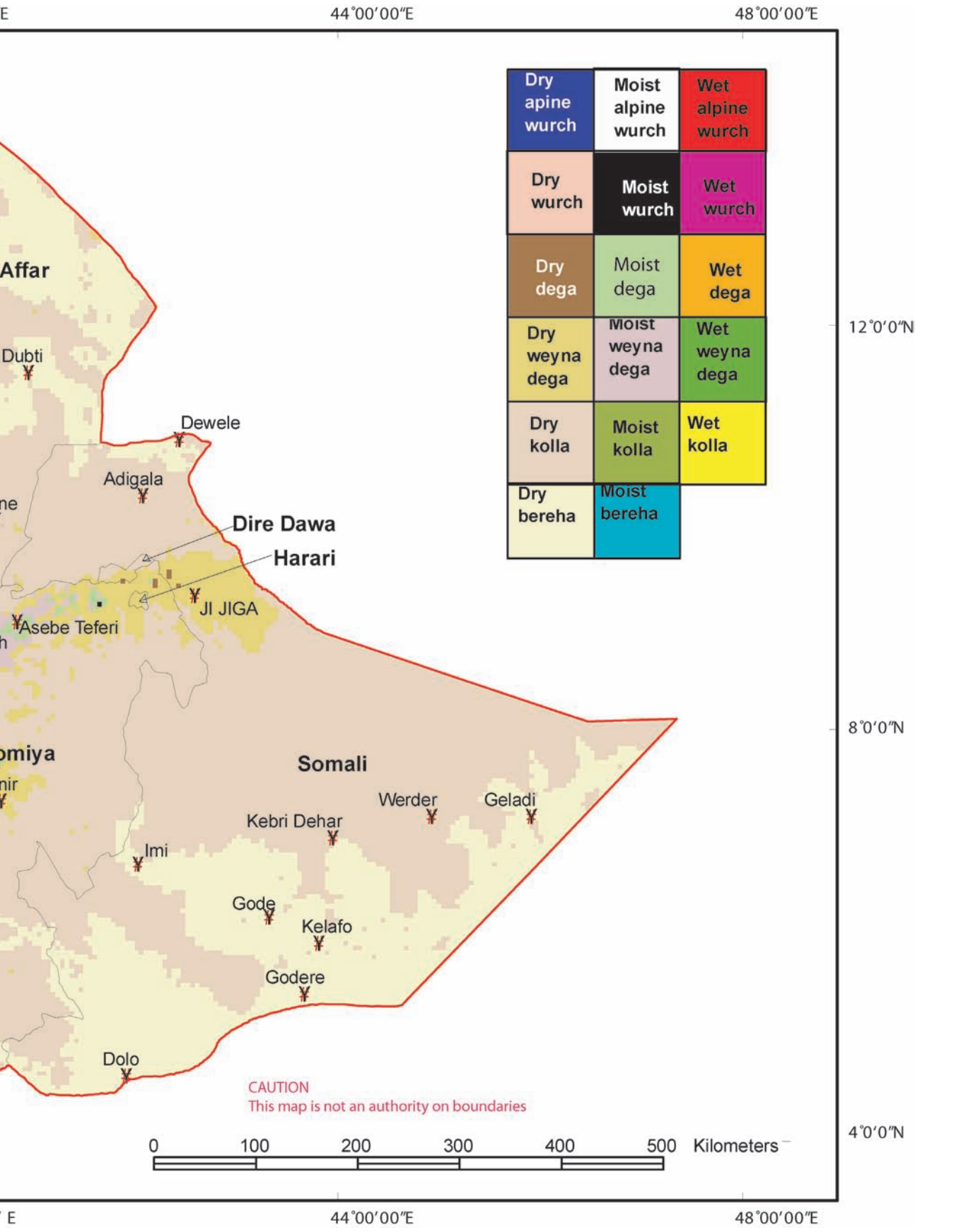
36°00'00"E

40°00'00" E

12°0'0"N

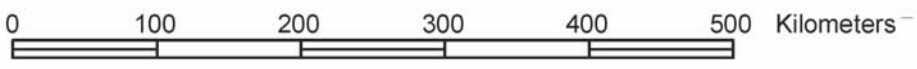
8°0'0"N

4°0'0"N



Dry alpine wurch	Moist alpine wurch	Wet alpine wurch
Dry wurch	Moist wurch	Wet wurch
Dry dega	Moist dega	Wet dega
Dry weyna dega	Moist weyna dega	Wet weyna dega
Dry kolla	Moist kolla	Wet kolla
Dry bereha	Moist bereha	

CAUTION
This map is not an authority on boundaries



HARMONISED AGROCLIMATIC ZONES MAP OF EAST AFRICA

45°0'0"E

40°0'0"E

35°0'0"E

30°0'0"E

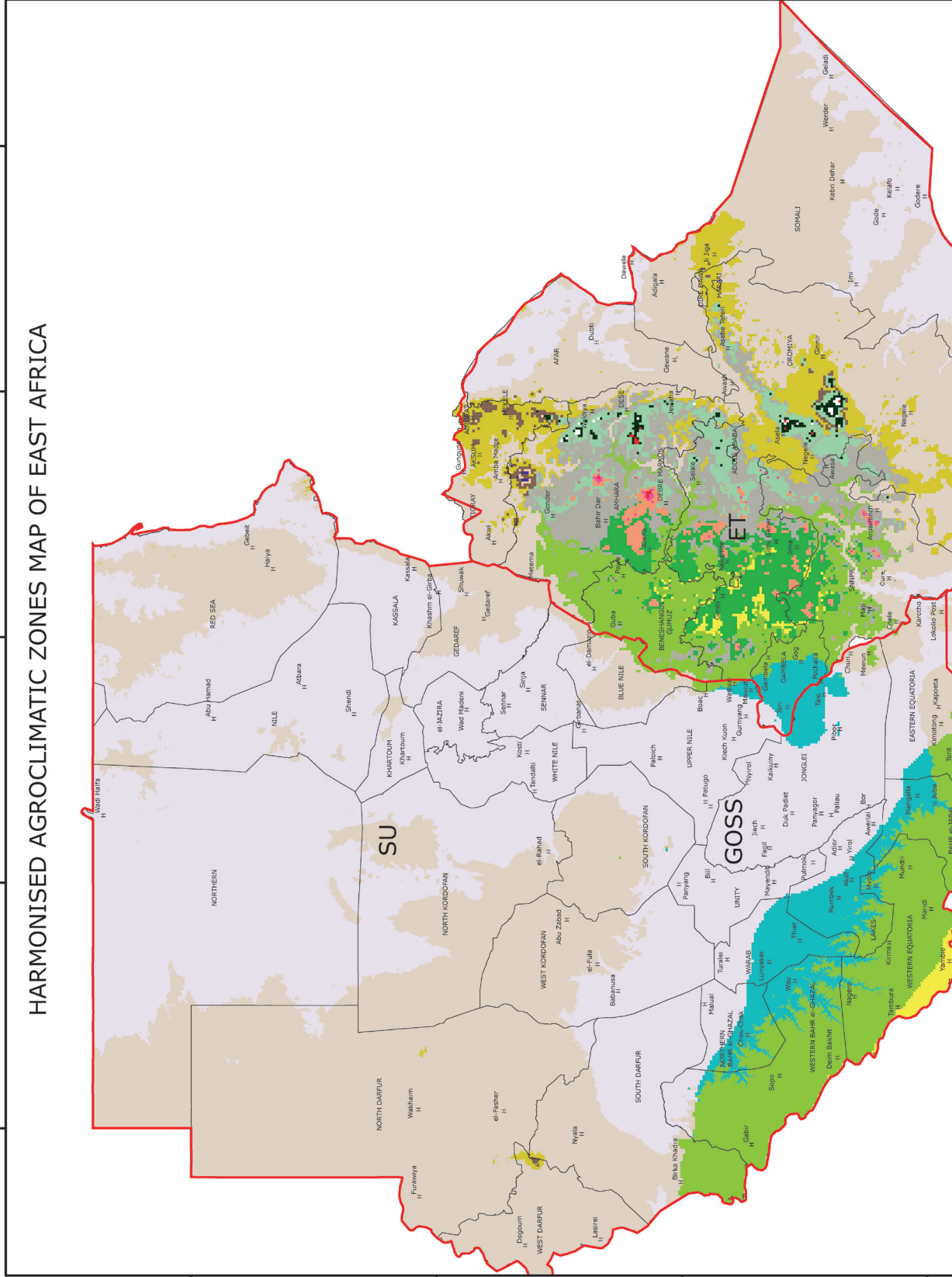
25°0'0"E

20°0'0"N

15°0'0"N

10°0'0"N

5°0'0"N



20°0'0"N

15°0'0"N

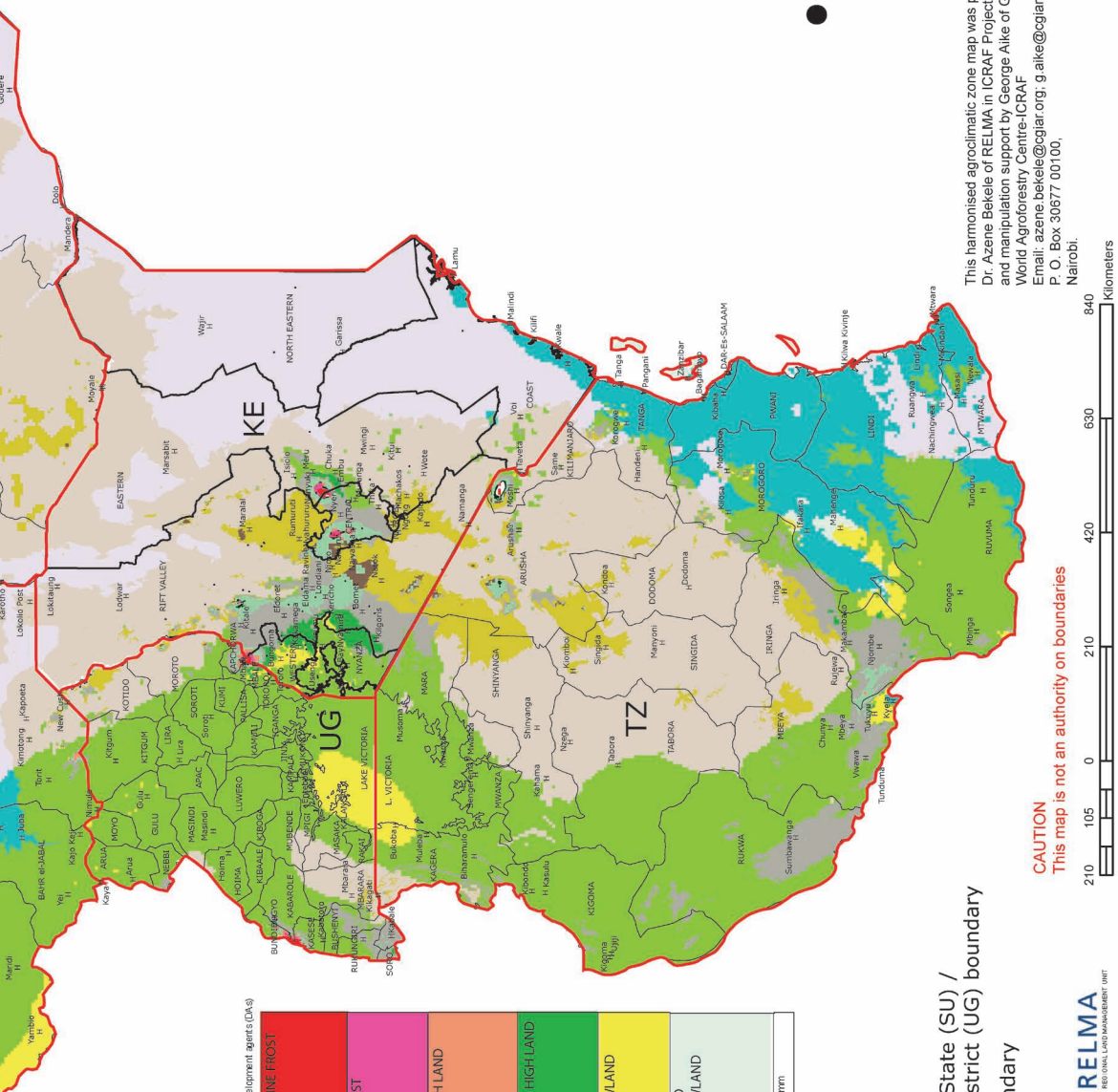
10°0'0"N

5°0'0"N

5°00'N
0°00'
5°00'S

0°00'
5°00'S

10°00'S
0°00'



climatic zones with simple on-site identification tools for ease of use by development agents (DA-g)

	MOIST ALPINE FROST	WET ALPINE FROST
> 3700 m		
	MOIST FROST	WET FROST
> 2000-3700 m		
Altitude in meters above sea level		
> 2300-3200 m	MOIST HIGH LAND	WET HIGH LAND
> 1500-2300 m	MOIST MID HIGH LAND	WET MID HIGH LAND
500 - 1500 m	MOIST LOW LAND	WET LOW LAND
500 - 1500 m	MOIST AND HOT LOW LAND	WET AND HOT LOW LAND
< 500 m		
	< 800 mm	> 1400 mm
	Mean annual rainfall in millimeters	

- H** Town
- Region (ET, TZ) / State (SU) / Province (KE) / District (UG) boundary
- International boundary



CAUTION
This map is not an authority on boundaries

This harmonised agroclimatic zone map was prepared by Dr. Azene Bekele of RELMA in ICRAF Project with GIS mapping and manipulation support by George Alike of GIS Unit, World Agroforestry Centre-ICRAF
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PART II

Species by vernacular names
and agroclimatic zones

Venacular names of species

Afargna (Af)

Adiquento	<i>Acacia seyal</i>
Behbey	<i>Acacia tortilis</i>
Dadaho	<i>Salvadora persica</i>
Eibeto	<i>Acacia asak</i>
Fo	<i>Grewia ferruginea</i>
Garas	<i>Dobera glabra</i>
Gishita	<i>Annona senegalensis</i> (<i>A. chrysophylla</i>)
Kat	<i>Catha edulis</i>
Keselto	<i>Acacia abyssinica</i> subsp. <i>abyssinica</i>
Makani	<i>Acacia seyal</i>
Sanu	<i>Senna alexandrina</i> (<i>Cassia alexandrina</i>)
Segentu	<i>Tamarindus indica</i>

Agewgna (Ag)

Aguami	<i>Carissa spinarum</i> (<i>C. edulis</i>)
Alumi	<i>Discopodium penninervum</i>
Anini	<i>Arundinaria alpina</i>
Arezana	<i>Stereospermum kunthianum</i>
Askwar	<i>Buddleia polystachya</i>
Awlish	<i>Strychnos spinosa</i>
Azmiri	<i>Bersama abyssinica</i> subsp. <i>abyssinica</i>
Bagootsi	<i>Strychnos spinosa</i>
Bisira	<i>Acokanthera schimperi</i>
Bugitsi	<i>Cordia africana</i>
Buri	<i>Erythrina abyssinica</i>
Buri	<i>Erythrina brucei</i>
Chakmi	<i>Ricinus communis</i>
Chellegama	<i>Acacia oerfota</i> (<i>A. nubica</i>)
Churi	<i>Ekebergia capensis</i> (<i>E. rueppeliana</i>)
Dinkifi	<i>Bersama abyssinica</i> subsp. <i>abyssinica</i>
Emwi	<i>Ficus sur</i> (<i>F. capensis</i>)
Emwi	<i>Ficus sycomorus</i>
Enkoki	<i>Embelia schimperi</i>

Entahtahi	<i>Allophylus abyssinicus</i>
Equa	<i>Celtis africana</i>
Fatuka	<i>Boswellia papyrifera</i>
Frqa	<i>Piliostigma thonningii</i>
Gangi	<i>Ensete ventricosum</i> (<i>E. edule</i>)
Geba	<i>Ziziphus mucronata</i>
Gebho	<i>Rhamnus prinoides</i>
Gmtsi	<i>Rosa abyssinica</i>
Gora-gora	<i>Hagenia abyssinica</i>
Kansin	<i>Albizia gummifera</i>
Kerara	<i>Dodonaea viscosa</i>
Khokhitsi	<i>Vernonia amygdalina</i>
Kumini	<i>Rhus glutinosa</i>
Lili	<i>Justicia schimperiana</i> (<i>Adhatoda schimperiana</i>)
Mawordi	<i>Rosa abyssinica</i>
Pimepini	<i>Schefflera abyssinica</i>
Qutsa	<i>Balanites aegyptiaca</i>
Qutta	<i>Balanites aegyptiaca</i>
Qwa	<i>Commiphora africana</i>
Sebeti	<i>Phytolacca dodecandra</i>
Senno	<i>Senna alexandrina</i> (<i>Cassia alexandrina</i>)
Shinchi	<i>Hagenia abyssinica</i>
Shwelsha	<i>Salvadora persica</i>
Sila	<i>Vepris nobilis</i> (<i>Teclea nobilis</i>)
Tahtai	<i>Pittosporum viridiflorum</i>
Tsatsi	<i>Acacia abyssinica</i> subsp. <i>abyssinica</i>
Tsivi	<i>Acacia lahai</i>
Tsutsui	<i>Salix mucronata</i> (<i>S. subserrata</i>)
Tutuqa	<i>Ximenia americana</i>
Waggaru	<i>Millettia ferruginea</i>
Wiri	<i>Olea europaea</i> subsp. <i>cuspidata</i> (<i>Olea africana</i>)
Yeferenj Tsatsi	<i>Acacia decurrens</i>
Zhinkuti	<i>Pittosporum viridiflorum</i>
Zindi	<i>Apodytes dimidiata</i>
Zinkila	<i>Berberis holstii</i>

Agnuakgna (Agn)

Abuwo	<i>Calotropis procera</i>
Adew	<i>Diospyros mespiliformis</i>
Adidewi	<i>Baphia abyssinica</i>
Adiiquala leach	<i>Strychnos innocua</i>
Adiquala	<i>Oncoba spinosa</i>
Adu	<i>Morus mesozygia</i>
Adudeeguoy	<i>Baphia abyssinica</i>
Alaro	<i>Acacia nilotica</i>
Alwaru	<i>Lonchocarpus laxiflorus</i>
Arim	<i>Lannea welwitschii</i>
Byby	<i>Azadirachta indica</i>
Chipolo	<i>Stereospermum kunthianum</i>
Dowa	<i>Gardenia ternifolia</i>
Downg	<i>Gardenia ternifolia</i>
Ja	<i>Kigelia africana</i> (<i>K. aethiopum</i> , <i>K. pinnata</i>)
Jemma	<i>Erythroxylum fischeri</i>
Jemmoh	<i>Erythroxylum fischeri</i>
Kijang	<i>Lepidotrichilia volkensii</i>
Lang	<i>Ziziphus spina-christi</i>
Lemun	<i>Citrus aurantifolia</i>
Lemunat	<i>Citrus sinensis</i>
Lero	<i>Lonchocarpus laxiflorus</i>
Alwaro	<i>Lonchocarpus laxiflorus</i>
Lero	<i>Celtis toka</i>
Lero	<i>Ziziphus pubescens</i>
Liu	<i>Strychnos spinosa</i>
Mogno	<i>Sarcocephalus latifolius</i>
Olam	<i>Ficus sur</i> (<i>F. capensis</i>)
Opero	<i>Olyra latifolia</i>
Orowyee	<i>Diospyros mespiliformis</i>
Pok	<i>Terminalia laxiflora</i>
Pok	<i>Entada abyssinica</i>
Reed	<i>Anogeissus leiocarpus</i>
Tenga	<i>Antiaris toxicaria</i>
Tungwo	<i>Antiaris toxicaria</i>
Toow	<i>Balanites aegyptiaca</i>
Uchek	<i>Morus mesozygia</i>
Udua	<i>Borassus aethiopum</i>
Ulweado	<i>Lonchocarpus laxiflorus</i>

Ungwoyo	<i>Sarcocephalus latifolius</i>
Urao	<i>Securidaca longipedunculata</i>
Urao	<i>Steganotaenia araliacea</i>
Uriemo	<i>Sterculia africana</i>
Urogu	<i>Cordia africana</i>
Wed	<i>Vitellaria paradoxa</i> (<i>Butyrospermum niloticum</i>)
Worgaye	<i>Blighia unijugata</i>

Amargna (Am)

Abera	<i>Lepidotrichilia volkensii</i>
Aday	<i>Salvadora persica</i>
Ades	<i>Myrtus communis</i>
Ado qurqura	<i>Ziziphus mucronata</i>
Agalo	<i>Combretum molle</i>
Agam	<i>Carissa spinarum</i> (<i>C. edulis</i>)
Ahaya	<i>Salix mucronata</i> (<i>S. subserrata</i>)
Ahot	<i>Pittosporum viridiflorum</i>
Akacha saligna	<i>Acacia saligna</i> (<i>Racosperma saligna</i>)
Akacha	<i>Acacia decurrens</i>
Alenqoza	<i>Grewia ferruginea</i>
Ambeshok	<i>Annona muricata</i>
Amburqa	<i>Strychnos innocua</i>
Ameraro	<i>Discopodium penninervum</i>
Amija	<i>Hypericum quartinianum</i>
Amija	<i>Hypericum roeperianum</i>
Amlaka	<i>Celtis africana</i>
Anfar	<i>Buddleia polystachya</i>
Anqa	<i>Commiphora africana</i>
Anqwa	<i>Commiphora habessinica</i>
Arsinia	<i>Stereospermum kunthianum</i>
Arzelibanos	<i>Casuarina cunninghamiana</i>
Arzelibanos	<i>Casuarina equisetifolia</i>
Atat	<i>Maytenus arbutifolia</i>
Atesa	<i>Vepris nobilis</i> (<i>Teclea nobilis</i>)
Atquar	<i>Buddleia polystachya</i>
Atquar	<i>Nuxia congesta</i>
Avalo	<i>Combretum molle</i>
Avocado	<i>Persea americana</i>
Ayeh	<i>Diospyros mespiliformis</i>

Amargna (Am) cont.

Azamir	<i>Bersama abyssinica</i> subsp. <i>abyssinica</i>	Eret	<i>Aloe vera</i>
Bagur	<i>Combretum molle</i>	Ergofit	<i>Erythrina brucei</i>
Baguri	<i>Terminalia laxiflora</i>	Etse Menabele	<i>Securidaca longipedunculata</i>
Bamba	<i>Adansonia digitata</i>	Etse	<i>Securidaca longipedunculata</i>
Bamba	<i>Ficus sycomorus</i>	Etse	<i>Steganotaenia araliacea</i>
Bazra girar	<i>Acacia abyssinica</i> subsp. <i>abyssinica</i>	Filfile	<i>Parkinsonia aculeata</i>
Bedeno	<i>Balanites aegyptiaca</i>	Foch	<i>Ziziphus mucronata</i>
Beles	<i>Ficus carica</i>	Gambello	<i>Gardenia volkensii</i>
Beye	<i>Olinia rochetiana</i>	Game	<i>Ehretia cymosa</i>
Birbira	<i>Millettia ferruginea</i>	Gararu	<i>Acokanthera schimperi</i>
Birtukan	<i>Citrus sinensis</i>	Gegema	<i>Olea capensis</i> subsp. <i>macrocarpa</i> (<i>O. hochstetteri</i>)
Bisana	<i>Croton macrostachyus</i>	Geram atat	<i>Maytenus undata</i>
Bonga	<i>Trichilia dregeana</i>	Gesho	<i>Rhamnus prinoides</i>
Botoro	<i>Markhamia lutea</i>	Gewo	<i>Berberis holstii</i>
Butigi	<i>Manilkara butugi</i>	Ghinda	<i>Calotropis procera</i>
Chai	<i>Trilepisium madagascariense</i> (<i>Bosquiea phoberos</i>)	Giishta	<i>Annona senegalensis</i> (<i>A. chrysophylla</i>)
Chakema	<i>Rhus natalensis</i>	Girangire	<i>Sesbania sesban</i>
Chat	<i>Catha edulis</i>	Girar	<i>Acacia bussei</i>
Cheba	<i>Acacia labai</i>	Gitem	<i>Schefflera abyssinica</i>
Cheba	<i>Acacia nilotica</i>	Gmarda	<i>Acacia polyacantha</i> subsp. <i>campylacantha</i>
Cheleleqa	<i>Apodytes dimidiata</i>	Gogoba	<i>Maytenus senegalensis</i>
Chocho	<i>Nuxia congesta</i>	Gorade	<i>Delonix regia</i>
Chocho	<i>Premna schimperi</i>	Gorgo	<i>Erythrina abyssinica</i>
Damot weira	<i>Olea capensis</i> subsp. <i>macrocarpa</i> (<i>O. hochstetteri</i>)	Grar	<i>Acacia albida</i> (<i>Faidherbia albida</i>)
Dedeho	<i>Euclea racemosa</i> subsp. <i>schimperi</i>	Grawa	<i>Vernonia amygdalina</i>
Deweni garar	<i>Acacia tortilis</i>	Grevila	<i>Grevillea robusta</i>
Dire Dawa zaf	<i>Delonix regia</i>	Gulo	<i>Maytenus senegalensis</i>
Dokma	<i>Strychnos spinosa</i>	Gulo	<i>Ricinus communis</i>
Donga	<i>Apodytes dimidiata</i>	Gumero	<i>Capparis tomentosa</i>
Ekuku	<i>Oncoba spinosa</i>	Guna-guna	<i>Ensete ventricosum</i> (<i>E. edule</i>)
Tsewa	<i>Oncoba spinosa</i>	Hina	<i>Lawsonia inermis</i>
Elaho	<i>Pittosporum viridiflorum</i>	Hultabsa	<i>Stereospermum kunthianum</i>
Embus	<i>Allophylus abyssinicus</i>	Humer	<i>Tamarindus indica</i>
Embus	<i>Rhus glutinosa</i>	Imasa	<i>Albizia schimperiana</i>
Enqoqo	<i>Embelia schimperi</i>	Indod	<i>Phytolacca dodecandra</i>
Enset	<i>Ensete ventricosum</i> (<i>E. edule</i>)	Inguachia	<i>Strychnos innocua</i>
		Injori	<i>Morus mesozygia</i>
		Inkoy	<i>Ximenia americana</i>

Amargna (Am) cont.

Ishe	<i>Mimuspops kummel</i>	Kulkual	<i>Euphorbia abyssinica</i>
Itsepatos	<i>Dracaena steudneri</i>	Kulkual	<i>Euphorbia abyssinica</i>
Jejeba	<i>Berchemia discolor</i>	Lebbek	<i>Albizia lebbek</i>
Jemo	<i>Balanites aegyptiaca</i>	Lemem	<i>Acokanthera schimperii</i>
Kanafa	<i>Warburgia ugandensis</i>	Lenkoata	<i>Grewia ferruginea</i>
Kariu	<i>Polyscias fulva</i>	Lenquata	<i>Grewia villosa</i>
Kawoot	<i>Celtis africana</i>	Lol	<i>Ekebergia capensis</i> (<i>E. rueppeliana</i>)
Kazamora	<i>Casimiroa edulis</i>	Lomi	<i>Citrus aurantifolia</i>
Kechachilo	<i>Flueggea virosa</i>	Lukina	<i>Leucaena leucocephala</i>
Kefeta	<i>Pittosporum viridiflorum</i>	Mahogani	<i>Trichilia emetic</i>
Kega	<i>Rosa abyssinica</i>	Mango	<i>Mangifera indica</i>
Kentefa	<i>Acacia brevispica</i>	Meka	<i>Arundo donax</i>
Kentefa	<i>Entada abyssinica</i>	Menahe	<i>Securidaca longipedunculata</i>
Keraro	<i>Pouteria adolfi-friedericii</i> (<i>Aningeria adolfi-friedericii</i>)	Menahe	<i>Steganotaenia araliacea</i>
Kerero	<i>Pouteria altissima</i> (<i>Aningeria altissima</i>)	Menderin	<i>Citrus reticulata</i>
Kererrie	<i>Boswellia papyrifera</i>	Merenz	<i>Acokanthera schimperii</i>
Kerkha	<i>Arundinaria alpina</i>	Merenz	<i>Strychnos innocua</i>
Kermo ayederk	<i>Erythrina brucei</i>	Mezazign	<i>Acacia brevispica</i>
Kesem	<i>Olyra latifolia</i>	Mimosa	<i>Acacia decurrens</i>
Key bahir zaf	<i>Eucalyptus camaldulensis</i>	Mimosa	<i>Acacia mearnsii</i> (<i>Racosperma mearnsii</i>)
Key bahir zaf	<i>Eucalyptus grandis</i>	Misir gemfo	<i>Ilex mitis</i>
Key bahir zaf	<i>Eucalyptus viminalis</i>	Moata	<i>Dracaena steudneri</i>
Kinchib	<i>Euphorbia tirucalli</i>	Moke	<i>Erythroxylum fischeri</i>
Kinin	<i>Azadirachta indica</i>	Nech atat	<i>Maytenus senegalensis</i>
Kitkita	<i>Dodonaea viscosa</i>	Omedla	<i>Acacia melanoxylon</i>
Koba	<i>Ensete ventricosum</i> (<i>E. edule</i>)	Pachula	<i>Pinus patula</i>
Kock	<i>Prunus persica</i>	Plem	<i>Vitex doniana</i>
Kokora	<i>Schefflera abyssinica</i>	Pom	<i>Malus domestica</i>
Kol	<i>Ximenia americana</i>	Prosopis	<i>Prosopis juliflora</i>
Kontevl	<i>Acacia brevispica</i>	Qamo	<i>Rhus glutinosa</i>
Kontir	<i>Acacia senegal</i>	Qequewe	<i>Allophylus abyssinicus</i>
Kontir	<i>Entada abyssinica</i>	Qimbo	<i>Calotropis procera</i>
Korch	<i>Erythrina abyssinica</i>	Qmmo	<i>Rhus vulgaris</i>
Korch	<i>Erythrina brucei</i>	Qoqoba	<i>Maytenus senegalensis</i>
Korra	<i>Erythrina abyssinica</i>	Qundo berbere	<i>Schinus molle</i>
Koshim	<i>Dovyalis abyssinica</i>	Qurqura	<i>Ziziphus spina-christi</i>
Kosso	<i>Hagenia abyssinica</i>	Qurqurah	<i>Ziziphus mauritiana</i>
Kuara	<i>Erythrina abyssinica</i>	Radiata	<i>Pinus radiata</i>
Kudkuda	<i>Balanites aegyptiaca</i>	Roka	<i>Tamarindus indica</i>
		Saligna bahir zaf	<i>Eucalyptus saligna</i>

Amargna (Am) cont.

Sassa	<i>Albizia schimperiana</i>	Tinjut	<i>Combretum collinum</i>
Sbansa-girar	<i>Acacia senegal</i>	Tiringo	<i>Citrus medica</i>
Sebansa	<i>Acacia asak</i>	Tobiaw	<i>Calotropis procera</i>
Sefa	<i>Grewia bicolor</i>	Tree lucern	<i>Chamaecytisus proliferus</i>
Seged	<i>Psyrax schimperiana</i> subsp. <i>schimperiana</i> (<i>Canthium</i> <i>schimperianum</i>)	Tsedo	<i>Rhamnus staddo</i>
Selechegn	<i>Diospyros abyssinica</i>	Tunjit	<i>Otostegia integrifolia</i>
Selen	<i>Phoenix reclinata</i>	Ungoi	<i>Combretum aculeatum</i>
Sembaru	<i>Albizia schimperiana</i>	Wachu	<i>Acacia seyal</i>
Sensel	<i>Justicia schimperiana</i> (<i>Adhatoda schimperiana</i>)	Wanza	<i>Cordia africana</i>
Sesa	<i>Albizia gummifera</i>	Washta	<i>Stereospermum kunthianum</i>
Shembeko	<i>Arundo donax</i>	Washint	<i>Stereospermum kunthianum</i>
Shewshewe	<i>Casuarina cunninghamiana</i>	Weira	<i>Olea europaea</i> subsp. <i>cuspidata</i> (<i>Olea africana</i>)
Shewshewe	<i>Casuarina equisetifolia</i>	Weyel	<i>Pittosporum viridiflorum</i>
Shiferaw	<i>Moringa oleifera</i>	Wonz admik	<i>Salix mucronata</i> (<i>S. subserrata</i>)
Shifere	<i>Albizia lophantha</i>	Woshmella	<i>Eriobotrya japonica</i>
Shito bahir zaf	<i>Eucalyptus citriodora</i>	Wttie	<i>Acacia lahai</i>
Shiye	<i>Mimusops kummel</i>	Wulkeffa	<i>Dombeya torrida</i> subsp. <i>torrida</i> (<i>D. goetzenii</i>)
Shmel	<i>Oxytenanthera abyssinica</i>	Ye eyerusalem	<i>Parkinsonia aculeata</i>
Shola	<i>Ficus sur</i> (<i>F. capensis</i>)	eshoh	
Shola	<i>Ficus sycomorus</i>	Yeber lib	<i>Annona senegalensis</i>
Sni	<i>Vepris nobilis</i> (<i>Teclea nobilis</i>)	Yedega atat	<i>Maytenus senegalensis</i>
Solie	<i>Galiniera saxifraga</i> (<i>G. coffeoides</i>)	Yeferenji digita	<i>Senna siamea</i> (<i>Cassia siamea</i>)
Somaya	<i>Grewia bicolor</i>	Yeferenji injori	<i>Morus alba</i>
Somb	<i>Ekebergia capensis</i> (<i>E. rueppeliana</i>)	Yeferenji kitkita	<i>Caesalpinia decapetala</i>
Takuma;	<i>Rhus natalensis</i>	Yeferenji-tid	<i>Cupressus lusitanica</i>
Tedo	<i>Rhamnus staddo</i>	Yegoma zaf	<i>Ficus elastic</i>
Temar	<i>Pithecellobium dulce</i>	Yegoma zaf	<i>Hevea brasiliensis</i>
Temene	<i>Securidaca longipedunculata</i>	Yeharer-mefaqa	<i>Salvadora persica</i>
Temene	<i>Steganotaenia araliacea</i>	Yekolla wanza	<i>Piliostigma thonningii</i>
Teselimo	<i>Ekebergia capensis</i> (<i>E. rueppeliana</i>)	Yeneber tifer	<i>Bridelia micrantha</i>
Teye	<i>Grewia bicolor</i>	Yeregna kolo	<i>Rhus vulgaris</i>
Tid	<i>Juniperus procera</i>	Yergib ater	<i>Cajanus cajan</i>
Tife	<i>Olinia rochetiana</i>	Yeset af	<i>Berberis holstii</i>
Tikur inchet	<i>Prunus africana</i>	Ye-Sidamo	<i>Boswellia rivae</i>
Tilem	<i>Rhus glutinosa</i>	etan zaf	
		Yetebmenja zaf	<i>Jacaranda mimosifolia</i>
		Yetemir zaf	<i>Phoenix dactylifera</i>
		Ye-tigre etan zaf	<i>Boswellia papyrifera</i>
		Yetit zaf	<i>Ceiba pentandra</i>

Amargna (Am) cont.

Yetota buna	<i>Pavetta oliveriana</i>
Yetota kula	<i>Galiniera saxifraga</i> (<i>G. coffeoides</i>)
Yewof ater	<i>Cajanus cajan</i>
Yezinjero wonber	<i>Polyscias fulva</i>
Zana	<i>Stereospermum kunthianum</i>
Zeituna	<i>Psidium guajava</i>
Zembaba	<i>Borassus aethiopum</i>
Zembaba	<i>Hyphaene thebaica</i>
Zembaba	<i>Phoenix dactylifera</i>
Zembaba	<i>Phoenix reclinata</i>
Zenfok	<i>Combretum aculeatum</i>
Zigba	<i>Podocarpus falcatus</i> (<i>P. gracilior</i>)
Zinkila	<i>Berberis holstii</i>
Zobbi	<i>Dalbergia melanoxydon</i>
Zogdom	<i>Warburgia ugandensis</i>

Bertagna (Brt)

Gagu	<i>Oxytenanthera abyssinica</i>
Abanga	<i>Cordia africana</i>
Al lemu	<i>Citrus aurantifolia</i>
Anzum	<i>Strychnos spinosa</i>
Atsoda	<i>Ziziphus spina-christi</i>
Embelish	<i>Erythrina brucei</i>
Hashnur	<i>Combretum molle</i>
Mensha	<i>Ficus sur</i> (<i>F. capensis</i>)
Sheqet	<i>Securidaca longipedunculata</i>
Sheqet	<i>Steganotaenia araliacea</i>
Viv	<i>Ximenia americana</i>

Borenagna (Br)

Abairtubata	<i>Piliostigma thonningii</i>
Anno	<i>Euphorbia tirucalli</i>
Anona	<i>Trichilia emetic</i>
Awagino	<i>Flueggea virosa</i> (<i>Securinega virosa</i>)
Baddan	<i>Balanites aegyptiaca</i>
Burguge	<i>Acacia nilotica</i>
Dadach	<i>Acacia tortilis</i>

Ejas	<i>Olea europaea</i> subsp. <i>cuspidata</i> (<i>Olea africana</i>)
Gorgor	<i>Acacia brevispica</i>
Hammaress	<i>Acacia brevispica</i>
Hidesa	<i>Dodonaea viscosa</i>
Kone	<i>Hyphaene thebaica</i>
Kurkurrah	<i>Ziziphus mauritiana</i>
Matabut	<i>Boswellia rivae</i>
Meti	<i>Phoenix reclinata</i>
Moorodah	<i>Grewia villosa</i>
Morudo	<i>Grewia villosa</i>
Oda	<i>Ficus sycomorus</i>
Ogumdi	<i>Grewia villosa</i>
Wacho dima	<i>Acacia seyal</i>
Wocha-adi	<i>Acacia seyal</i>

English (Eng)

Common fig	<i>Ficus carica</i>
Lowland-bamboo	<i>Oxytenanthera abyssinica</i>
Abyssinian rose	<i>Rosa abyssinica</i>
Adriatic fig	<i>Ficus carica</i>
African blackwood	<i>Dalbergia melanoxydon</i>
African ebony	<i>Dalbergia melanoxydon</i>
African ebony	<i>Diospyros mespiliformis</i>
African fan palm	<i>Borassus aethiopum</i>
African holly	<i>Ilex mitis</i>
African pencil cedar	<i>Juniperus procera</i>
African tulip tree	<i>Sesbania sesban</i>
African wild olive	<i>Olea europaea</i> subsp. <i>cuspidata</i> (<i>Olea africana</i>)
Alexandrian senna	<i>Senna alexandrina</i> (<i>Cassia alexandrina</i>)
Algarroba	<i>Prosopis juliflora</i>
Aloe	<i>Aloe vera</i>
Apple of Sodom	<i>Calotropis procera</i>
Apple	<i>Malus domestica</i>
Apple-ring acacia	<i>Acacia albida</i> (<i>Faidherbia albida</i>)
Athel tree	<i>Tamarindus indica</i>

English (Eng) cont.

Australian beefwood	<i>Casuarina cunninghamiana</i>	Crested wattle	<i>Albizia lophantha</i>
Australian blackwood	<i>Acacia melanoxylon</i> (<i>Racosperma melanoxylon</i>)	Date palm	<i>Phoenix dactylifera</i>
Avocado	<i>Persea americana</i>	Dead Sea fruit	<i>Calotropis procera</i>
Baobab	<i>Adansonia digitata</i>	Deleb palm	<i>Borassus aethiopum</i>
Ben-oil tree	<i>Moringa oleifera</i>	Desert date	<i>Balanites aegyptiaca</i>
Bitter frankincense	<i>Boswellia papyrifera</i>	Doum palm	<i>Hyphaene thebaica</i>
Bitter grape	<i>Rhoicissus tridentata</i>	Dragon tree	<i>Dracaena steudneri</i>
Bitter leaf	<i>Vernonia amygdalina</i>	Drumstick tree	<i>Moringa oleifera</i>
Black incense	<i>Boswellia rivae</i>	East African greenheart	<i>Warburgia ugandensis</i>
Black plum	<i>Vitex doniana</i>	East African olive	<i>Olea capensis</i> subsp. <i>macrocarpa</i> (<i>O. hochstetteri</i>)
Black wattle	<i>Acacia mearnsii</i> (<i>Racosperma mearnsii</i>)	East African yellowwood	<i>Podocarpus falcatus</i> (<i>P. gracilior</i>)
Borassus palm	<i>Borassus aethiopum</i>	East-Indian walnut	<i>Albizia lebbeck</i>
Brazilian rosewood	<i>Jacaranda mimosifolia</i>	Egyptian doum palm	<i>Hyphaene thebaica</i>
Broad-leaved croton	<i>Croton macrostachyus</i>	Egyptian rattle pod	<i>Sesbania sesban</i>
Brown olive	<i>Olea europaea</i> subsp. <i>cuspidata</i> (<i>Olea africana</i>)	Egyptian thorn	<i>Acacia nilotica</i>
Brown's myrobalan	<i>Terminalia brownii</i>	Falcon's-claw acacia	<i>Acacia polyacantha</i> subsp. <i>campylacantha</i>
Buffalo-thorn	<i>Ziziphus mucronata</i>	False fig	<i>Trilepisium madagascariense</i> (<i>Bosquiea phoberos</i>)
Cabbage tree	<i>Moringa oleifera</i>	False iroko	<i>Antiaris toxicaria</i>
Camel's foot tree	<i>Piliostigma thonningii</i>	False mvule	<i>Antiaris toxicaria</i>
Candelabra euphorbia	<i>Euphorbia abyssinica</i>	Faroh's tree	<i>Ficus sycomorus</i>
Candle bush	<i>Senna didymobotrya</i> (<i>Cassia didymobotrya</i>)	Finger euphorbia	<i>Euphorbia tirucalli</i>
Cape fig	<i>Ficus sur</i> (<i>F. capensis</i>)	Flamboyant	<i>Delonix regia</i>
Cape mahogany	<i>Trichilia emetica</i>	Flame of the forest	<i>Sesbania sesban</i>
Carrot tree	<i>Steganotaenia araliacea</i>	Flame tree	<i>Erythrina abyssinica</i>
Castor-oil plant	<i>Ricinus communis</i>	Flat-top acacia	<i>Acacia abyssinica</i> subsp. <i>abyssinica</i>
Citron	<i>Citrus medica</i>	Flooded gum	<i>Eucalyptus grandis</i>
Coffee-bean		Giant diospyros	<i>Diospyros abyssinica</i>
strychnos	<i>Strychnos henningsii</i>	Giant heath	<i>Erica arborea</i>
Commiphora	<i>Commiphora africana</i>	Green wattle	<i>Acacia decurrens</i>
Common gardenia	<i>Gardenia volkensii</i>	Grevillea	<i>Grevillea robusta</i>
Confetti tree	<i>Maytenus senegalensis</i>	Guava	<i>Psidium guajava</i>
		Henna	<i>Lawsonia inermis</i>
		Hevea	<i>Hevea brasiliensis</i>

English (Eng) cont.

Hog plum	<i>Ximenia americana</i>	Mexican cypress	<i>Cupressus lusitanica</i>
Hop bush	<i>Dodonaea viscosa</i>	Mexican weeping pine	<i>Pinus patula</i>
Incense tree	<i>Boswellia rivae</i>	Monkey bread	<i>Piliostigma thonningii</i>
Indian plum	<i>Flacourtia indica</i>	Monterey pine	<i>Pinus radiata</i>
Indian rubber tree	<i>Ficus elastica</i>	Mountain bamboo	<i>Arundinaria alpina</i>
Ironwood	<i>Senna siamea (Cassia siamea)</i>	Mulberry	<i>Morus alba</i>
Jacaranda	<i>Jacaranda mimosifolia</i>	Murray red gum	<i>Eucalyptus camaldulensis</i>
Jerusalem thorn	<i>Parkinsonia aculeata</i>	Myrtle bush	<i>Myrtus communis</i>
Jujube	<i>Ziziphus mauritiana</i>	Myrtle bush	<i>Myrtus communis</i>
Kapok tree	<i>Ceiba pentandra</i>	Mysore thorn	<i>Caesalpinia decapetala</i>
Kassod tree	<i>Senna siamea (Cassia siamea)</i>	Nandy flame	<i>Sesbania sesban</i>
King wattle	<i>Acacia decurrens</i>	Natal orange	<i>Strychnos spinosa</i>
Large-leaved albizia	<i>Albizia grandibracteata</i>	Neem	<i>Azadirachta indica</i>
Large-leaved Transvaal gardenia	<i>Gardenia ternifolia</i>	Palmirah palm	<i>Borassus aethiopum</i>
Large-leaved common gardenia	<i>Gardenia ternifolia</i>	Parasol tree	<i>Polyscias fulva (P. ferruginea, Panax ferrugineum)</i>
Large-leaved cordia	<i>Cordia africana</i>	Peach	<i>Prunus persica</i>
Large-leaved St. John's wort	<i>Hypericum roeperianum</i>	Peacock flower	<i>Albizia gummifera</i>
Large-podded albizia	<i>Albizia schimperiana</i>	Pearwood	<i>Apodytes dimidiata</i>
Lead tree	<i>Leucaena leucocephala</i>	Pepper tree	<i>Schinus molle</i>
Leafless tamarisk	<i>Tamarindus indica</i>	Persian lilac	<i>Melia azedarach</i>
Lemon gum	<i>Eucalyptus citriodora</i>	Pigeon pea	<i>Cajanus cajan</i>
Leucaena	<i>Leucaena leucocephala</i>	Pink leucaena	<i>Leucaena leucocephala</i>
Lime	<i>Citrus aurantifolia</i>	Podo	<i>Podocarpus falcatus (P. gracilior)</i>
Loquat	<i>Eriobotrya japonica</i>	Poison-arrow tree	<i>Acokanthera schimperii</i>
Lucky-bean tree	<i>Erythrina abyssinica</i>	Port Jackson willow	<i>Acacia saligna (Racosperma saligna)</i>
Madras thorn	<i>Pithecellobium dulce</i>	Radiata pine	<i>Pinus radiata</i>
Mandarin	<i>Citrus reticulata</i>	Red river gum	<i>Eucalyptus camaldulensis</i>
Mango	<i>Mangifera indica</i>	Red stinkwood	<i>Prunus africana (Pygeum africanum)</i>
Manilla tamarind	<i>Pithecellobium dulce</i>	Red thorn acacia	<i>Acacia lahai</i>
Manna gum	<i>Eucalyptus viminalis</i>	Red-hot poker tree	<i>Erythrina abyssinica</i>
Mauritius thorn	<i>Caesalpinia decapetala</i>	Reed grass	<i>Arundo donax</i>
Mesquite	<i>Prosopis juliflora</i>	Ribbon gum	<i>Eucalyptus viminalis</i>
		River bean	<i>Sesbania sesban</i>
		River oak	<i>Casuarina cunninghamiana</i>
		River she-oak	<i>Casuarina cunninghamiana</i>

English (Eng) cont.

Rose gum	<i>Eucalyptus grandis</i>	Tree euphorbia	<i>Euphorbia abyssinica</i>
Sacking tree	<i>Antiaris toxicaria</i>	Tree lucerne	<i>Chamaecytisus proliferus</i>
Salt cedar	<i>Tamarindus indica</i>	Tree vernonia	<i>Vernonia amygdalina</i>
Sausage tree	<i>Kigelia africana</i> (<i>K. aethiopum</i> , <i>K. pinnata</i>)	Umbrella thorn	<i>Acacia tortilis</i>
Scented pod		Variable	
acacia	<i>Acacia nilotica</i>	combretum	<i>Combretum collinum</i>
Shea-butter tree	<i>Vitellaria paradoxa</i> (<i>Butyrospermum paradoxa</i>)	Velvet-leaved	
Silky oak	<i>Grevillea robusta</i>	combretum	<i>Combretum molle</i>
Siris tree	<i>Albizia lebbeck</i>	Violet tree	<i>Securidaca longipedunculata</i>
Sissoo	<i>Dalbergia Sissoo</i>	Violet tree	<i>Steganotaenia araliacea</i>
Small-fruited		Wait-a-bit thorn	<i>Acacia asak</i>
teclea	<i>Vepris nobilis</i> (<i>Teclea nobilis</i>)	Wait-a-bit thorn	<i>Acacia brevispica</i>
Smyrna fig	<i>Ficus carica</i>	Waterberry	<i>Strychnos spinosa</i>
Snowberry tree	<i>Flueggea virosa</i> (<i>Securinega virosa</i>)	Weeping wattle	<i>Acacia saligna</i> (<i>Racosperma saligna</i>)
Snuff-box tree	<i>Oncoba spinosa</i>	Whistling pine	<i>Casuarina equisetifolia</i>
Soursop	<i>Annona mucarita</i>	White pear	<i>Apodytes dimidiata</i>
Spiked acacia	<i>Albizia lophantha</i>	White sapote	<i>Casimiroa edulis</i>
Spiny monkey		White	
orange	<i>Strychnos spinosa</i>	stinkwood	<i>Celtis africana</i>
Spiny tree fern	<i>Cyathea manniana</i>	White teak	<i>Gmelina arborea</i>
Spotted gum	<i>Eucalyptus citriodora</i>	White whistling	
Steudner's		thorn	<i>Acacia seyal</i>
dracaena	<i>Dracaena steudneri</i>	White-galled	
Sudan Gum	<i>Acacia senegal</i>	acacia	<i>Acacia seyal</i>
Arabic		Wild almond	<i>Berchemia discolor</i>
Sweet orange	<i>Citrus sinensis</i>	Wild banana	<i>Ensete ventricosum</i> (<i>E. edule</i>)
Sycamore fig	<i>Ficus sycomorus</i>	Wild custard	<i>Annona senegalensis</i>
Sydney black		apple	(<i>A. chrysophylla</i>)
wattle	<i>Acacia decurrens</i>	Wild date palm	<i>Phoenix reclinata</i>
Sydney blue gum	<i>Eucalyptus saligna</i>	Wild plum	<i>Ximenia americana</i>
Tagasaste	<i>Chamaecytisus proliferus</i>	Wild rose	<i>Oncoba spinosa</i>
Tamarind	<i>Tamarindus indica</i>	Wild willow	<i>Salix mucronata</i> (<i>S. subserrata</i>)
Tamarisk	<i>Tamarindus indica</i>	Willow wattle	<i>Acacia saligna</i> (<i>Racosperma saligna</i>)
Tangerine	<i>Citrus reticulata</i>	Winged bersama	<i>Bersama abyssinica</i> subsp. <i>abyssinica</i>
Three-thorned		Winter thorn	<i>Acacia albida</i> (<i>Faidherbia albida</i>)
acacia	<i>Acacia senegal</i>	Woman's tongue	<i>Albizia lebbeck</i>
Toothbrush tree	<i>Salvadora persica</i>	Yeheb nut	<i>Cordeauxia edulis</i>
Transvaal			
gardenia	<i>Gardenia volkensii</i>		

Gamogna (Ga)

Akersa	<i>Acacia senegal</i>
Dhaze	<i>Acacia abyssinica</i> subsp. <i>abyssinica</i>
Dogama	<i>Commiphora africana</i>
Domay	<i>Balanites aegyptiaca</i>
Domaye	<i>Balanites aegyptiaca</i>
Duduba	<i>Kigelia africana</i> (<i>K. aethiopum</i> , <i>K. pinnata</i>)
Galaldo	<i>Terminalia brownii</i>
Gingino	<i>Grewia ferruginea</i>
Hazte	<i>Ximenia americana</i>
Kertor	<i>Acacia albida</i> (<i>Faidherbia albida</i>)
Shera	<i>Acacia tortilis</i>
Washo	<i>Arundinaria alpina</i>
Zagie	<i>Bersama abyssinica</i> subsp. <i>abyssinica</i>
Zuntsie	<i>Commiphora africana</i>
Ades	<i>Myrtus communis</i>

Gimirigna (Gm)

Giku	<i>Cordia africana</i>
Bal	<i>Sapium ellipticum</i>
Beru	<i>Prunus africana</i> (<i>Pygeum africanum</i>)
Desh	<i>Trichilia dregeana</i>
Eleselesek	<i>Salix mucronata</i> (<i>S. subserrata</i>)
Kawu	<i>Look up</i>
Kias	<i>Arundinaria alpina</i>
Qeretor	<i>Acacia lahai</i>
Sakeho	<i>Grewia ferruginea</i>
Sat	<i>Albizia grandibracteata</i>
Serri	<i>Albizia grandibracteata</i>
Taitos	<i>Premna schimperi</i>
Wush	<i>Bridelia micrantha</i>
Yoke	<i>Albizia lebeck</i>

Gumuzna (Gmz)

Achir	<i>Justicia schimperiana</i> (<i>Adhatoda schimperiana</i>)
Asisa	<i>Oncoba spinosa</i>

Banja	<i>Cordia africana</i>
Banja	<i>Vernonia amygdalina</i>
Banjaha	<i>Strychnos spinosa</i>
Begoha	<i>Combretum molle</i>
Beroha	<i>Croton macrostachyus</i>
Djaha	<i>Breonadia salicina</i>
Enta	<i>Oxytenanthera abyssinica</i>
Gelia	<i>Erythrina abyssinica</i>
Gugurandija	<i>Mimusops kummel</i>
Jimna	<i>Arundinaria alpina</i>
Kokora	<i>Vitex doniana</i>
Kota	<i>Gardenia ternifolia</i>
Meyo	<i>Ximenia americana</i>
Oola	<i>Strychnos innocua</i>
Sikida	<i>Securidaca longipedunculata</i>
Sikida	<i>Steganotaenia araliacea</i>
Soha	<i>Carissa spinarum</i> (<i>C. edulis</i>)
Tehga	<i>Albizia gummifera</i>
Weysha	<i>Arundo donax</i>

Guragigna (Gr)

Abeyi	<i>Maesa lanceolata</i>
Agergui	<i>Olea capensis</i> subsp. <i>macrocarpa</i> (<i>O. hochstetteri</i>)
Ambarda	<i>Piliostigma thonningii</i>
Ambilbey	<i>Pittosporum viridiflorum</i>
Areg	<i>Dracaena steudneri</i>
Aset	<i>Ensete ventricosum</i> (<i>E. edule</i>)
Atat	<i>Maytenus arbutifolia</i>
Bekenissa	<i>Croton macrostachyus</i>
Birbiraso	<i>Millettia ferruginea</i>
Chat	<i>Catha edulis</i>
Deweni-guna	<i>Acacia sieberiana</i>
Dima	<i>Adansonia digitata</i>
Dokima	<i>Strychnos spinosa</i>
Engocha	<i>Rosa abyssinica</i>
Enqoqo	<i>Embelia schimperi</i>
Gederra	<i>Erica arborea</i>
Gishe	<i>Rhamnus prinoides</i>
Koba	<i>Ensete ventricosum</i> (<i>E. edule</i>)
Kobo	<i>Ricinus communis</i>

Guragigna (Gr) cont.

Kock	<i>Prunus persica</i>
Kuwobo	<i>Ricinus communis</i>
Lilu	<i>Piliostigma thonningii</i>
Mekenissa	<i>Croton macrostachyus</i>
Odesha	<i>Cordia africana</i>
Oira	<i>Olea europaea</i> subsp. <i>cuspidata</i> (<i>Olea africana</i>)
Sabattala	<i>Bersama abyssinica</i> subsp. <i>abyssinica</i>
Sensel	<i>Justicia schimperiana</i> (<i>Adhatoda schimperiana</i>)
Zigba	<i>Podocarpus falcatus</i> (<i>P. gracilior</i>)

Haderigna (Hd)

Arara	<i>Prunus africana</i> (<i>Pygeum africanum</i>)
Enqoto	<i>Rosa abyssinica</i>
Gitea	<i>Cajanus cajan</i>
Gora	<i>Rosa abyssinica</i>
Libanat	<i>Boswellia papyrifera</i>
Odo	<i>Ficus sycomorus</i>
Wesa	<i>Ensete ventricosum</i> (<i>E. edule</i>)

Kefgna (Kf)

Atar	<i>Nuxia congesta</i>
Bero	<i>Erythrina abyssinica</i>
Bibero	<i>Milletia ferruginea</i>
Yago	<i>Milletia ferruginea</i>
Chago	<i>Maesa lanceolata</i>
Colacho	<i>Erythrina brucei</i>
Gayu	<i>Mimusops kummel</i>
Gonji	<i>Milicia excelsa</i> (<i>Chlorophora excelsa</i>)
Kambelo	<i>Schefflera abyssinica</i>
Keto	<i>Ilex mitis</i>
Kocho	<i>Ensete ventricosum</i> (<i>E. edule</i>)
Komy	<i>Blighia unijugata</i>
Luiya	<i>Trichilia dregeana</i>
Majo	<i>Ocotea kenyensis</i>
Megeto	<i>Vepris nobilis</i> (<i>Teclea nobilis</i>)

Mengereto	<i>Vepris nobilis</i> (<i>Teclea nobilis</i>)
Najo	<i>Ocotea kenyensis</i>
Sesno	<i>Cyathea manniana</i>
Shedo	<i>Sapium ellipticum</i>
Sheho	<i>Allophylus abyssinicus</i>
Shineto	<i>Arundinaria alpina</i>
Shishu	<i>Celtis africana</i>
Shonga	<i>Pouteria adolfi-friedericii</i> (<i>Aningeria adolfi-friedericii</i>)
Tumo	<i>Premna schimperii</i>
Wagamo	<i>Ehretia cymosa</i>
Wondefo	<i>Apodytes dimidiata</i>
Yudo	<i>Dracaena steudneri</i>

Kembatgna (Km)

Chata	<i>Catha edulis</i>
Gilbana	<i>Justicia schimperiana</i> (<i>Adhatoda schimperiana</i>)
Lomi	<i>Citrus aurantifolia</i>
Odeko	<i>Ficus carica</i>
Wese	<i>Ensete ventricosum</i> (<i>E. edule</i>)
Oolagecho	<i>Ehretia cymosa</i>

Konsogna (Ks)

Gahadito	<i>Commiphora erythraea</i>
Farengota	<i>Cajanus cajan</i>
Ohota	<i>Cajanus cajan</i>

Mejengrgna (Mjr)

Boli	<i>Olyra latifolia</i>
Cholmi	<i>Lannea welwitschii</i>
Dampaeu	<i>Cordia africana</i>
Dampe	<i>Cordia africana</i>
Dimmin	<i>Diospyros mespiliformis</i>
Duwe	<i>Baphia abyssinica</i>
Gedem	<i>Sterculia africana</i>
Geshi	<i>Vernonia amygdalina</i>
Jukul	<i>Terminalia laxiflora</i>
Kogoden	<i>Anogeissus leiocarpus</i>
Kow	<i>Sarcocephalus latifolius</i>
Oleme	<i>Celtis toka</i>

Mejengrgna (Mjr) cont.

Oleme	<i>Lonchocarpus laxiflorus</i>
Oleme	<i>Ziziphus pubescens</i>
Tangnang	<i>Gardenia ternifolia</i>
Tengi	<i>Antiaris toxicaria</i>
Toyun	<i>Balanites aegyptiaca</i>
Gegem	<i>Erythroxylum fischeri</i>
Manga	<i>Mangifera indica</i>

Nuyergna (Nur)

Gegi	<i>Salvadora persica</i>
Ades	<i>Cajanus cajan</i>
Bow	<i>Ziziphus spina-christi</i>
Bukwe	<i>Terminalia brownii</i>
Chobwe	<i>Sclerocarya birrea</i>
Duper	<i>Olyra latifolia</i>
Gabi	<i>Ziziphus mauritiana</i>
Gaba	<i>Ziziphus mauritiana</i>
Leele	<i>Securidaca longipedunculata</i>
Leele	<i>Steganotaenia araliacea</i>
Lemun	<i>Citrus aurantifolia</i>
Lemun	<i>Citrus sinensis</i>
Lor	<i>Acacia nilotica</i>
Mop	<i>Ficus sur (F. capensis)</i>
Nibe	<i>Azadirachta indica</i>
Niff	<i>Azadirachta indica</i>
Niph	<i>Azadirachta indica</i>
Riak	<i>Celtis toka</i>
Riak	<i>Lonchocarpus laxiflorus</i>
Riak	<i>Ziziphus pubescens</i>
Tor	<i>Balanites aegyptiaca</i>
Urogu	<i>Cordia africana</i>

Oromugna (Or)

Akuku	<i>Oncoba spinosa</i>
Aleltu	<i>Salix mucronata</i>
Ambelta	<i>Entada abyssinica</i>
Baha	<i>Olea welwitschii</i>
Bulchano	<i>Buddleia polystachya</i>
Daga	<i>Olea welwitschii</i>

Damedugo	<i>Dovyalis abyssinica</i>
Gagama	<i>Olea welwitschii</i>
Gaja	<i>Olea welwitschii</i>
Gaja	<i>Olea capensis</i> subsp. <i>macrocarpa (O. hochstetteri)</i>
Shimoro	<i>Albizia schimperiana</i>
Dokenu	<i>Grewia ferruginea</i>
Galo	<i>Psydrax schimperiana</i> subsp. <i>schimperiana (Cantium schimperianum)</i>
Kocki	<i>Prunus persica</i>
Abar	<i>Allophylus abyssinicus</i>
Abayi	<i>Maesa lanceolata</i>
Adado	<i>Buddleia polystachya</i>
Adakebo	<i>Blighia unijugata</i>
Adam	<i>Euphorbia abyssinica</i>
Adami	<i>Euphorbia abyssinica</i>
Adamo	<i>Galiniera saxifraga (G. coffeoides)</i>
Addressa	<i>Vepris dainellii</i>
Addisa	<i>Myrtus communis</i>
Adesa	<i>Dichrostachys cinerea</i>
Adessa	<i>Vepris nobilis (Teclea nobilis)</i>
Ado-qurqura	<i>Ziziphus mucronata</i>
Aebicha	<i>Vernonia amygdalina</i>
Agamsa	<i>Carissa spinarum (C. edulis)</i>
Ahoha	<i>Oncoba spinosa</i>
Aja'a	<i>Discopodium penninervum</i>
Mararo	<i>Discopodium penninervum</i>
Ajo	<i>Acacia oerfota (A. nubica)</i>
Akacha saligna	<i>Acacia saligna (Racosperma saligna)</i>
Akessa	<i>Rhus glutinosa</i>
Akukku	<i>Oncoba spinosa</i>
Akuku	<i>Ficus sycomorus</i>
Alahingale	<i>Combretum collinum</i>
Alaltu	<i>Salix mucronata (S. subserrata)</i>
Alatu	<i>Salix mucronata (S. subserrata)</i>
Alele	<i>Albizia grandibracteata</i>
Alulo	<i>Terminalia brownii</i>

Oromugna (Or) cont.

Amalaqqa	<i>Celtis africana</i>	Boqo	<i>Bersama abyssinica</i> subsp. <i>abyssinica</i>
Amazaze	<i>Entada abyssinica</i>	Bosoka	<i>Sapium ellipticum</i>
Ambabessa	<i>Albizia gummifera</i>	Botoro	<i>Stereospermum kunthianum</i>
Ambabessa	<i>Albizia schimperiana</i>	Botoro	<i>Stereospermum kunthianum</i>
Ambalta	<i>Entada abyssinica</i>	Bourairo	<i>Prunus africana</i> (<i>Pygeum africanum</i>)
Amera	<i>Lonchocarpus laxiflorus</i>	Buchema	<i>Buddleia polystachya</i>
Amezaze	<i>Acacia brevispica</i>	Buraya	<i>Prunus africana</i> (<i>Pygeum africanum</i>)
Amshika	<i>Pittosporum viridiflorum</i>	Burquqe	<i>Acacia nilotica</i>
Anfare	<i>Nuxia congesta</i>	Burquqe	<i>Acacia sieberiana</i>
Anfari	<i>Buddleia polystachya</i>	Burquqqe	<i>Acacia labai</i>
Angqgo	<i>Dovyalis abyssinica</i>	Bururi	<i>Grewia ferruginea</i>
Anka	<i>Erythrina abyssinica</i>	Bururi	<i>Mimusops kummel</i>
Ankakute	<i>Dovyalis abyssinica</i>	Butugi	<i>Manilkara butugi</i>
Ankowa	<i>Croton macrostachyus</i>	Buturu	<i>Markhamia lutea</i>
Anno	<i>Euphorbia tirucalli</i>	Buturu	<i>Stereospermum kunthianum</i>
Areje	<i>Allophylus abyssinicus</i>	Chae	<i>Vepris nobilis</i> (<i>Teclea nobilis</i>)
Asene meka	<i>Senna didymobotrya</i> (<i>Cassia didymobotrya</i>)	Chalalaqa	<i>Apodytes dimidiata</i>
Asra	<i>Millettia ferruginea</i>	Chalanga	<i>Commiphora habessinica</i>
Awre-mudube	<i>Ximenia americana</i>	Chat	<i>Catha edulis</i>
Baddano	<i>Balanites aegyptiaca</i>	Chatto	<i>Albizia gummifera</i>
Badessa	<i>Strychnos spinosa</i>	Cheke	<i>Celtis africana</i>
Bakanissa	<i>Croton macrostachyus</i>	Chucho	<i>Maytenus undata</i>
Bakano	<i>Croton macrostachyus</i>	Dabacha	<i>Combretum collinum</i>
Ba'obaab	<i>Adansonia digitata</i>	Dabobessa	<i>Rhus vulgaris</i>
Baresa	<i>Terminalia brownii</i>	Dadatu	<i>Buddleia polystachya</i>
Barodo	<i>Salix mucronata</i> (<i>S. subserrata</i>)	Daga chebsa	<i>Rhoicissus revouilii</i>
Bedena	<i>Balanites aegyptiaca</i>	Daggooo	<i>Oncoba spinosa</i>
Befiti	<i>Warburgia ugandensis</i>	Dandale	<i>Combretum collinum</i>
Begama	<i>Vepris nobilis</i> (<i>Teclea nobilis</i>)	Dandamsa	<i>Combretum molle</i>
Berensa	<i>Terminalia brownii</i>	Dangogo siyaka	<i>Rhoicissus tridentata</i>
Bika	<i>Combretum molle</i>	Danissa	<i>Dombeya torrida</i> subsp. <i>torrida</i> (<i>D. goetzenii</i>)
Birbirsa	<i>Podocarpus falcatus</i> (<i>P. gracilior</i>)	Debeka	<i>Terminalia laxiflora</i>
Birecha	<i>Terminalia brownii</i>	Debobosha	<i>Rhus natalensis</i>
Birtukana	<i>Citrus sinensis</i>	Debobosso	<i>Rhus natalensis</i>
Birtukwani	<i>Citrus sinensis</i>	Dedatu	<i>Millettia ferruginea</i>
Bitana	<i>Nuxia congesta</i>	Deemo	<i>Bridelia micrantha</i>
Bocho	<i>Pittosporum viridiflorum</i>	Delacho	<i>Olinia rochetiana</i>
		Demiye	<i>Nuxia congesta</i>

Oromugna (Or) cont.

Derersa	<i>Ocotea kenyensis</i>	Gessa	<i>Bersama abyssinica</i> subsp. <i>abyssinica</i>
Dergi	<i>Fagaropsis angolensis</i>	Ghino	<i>Euclea racemosa</i> subsp. <i>schimperii</i>
Dero	<i>Fagaropsis angolensis</i>	Gigicha	<i>Ocotea kenyensis</i>
Derot	<i>Acacia albida</i> (<i>Faidherbia albida</i>)	Gomori	<i>Combretum collinum</i>
Derot	<i>Acacia lahai</i>	Gorbe	<i>Albizia gummifera</i>
Didegsa	<i>Combretum molle</i>	Gorbe	<i>Albizia schimperiana</i>
Didigssa	<i>Sclerocarya birrea</i>	Goro	<i>Rosa abyssinica</i>
Didissa	<i>Sclerocarya birrea</i>	Gosu	<i>Strychnos spinosa</i>
Didu	<i>Galiniera saxifraga</i> (<i>G. coffeoides</i>)	Guduba	<i>Pouteria adolfi-friedericii</i> (<i>Aningeria adolfi-friedericii</i>)
Diho	<i>Cordia africana</i>	Gumero	<i>Caparis tomentosa</i>
Dogoma	<i>Croton macrostachyus</i>	Guna	<i>Olinia rochetiana</i>
Dolkiss	<i>Bersama abyssinica</i> subsp. <i>abyssinica</i>	Gambella	<i>Gardenia ternifolia</i>
Druba	<i>Allophylus abyssinicus</i>	Garamba	<i>Hypericum revolutum</i>
Duduna	<i>Ekebergia capensis</i> (<i>E. rueppeliana</i>)	Gurha	<i>Acacia sieberiana</i>
Dugo	<i>Dovyalis abyssinica</i>	Hatawi	<i>Pavetta oliveriana</i>
Dumuga	<i>Justicia schimperiana</i> (<i>Adhatoda schimperiana</i>)	Hobimada	<i>Berberis holstii</i>
Ejerssa	<i>Olea europaea</i> subsp. <i>cuspidata</i> (<i>Olea africana</i>)	Habru	<i>Ficus sur</i> (<i>F. capensis</i>)
Emela,	<i>Albizia grandibracteata</i>	Hachacha	<i>Maytenus arbutifolia</i>
Enchini	<i>Sesbania sesban</i>	Hadad	<i>Premna schimperii</i>
Enqoto	<i>Rosa abyssinica</i>	Hagamsa	<i>Carissa spinarum</i> (<i>C. edulis</i>)
Etacha	<i>Dodonaea viscosa</i>	Hagar	<i>Commiphora erythraea</i>
Etse Menabele	<i>Steganotaenia analiacea</i>	Hagar-ad	<i>Commiphora erythraea</i>
Falfala adal	<i>Calotropis procera</i>	Hagar-medow	<i>Commiphora erythraea</i>
Gagama	<i>Olea capensis</i> subsp. <i>macrocarpa</i> (<i>O. hochstetteri</i>)	Hagarso	<i>Commiphora erythraea</i>
Gajo	<i>Manilkara butugi</i>	Hagarsu	<i>Commiphora erythraea</i>
Galalo	<i>Azadirachta indica</i>	Hagile	<i>Ficus sycomorus</i>
Gale lala	<i>Rhoicissus tridentata</i>	Halele	<i>Albizia grandibracteata</i>
Galgalem	<i>Boswellia papyrifera</i>	Hallo	<i>Acacia bussei</i>
Garbi	<i>Acacia lahai</i>	Hamarecha	<i>Acacia brevispica</i>
Garmi	<i>Ehretia cymosa</i>	Hambalta	<i>Entada abyssinica</i>
Gatira	<i>Juniperus procera</i>	Hamessa	<i>Commiphora africana</i>
Gerbi	<i>Acacia albida</i> (<i>Faidherbia albida</i>)	Hamsika	<i>Ilex mitis</i>
Gesho	<i>Rhamnus prinoides</i>	Hanfare	<i>Nuxia congesta</i>
		Hanku	<i>Embelia schimperii</i>
		Harangama	<i>Caparis tomentosa</i>
		Harbu	<i>Ficus sur</i> (<i>F. capensis</i>)
		Harbu	<i>Ficus sycomorus</i>
		Harcha	<i>Sesbania sesban</i>
		Harfatu	<i>Schefflera abyssinica</i>

Oromugna (Or) cont.

Haroresa	<i>Grewia bicolor</i>	Kombolcha	<i>Maytenus arbutifolia</i>
Hatte	<i>Dichrostachys cinerea</i>	Kombolcha	<i>Maytenus senegalensis</i>
Heto	<i>Hagenia abyssinica</i>	Kombolcha	<i>Maytenus undata</i>
Hida refe	<i>Rhoicissus tridentata</i>	Konu	<i>Trichilia dregeana</i>
Hindessa	<i>Juniperus procera</i>	Kora	<i>Piliostigma thonningii</i>
Hirkamo	<i>Allophylus abyssinicus</i>	Koriba	<i>Polyscias fulva</i>
Homi	<i>Prunus africana</i> (<i>Pygeum africanum</i>)	Koriba	<i>Polyscias fulva</i>
Hucha	<i>Hagenia abyssinica</i>	Kumbala	<i>Apodytes dimidiata</i>
Huda	<i>Ficus sycomorus</i>	Korkoro	<i>Oncoba spinosa</i>
Hudi	<i>Ximenia americana</i>	Kuda	<i>Polyscias fulva</i> (<i>P. ferruginea</i>), <i>Panax ferrugineum</i>)
Hulaga	<i>Ehretia cymosa</i>	Kulasa	<i>Vepris dainellii</i>
Humaar	<i>Adansonia digitata</i>	Kuraro	<i>Pouteria altissima</i> (<i>Aningeria altissima</i>)
Hurgessa	<i>Premna schimperi</i>	Kurawa	<i>Dovyalis abyssinica</i>
Itacha	<i>Dodonaea viscosa</i> (<i>D. angustifolia</i>)	Kuro	<i>Pouteria altissima</i> (<i>Aningeria altissima</i>)
Idado	<i>Acacia senegal</i>	Labasse	<i>Erica arborea</i>
Ilka	<i>Maytenus undata</i>	Lafto	<i>Acacia lahai</i>
Indodi	<i>Phytolacca dodecandra</i>	Lafto	<i>Acacia sieberiana</i>
Indodi	<i>Phytolacca dodecandra</i>	Lafto-adi	<i>Acacia sieberiana</i>
Ingidicho	<i>Millettia ferruginea</i>	Lankuso	<i>Dracaena steudneri</i>
Jejeba	<i>Berchemia discolor</i>	Lanqisa	<i>Grewia ferruginea</i>
Jima hare	<i>Maytenus senegalensis</i>	Lemana	<i>Arundinaria alpina</i>
Jima	<i>Catha edulis</i>	Lensa	<i>Grewia ferruginea</i>
Jirma-jales	<i>Steganotaenia araliacea</i>	Lokko	<i>Diospyros abyssinica</i>
Jirme	<i>Dichrostachys cinerea</i>	Lolchissa	<i>Bersama abyssinica</i> subsp. <i>abyssinica</i>
Kafal	<i>Boswellia papyrifera</i>	Loko	<i>Diospyros abyssinica</i>
Kalade	<i>Combretum aculeatum</i>	Lomi	<i>Citrus aurantifolia</i>
Karasho	<i>Polyscias fulva</i> (<i>P. ferruginea</i>), <i>Panax ferrugineum</i>)	Lotoba	<i>Acacia tortilis</i>
Karchafe	<i>Albizia schimperiana</i>	Lugo	<i>Ficus sycomorus</i>
Karchofe	<i>Albizia gummifera</i>	Lukina	<i>Leucaena leucocephala</i>
Kasale	<i>Acacia nilotica</i>	Luya	<i>Trichilia dregeana</i>
Kekayi	<i>Allophylus abyssinicus</i>	Lukai	<i>Schefflera abyssinica</i>
Kewo	<i>Anogeissus leiocarpus</i>	Luya	<i>Trichilia dregeana</i>
Koba	<i>Ensete ventricosum</i> (<i>E. edule</i>)	Mangeh	<i>Blighia unijugata</i>
Kofale	<i>Albizia grandibracteata</i>	Makanissa	<i>Croton macrostachyus</i>
Kokolfe	<i>Oncoba spinosa</i>	Mango	<i>Mangifera indica</i>
Komate	<i>Annona senegalensis</i> (<i>A. chrysophylla</i>)	Marchessa	<i>Lonchocarpus laxiflorus</i>
Konu	<i>Trichilia dregeana</i>	Marfatu	<i>Schefflera abyssinica</i>
		Marmarte	<i>Woodfordia uniflora</i>
		Meddesa	<i>Vepris dainellii</i>

Oromugna (Or) cont.

Meteqamma	<i>Celtis africana</i>	Quduba	<i>Pouteria altissima</i> (<i>Aningeria altissima</i>)
Meti	<i>Hyphaene thebaica</i>	Qumbala	<i>Apodytes dimidiata</i>
Miesa	<i>Ilex mitis</i>	Qura	<i>Boswellia rivae</i>
Miessa	<i>Euclea racemosa</i> subsp. <i>schimperii</i>	Qurqura	<i>Ziziphus mauritiana</i>
Mito	<i>Galiniera saxifraga</i> (<i>G. coffeoides</i>)	Qurqura	<i>Ziziphus spina-christi</i>
Mito	<i>Mimusops kummel</i>	Qwentr	<i>Acacia brevispica</i>
Moghano	<i>Dalbergia melanoxylon</i>	Riga ganzi	<i>Hypericum quartinianum</i>
Muka arta	<i>Albizia schimperiana</i>	Riga-arba	<i>Bridelia micrantha</i>
Muka late	<i>Antiaris toxicaria</i>	Roka	<i>Tamarindus indica</i>
Muka-arba	<i>Albizia gummifera</i>	Sabansa dima	<i>Acacia senegal</i>
Muka-arba	<i>Senna alexandrina</i> (<i>Cassia alexandrina</i>)	Sagada	<i>Olea capensis</i> subsp. <i>macrocarpa</i> (<i>O. hochstetteri</i>)
Mukarba	<i>Albizia schimperiana</i>	Sankile	<i>Albizia gummifera</i>
Muke	<i>Fagaropsis angolensis</i>	Sapessa	<i>Acacia senegal</i>
Mukoraja	<i>Prunus africana</i> (<i>Pygeum africanum</i>)	Sarara	<i>Allophylus abyssinicus</i>
Nolle	<i>Olinia rochetiana</i>	Sarbandai	<i>Galiniera saxifraga</i> (<i>G. coffeoides</i>)
Obo	<i>Ricinus communis</i>	Sasa	<i>Albizia gummifera</i>
Oda	<i>Ficus sycomorus</i>	Sasa	<i>Albizia schimperiana</i>
Oda-bada	<i>Apodytes dimidiata</i>	Sato	<i>Erica arborea</i>
Oda-kiyet	<i>Apodytes dimidiata</i>	Sawa	<i>Olea welwitschii</i>
Oda-seda	<i>Apodytes dimidiata</i>	Sisaraba	<i>Bridelia micrantha</i>
Ogomdi	<i>Grewia ferruginea</i>	Seho	<i>Allophylus abyssinicus</i>
Ogomdi	<i>Grewia villosa</i>	Shambako	<i>Arundo donax</i>
Onoma	<i>Olea capensis</i> subsp. <i>macrocarpa</i> (<i>O. hochstetteri</i>)	Shapindi	<i>Fagaropsis angolensis</i>
Orora	<i>Lonchocarpus laxiflorus</i>	Shawo	<i>Albizia grandibracteata</i>
Qadida	<i>Rhamnus staddo</i>	Shawshawe	<i>Casuarina cunninghamiana</i>
Qadis	<i>Olinia rochetiana</i>	Shego	<i>Trichilia dregeana</i>
Qanter	<i>Acacia brevispica</i>	Shenkore	<i>Steganotaenia araliacea</i>
Qaracha	<i>Bersama abyssinica</i> subsp. <i>abyssinica</i>	Shero	<i>Trilepisium madagascariense</i> (<i>Bosquiea phoberos</i>)
Qarachu	<i>Acokanthera schimperii</i>	Shimala	<i>Oxytenanthera abyssinica</i>
Qararo	<i>Acokanthera schimperii</i>	Showiye	<i>Dracaena steudneri</i>
Qararu	<i>Acokanthera schimperii</i>	Sokeusa	<i>Acacia brevispica</i>
Qawissa	<i>Buddleia polystachya</i>	Sole adi	<i>Olinia rochetiana</i>
Qobo	<i>Ricinus communis</i>	Sombo	<i>Ekebergia capensis</i> (<i>E. rueppeliana</i>)
Qodo	<i>Myrtus communis</i>	Sondi	<i>Acacia labai</i>
Qoladi	<i>Mimusops kummel</i>	Sotellu	<i>Millettia ferruginea</i>
		Suduba	<i>Pouteria adolfi-friedericii</i> (<i>Aningeria adolfi-friedericii</i>)
		Tadessa	<i>Rhus retinorrhoea</i>

Oromugna (Or) cont.

Tala	<i>Polyscias fulva</i> (<i>P. ferruginea</i> , <i>Panax ferrugineum</i>)
Talao	<i>Pittosporum viridiflorum</i>
Tatesa	<i>Rhus vulgaris</i>
Tatessa	<i>Rhus glutinosa</i>
Tatessa	<i>Rhus natalensis</i>
Tedecha	<i>Acacia tortilis</i>
Tedecha	<i>Dodonaea viscosa</i>
Tenji	<i>Antiaris toxicaria</i>
Tilto	<i>Ilex mitis</i>
Tingiti	<i>Otostegia integrifolia</i>
Tona	<i>Myrica salicifolia</i>
Totofe	<i>Combretum aculeatum</i>
Tucho	<i>Blighia unijugata</i>
Tumuga	<i>Justicia schimperiana</i> (<i>Adhatoda schimperiana</i>)
Turungo	<i>Citrus medica</i>
Tuto	<i>Citrus aurantifolia</i>
Ulaga	<i>Ehretia cymosa</i>
Ungadei	<i>Ilex mitis</i>
Urgessa	<i>Premna schimperii</i>
Utro	<i>Stereospermum kunthianum</i>
Vungo	<i>Albizia gummifera</i>
Vungo	<i>Albizia schimperiana</i>
Wachu	<i>Acacia seyal</i>
Wadadi	<i>Erica arborea</i>
Wagisa	<i>Sapium ellipticum</i>
Wajji	<i>Acacia seyal</i>
Wajjo	<i>Acacia seyal</i>
Wangay	<i>Acacia oerfota</i> (<i>A. nubica</i>)
Wakko-dimo	<i>Acacia seyal</i>
Wanga	<i>Acacia oerfota</i> (<i>A. nubica</i>)
Weke	<i>Ensete ventricosum</i> (<i>E. edule</i>)
Wendebiyu	<i>Apodytes dimidiata</i>
Wese	<i>Ensete ventricosum</i> (<i>E. edule</i>)
Wodesa	<i>Cordia africana</i>
Wolensu	<i>Erythrina abyssinica</i>
Wolensu	<i>Erythrina brucei</i>
Wolkite	<i>Ilex mitis</i>
Wondabiyo	<i>Apodytes dimidiata</i>
Worke	<i>Ensete ventricosum</i> (<i>E. edule</i>)

Worsamesa	<i>Dichrostachys cinerea</i>
Wosiya wajo	<i>Acacia seyal</i>
Yuga	<i>Trilepisium madagascariense</i> (<i>Bosquiea phoberos</i>)

Sahogna (Sh)

Aflo	<i>Acacia nilotica</i>
Aflo	<i>Acacia seyal</i>
Awawa	<i>Carissa spinarum</i> (<i>C. edulis</i>)
Baguwa	<i>Terminalia laxiflora</i>
Banja	<i>Vernonia amygdalina</i>
Begoha	<i>Combretum molle</i>
Beroha	<i>Croton macrostachyus</i>
Dequa	<i>Strychnos spinosa</i>
Elta	<i>Oxytenanthera abyssinica</i>
Gelia	<i>Erythrina abyssinica</i>
Gorke	<i>Vitex doniana</i>
Kistani-schahala	<i>Rhamnus staddo</i>
Kula	<i>Ximenia americana</i>
Momona	<i>Acacia albida</i> (<i>Faidherbia albida</i>)
Nim	<i>Azadirachta indica</i>
Oola	<i>Strychnos innocua</i>
Quloum	<i>Rhamnus staddo</i>
Siba	<i>Acacia abyssinica</i> subsp. <i>abyssinica</i>
Siga	<i>Erythroxylum fischeri</i>
Simiza	<i>Justicia schimperiana</i> (<i>Adhatoda schimperiana</i>)
Taga	<i>Albizia gummifera</i>
Tsi	<i>Acacia tortilis</i>

Shinashgna (Shn)

Gjaha	<i>Breonadia salicina</i>
Sigida	<i>Securidaca longipedunculata</i>
Sigida	<i>Steganotaenia araliacea</i>

Sidamigna (Sd)

Auera	<i>Pouteria altissima</i> (<i>Aningeria altissima</i>)
Aununa	<i>Mimusops kummel</i>
Avocato	<i>Persea americana</i>

Sidamigna (Sd) cont.

Bulchano	<i>Buddleia polystachya</i>
Choke	<i>Justicia schimperiana</i> (<i>Adhatoda schimperiana</i>)
Daujicho	<i>Galiniera saxifraga</i> (<i>G. coffeoides</i>)
Donkiko	<i>Apodytes dimidiata</i>
Duwancho	<i>Strychnos spinosa</i>
Engidicho	
Enghe diksho	<i>Millettia ferruginea</i>
Gancho	<i>Sapium ellipticum</i>
Get beyo	<i>Sesbania sesban</i>
Getem	<i>Schefflera abyssinica</i>
Guduba	<i>Pouteria adolfi-friedericii</i> (<i>Aningeria adolfi-friedericii</i>)
Gudubo	<i>Pouteria altissima</i> (<i>Aningeria altissima</i>)
Itancha	<i>Dodonaea viscosa</i>
Kanko	<i>Embelia schimperi</i>
Kervoni	<i>Polyscias fulva</i> (<i>P. ferruginea</i>), <i>Panax ferrugineum</i>)
Kocki	<i>Prunus persica</i>
Mikichio	<i>Ilex mitis</i>
Mrchiko	<i>Prunus africana</i> (<i>Pygeum africanum</i>)
Oroni	<i>Schefflera abyssinica</i>
Rakile lo'od	<i>Sesbania sesban</i>
Seghede	<i>Galiniera saxifraga</i> (<i>G. coffeoides</i>)
Setemo	<i>Olea capensis</i> subsp. <i>macrocarpa</i> (<i>O. hochstetteri</i>)
Shishu	<i>Celtis africana</i>
Sigeshote	<i>Olea capensis</i> subsp. <i>macrocarpa</i> (<i>O. hochstetteri</i>)
Sighilu	<i>Fagaropsis angolensis</i>
Soecho	<i>Ocotea kenyensis</i>
Tallaha	<i>Polyscias fulva</i> (<i>P. ferruginea</i>), <i>Panax ferrugineum</i>)
Teberako	<i>Bersama abyssinica</i> subsp. <i>abyssinica</i>
Tulanji	<i>Premna schimperi</i>
Uraga	<i>Ehretia cymosa</i>

Walensu	<i>Erythrina abyssinica</i>
Welako	<i>Erythrina abyssinica</i>
Welesku	<i>Erythrina abyssinica</i>

Somaligna (Sm)

Abak	<i>Acacia tortilis</i>
Akab	<i>Acacia tortilis</i>
Abak	<i>Acacia tortilis</i>
Adad	<i>Acacia senegal</i>
Adad-medu	<i>Acacia asak</i>
Aday	<i>Salvadora persica</i>
Aladu	<i>Millettia ferruginea</i>
Alulo	<i>Terminalia brownii</i>
Amor	<i>Berchemia discolor</i>
Anjel	<i>Mimusops kummel</i>
Aras	<i>Salvadora persica</i>
Armo saged	<i>Rhoicissus revoilii</i>
Bar	<i>Hyphaene thebaica</i>
Baye-medow	<i>Boswellia rivae</i>
Bobuluhu	<i>Schefflera abyssinica</i>
Bodar	<i>Celtis africana</i>
Boha	<i>Calotropis procera</i>
Bulisanza	<i>Oncoba spinosa</i>
Buro	<i>Salix mucronata</i> (<i>S. subserrata</i>)
Cherin	<i>Acacia sieberiana</i>
Dare	<i>Ficus sycomorus</i>
Dayero	<i>Rosa abyssinica</i>
Degemut	<i>Maytenus undata</i>
Delebdoi	<i>Strychnos spinosa</i>
Deleddor	<i>Strychnos spinosa</i>
Den	<i>Dodonaea viscosa</i>
Dhigdar	<i>Dichrostachys cinerea</i>
Dobobos	<i>Euclea racemosa</i> subsp. <i>schimperi</i>
Dokon	<i>Tamarindus indica</i>
Dum-dum	<i>Ceiba pentandra</i>
Dur	<i>Tamarindus indica</i>
Dure	<i>Ficus sycomorus</i>
Eddi-shebel	<i>Ziziphus mucronata</i>
Ehb	<i>Cordeauxia edulis</i>

Somaligna (Sm) Cont.

Fulay	<i>Acacia seyal</i>	Korguba	<i>Berchemia discolor</i>
Furgori	<i>Acacia brevispica</i>	Kura	<i>Acacia tortilis</i>
Gala	<i>Calotropis procera</i>	Lato	<i>Grewia ferruginea</i>
Galo	<i>Acacia bussei</i>	Mandarut	<i>Ximenia americana</i>
Galol	<i>Acacia nilotica</i>	Marah	<i>Acacia nilotica</i>
Galol	<i>Acacia senegal</i>	Marah	<i>Acacia senegal</i>
Galol	<i>Acacia senegal</i>	Marah	<i>Acacia senegal</i>
Galool	<i>Acacia bussei</i>	Masincho	<i>Croton macrostachyus</i>
Galool-sur	<i>Dichrostachys cinerea</i>	Wush	<i>Croton macrostachyus</i>
Garas	<i>Dobera glabra</i>	Mayer	<i>Euclea racemosa</i> subsp. <i>schimperi</i>
Ghed-bidanie	<i>Steganotaenia araliacea</i>	Mohor-medu	<i>Boswellia rivae</i>
Gob	<i>Ziziphus mauritiana</i>	Mokko	<i>Ficus sycomorus</i>
Gomur	<i>Acacia oerfota (A. nubica)</i>	Morhod	<i>Ximenia americana</i>
Got	<i>Balanites aegyptiaca</i>	Mukoy	<i>Ficus sycomorus</i>
Gueza	<i>Balanites aegyptiaca</i>	Mungule	<i>Strychnos innocua</i>
Gumara	<i>Acacia oerfota (A. nubica)</i>	Murfur-ad	<i>Boswellia rivae</i>
Gumero	<i>Acacia oerfota (A. nubica)</i>	Murken	<i>Boswellia rivae</i>
Gummr	<i>Acacia oerfota (A. nubica)</i>	Ongolatz	<i>Dovyalis abyssinica</i>
Gut	<i>Balanites aegyptiaca</i>	Ora	<i>Acacia tortilis</i>
Gwider	<i>Acacia asak</i>	Orgabat	<i>Carissa spinarum (C. edulis)</i>
Hadesa	<i>Strychnos henningsii</i>	Qorqor	<i>Acacia brevispica</i>
Hagar	<i>Commiphora erythraea</i>	Qud	<i>Cordeauxia edulis</i>
Hagar-ad	<i>Commiphora erythraea</i>	Quda	<i>Cordeauxia edulis</i>
Hagar-meadow	<i>Commiphora erythraea</i>	Rede	<i>Acacia asak</i>
Hamor	<i>Berchemia discolor</i>	Roqa	<i>Tamarindus indica</i>
Haras	<i>Dobera glabra</i>	Rumei	<i>Salvadora persica</i>
Harkey	<i>Ziziphus mucronata</i>	Salboko-ghed	<i>Cajanus cajan</i>
Hayab	<i>Rhoicissus tridentata</i>	Sarad	<i>Maytenus undata</i>
Hayramat	<i>Dodonaea viscosa</i>	Shuna-shuna	<i>Combretum aculeatum</i>
Hudaye	<i>Ximenia americana</i>	Sisai	<i>Rhus retinorrhoea</i>
Humer	<i>Tamarindus indica</i>	Timad	<i>Acacia tortilis</i>
Hyab	<i>Rhoicissus revoilii</i>	Tonkich	<i>Dracaena steudneri</i>
Jajale	<i>Rhamnus staddo</i>	Tseligniya	<i>Maytenus undata</i>
Jelalo-jel	<i>Senna alexandrina</i> (<i>Cassia alexandrina</i>)	Tuwer	<i>Acacia nilotica</i>
Jerin	<i>Acacia sieberiana</i>	Wadicho	<i>Cordia africana</i>
Kidi	<i>Celtis africana</i>	Wagireadad	<i>Acokanthera schimperi</i>
Kobbok	<i>Commiphora africana</i>	Wighira	<i>Olea europaea</i> subsp. <i>cuspidata (Olea africana)</i>
Kobesh	<i>Grewia bicolor</i>	Woube	<i>Terminalia brownii</i>
Komesh	<i>Grewia bicolor</i>	Yag	<i>Adansonia digitata</i>
		Yeeb	<i>Cordeauxia edulis</i>

Tigrigna (Tg)

Kwaa	<i>Salix mucronata</i> (<i>S. subserrata</i>)	Bersma	<i>Bersama abyssinica</i> subsp. <i>abyssinica</i>
Lokua	<i>Strychnos spinosa</i>	Birbira	<i>Milletia ferruginea</i>
Aba	<i>Grewia bicolor</i>	Chat	<i>Catha edulis</i>
Dawa	<i>Grewia bicolor</i>	Chea	<i>Acacia nilotica</i>
Aba	<i>Berchemia discolor</i>	Cheha	<i>Acacia abyssinica</i> subsp. <i>abyssinica</i>
Leshem	<i>Grewia bicolor</i>	Chequente	<i>Pittosporum viridiflorum</i>
ADinda	<i>Calotropis procera</i>	Dankwa	<i>Boswellia papyrifera</i>
Adi-zana	<i>Stereospermum kunthianum</i>	Darle	<i>Sterculia africana</i>
Gunki	<i>Stereospermum kunthianum</i>	Ekhi	<i>Cordia africana</i>
Aflot	<i>Combretum aculeatum</i>	Endur	<i>Steganotaenia araliacea</i>
Mellu	<i>Combretum aculeatum</i>	Enqoqo	<i>Embelia schimperi</i> <i>Myrsinaceae</i>
Kato	<i>Combretum aculeatum</i>	Eqot	<i>Oncoba spinosa</i>
Afsholer	<i>Olea capensis</i> subsp. <i>macrocarpa</i> (<i>O. hochstetteri</i>)	Gaba-harmaz	<i>Ziziphus mucronata</i>
Aihada	<i>Dovyalis abyssinica</i>	Gamorot	<i>Acacia oerfota</i> (<i>A. nubica</i>)
Aira	<i>Diospyros abyssinica</i>	Garsha	<i>Acacia albida</i> (<i>Faidherbia albida</i>)
Akalo	<i>Calotropis procera</i>	Geba	<i>Ziziphus spina-christi</i>
Akiba	<i>Acacia toritilis</i>	Gered chea	<i>Acacia nilotica</i>
Alhem	<i>Discopodium penninervum</i>	Geresa	<i>Dobera glabra</i>
Amam-gemel	<i>Piliostigma thonningii</i>	Gesho	<i>Rhamnus prinoides</i>
Anfarfaro	<i>Combretum molle</i>	Getem	<i>Schefflera abyssinica</i>
Anqwa	<i>Commiphora africana</i>	Geva	<i>Ziziphus mauritiana</i>
Anqwa	<i>Commiphora habessinica</i>	Gonnok	<i>Dichrostachys cinerea</i>
Antrokohela	<i>Steganotaenia araliacea</i>	Guadade	<i>Acacia asak</i>
Aqba	<i>Acacia albida</i> (<i>Faidherbia albida</i>)	Gum	<i>Euclea racemosa</i> subsp. <i>schimperi</i>
Aqba	<i>Acacia toritilis</i>	Gumero	<i>Acacia bussei</i>
Argti	<i>Maytenus senegalensis</i>	Gumero	<i>Acacia polyacantha</i> subsp. <i>campylacantha</i>
Argwdi	<i>Maytenus senegalensis</i>	Gura	<i>Strychnos spinosa</i>
Asha-om	<i>Bersama abyssinica</i> subsp. <i>abyssinica</i>	Hadai	<i>Salvadora persica</i>
Ashun	<i>Allophylus abyssinicus</i>	Hamat	<i>Celtis africana</i>
Atat	<i>Maytenus arbutifolia</i>	Hamat	<i>Celtis africana</i>
Auhi	<i>Cordia africana</i>	Haq	<i>Acacia asak</i>
Auleh	<i>Olea europaea</i> subsp. <i>cuspidata</i> (<i>Olea africana</i>)	Haua	<i>Celtis africana</i>
Ayeh	<i>Diospyros mespiliformis</i>	Haua	<i>Celtis africana</i>
Azamaro	<i>Allophylus abyssinicus</i>	Haziba	<i>Combretum molle</i>
Benkala	<i>Steganotaenia araliacea</i>	Hermer banba	<i>Adansonia digitata</i>
Berberi-islamay	<i>Sapium ellipticum</i>	Humer	<i>Tamarindus indica</i>
		Indrur	<i>Balanites aegyptiaca</i>

Tigrigna (Tg) cont.

Islami	<i>Croton macrostachyus</i>	Sawa	<i>Combretum collinum</i>
Tambush	<i>Croton macrostachyus</i>	Sellewa	<i>Acacia asak</i>
Kambash	<i>Hyphaene thebaica</i>	Seno	<i>Senna alexandrina</i> (<i>Cassia alexandrina</i>)
Karshiro	<i>Rhoicissus tridentata</i>	Shanto	<i>Erica arborea</i>
Kazmier	<i>Casimiroa edulis</i>	Shashata	<i>Sesbania sesban</i>
Kellau	<i>Euclea racemosa</i> subsp. <i>schimperi</i>	Shegla	<i>Ficus sycomorus</i>
Kock	<i>Prunus persica</i>	Shemut	<i>Rhus glutinosa</i>
Kommer	<i>Adansonia digitata</i>	Soans	<i>Erythrina abyssinica</i>
Kummel	<i>Mimusops kummel</i>	Soarch	<i>Erythrina abyssinica</i>
Kurruak	<i>Ebretia cymosa</i>	Soaueh	<i>Erythrina abyssinica</i>
Lahay	<i>Acacia lahai</i>	Sonkuah	<i>Dombeya torrida</i> subsp. <i>torrida</i> (<i>D. goetzenii</i>)
Laud	<i>Acacia oerfota</i> (<i>A. nubica</i>)	Suda	<i>Justicia schimperiana</i> (<i>Adhatoda schimperiana</i>)
Leaw	<i>Acacia oerfota</i> (<i>A. nubica</i>)	Swarya	<i>Allophylus abyssinicus</i>
Lelle	<i>Mimusops kummel</i>	Tekalo	<i>Rhus retinorrhoea</i>
Lemin	<i>Citrus aurantifolia</i>	Tetale	<i>Rhus natalensis</i>
Lemun	<i>Citrus aurantifolia</i>	Tetem agazen	<i>Sesbania sesban</i>
Lukina	<i>Leucaena leucocephala</i>	Thathalo	<i>Rhus natalensis</i>
Madere	<i>Buddleia polystachya</i>	Tiringuin	<i>Citrus medica</i>
Mangus	<i>Mangifera indica</i>	Tseada-chea	<i>Acacia seyal</i>
Mebetti	<i>Acokanthera schimperi</i>	Tseada-chea	<i>Acacia sieberiana</i>
Meger	<i>Boswellia papyrifera</i>	Tsedo	<i>Rhamnus staddo</i>
Mlehtta	<i>Ximenia americana</i>	Tselimo	<i>Maytenus undata</i>
Moad	<i>Steganotaenia araliacea</i>	Tselimo	<i>Psydrax schimperiana</i> subsp. <i>schimperiana</i> (<i>Canthium</i> <i>schimperianum</i>)
Momona	<i>Acacia albida</i> (<i>Faidherbia albida</i>)	Tsengwerefya	<i>Lonchocarpus laxiflorus</i>
Momret	<i>Adansonia digitata</i>	Tsihila	<i>Vepris nobilis</i> (<i>Teclea nobilis</i>)
Nefacia	<i>Acacia sieberiana</i>	Tsililo	<i>Maytenus senegalensis</i>
Nim	<i>Azadirachta indica</i>	Tsimkuya	<i>Grewia ferruginea</i>
Obel	<i>Tamarindus indica</i>	Ubul	<i>Tamarindus indica</i>
Ood	<i>Acacia oerfota</i> (<i>A. nubica</i>)	Unguaka	<i>Strychnos innocua</i>
Qamshi	<i>Allophylus abyssinicus</i>	Unguak-hebay	<i>Strychnos innocua</i>
Qebqes	<i>Maytenus senegalensis</i>	Utekki	<i>Senna alexandrina</i> (<i>Cassia alexandrina</i>)
Qentib	<i>Acacia senegal</i>	Vralo	<i>Rhus retinorrhoea</i>
Qentiba	<i>Acacia senegal</i>	Walba	<i>Boswellia papyrifera</i>
Qeyeh-chea	<i>Acacia seyal</i>	Weiba	<i>Combretum molle</i>
Reway	<i>Celtis africana</i>	Wogret	<i>Olea europaea</i> subsp. <i>cuspidata</i> (<i>Olea africana</i>)
Reway	<i>Celtis africana</i>		
Sagla	<i>Ficus sycomorus</i>		
Sankwah	<i>Grewia ferruginea</i>		
Saoria	<i>Maesa lanceolata</i>		

Tigrigna (Tg) cont.

Zahak	<i>Psydrax schimperiana</i> subsp. <i>schimperiana</i> (<i>Canthium schimperianum</i>)
Zellimo	<i>Diospyros abyssinica</i>

Wolaytigna (Wt)

Astie	<i>Ximenia americana</i>
Badessa	<i>Strychnos spinosa</i>
Chata	<i>Albizia gummifera</i>
Chatya	<i>Catha edulis</i>
Danga	<i>Mimusops kummel</i>
Eta	<i>Annona senegalensis</i> (<i>A. chrysophylla</i>)
Fundukiya	<i>Acacia seyal</i>
Gammo-gadie	<i>Ziziphus mucronata</i>
Gara	<i>Acacia sieberiana</i>
Garba	<i>Prunus africana</i> (<i>Pygeum africanum</i>)
Geregetwa	<i>Dodonaea viscosa</i>
Gergecho	<i>Maesa lanceolata</i>
Guganta	<i>Acacia lahai</i>
Gwemoriyya	<i>Acacia brevispica</i>
Hare Haiyita	<i>Terminalia brownii</i>
Kafo atara	<i>Cajanus cajan</i>
Kafwa ateriya	<i>Cajanus cajan</i>

Kalkalla	<i>Piliostigma thonningii</i>
Kalkallo	<i>Piliostigma thonningii</i>
Kokora	<i>Schefflera abyssinica</i>
Ladia	<i>Acokanthera schimperii</i>
Misira shendira	<i>Ilex mitis</i>
Odorwa	<i>Acacia abyssinica</i> subsp. <i>abyssinica</i>
Ochicha	<i>Strychnos spinosa</i>
Onsa	<i>Prunus africana</i> (<i>Pygeum africanum</i>)
Pulliesa	<i>Acacia sieberiana</i>
Sangano	<i>Steganotaenia araliacea</i>
Sangano	<i>Securidaca longipedunculata</i>
Shasho	<i>Albizia lebbeck</i>
Shosho	<i>Pouteria adolfi-friedericii</i> (<i>Aningeria adolfi-friedericii</i>)
Tintala shoa	<i>Bersama abyssinica</i> subsp. <i>abyssinica</i>
Tsege-reda-chisha	<i>Rosa abyssinica</i>
Tundukiyac	<i>Acacia senegal</i>
Uta	<i>Ensete ventricosum</i> (<i>E. edule</i>)
Wola	<i>Ficus sycomorus</i>
Worafuto	<i>Allophylus abyssinicus</i>
Yecha	<i>Ensete ventricosum</i> (<i>E. edule</i>)
Zagie	<i>Millettia ferruginea</i>
Zagiya	<i>Millettia ferruginea</i>

Species by agroclimatic zones

Dry Bereha/Dry Hot-lowland

Acacia oerfota
Acacia senegal
Acacia tortilis
Adansonia digitata
Arundo donax
Balanites aegyptiaca
Berberchia discolor
Boswellia papyrifera
Boswellia rivae
Calotropis procera
Ceiba pentandra
Commiphora africana
Commiphora erythraea
Commiphora habessinica
Cordeauxia edulis
Dalbergia melanoxylon
Dobera glabra
Erythroxylum fischeri
Hyphaene thebaica
Moringa oleifera
Oxytenanthera abyssinica
Prosopis juliflora
Salvadora persica
Senna alexandrina (*S. septemtrionalis*)
Sterculia africana
Tamarindus indica
Tamarix aphylla
Ziziphus mauritiana
Ziziphus mucronata
Ziziphus spina-christi

Moist Bereha/ Moist Hot-lowland

Acacia bussei
Acacia nilotica
Acacia tortilis
Adansonia digitata
Albizia malacophylla
Aloe vera
Annona muricata
Annona senegalensis
Anogeissus leiocarpus
Antiaris toxicaria
Arundo donax
Azadirachta indica
Baphia abyssinica

Borassus aethiopum
Cajanus cajan
Casimiroa edulis
Casuarina equisetifolia
Ceiba pentandra
Celtis africana
Celtis toka (*C. integrifolia*)
Citrus aurantifolia
Citrus reticulata
Citrus sinensis
Combretum collinum
Commiphora erythraea
Commiphora habessinica
Dalbergia melanoxylon
Dalbergia sissoo
Delonix regia
Diospyros mespiliformis
Dobera glabra
Dodonaea viscosa
Erythroxylum fischeri
Flueggea virosa
Gardenia ternifolia
Gardenia volkensii
Hyphaene thebaica
Kigelia africana
Lawsonia inermis
Leucaena leucocephala
Lonchocarpus laxiflorus
Mangifera indica
Melia azedarach
Milicia excelsa
Moringa oleifera
Olyra latifolia
Oncoba spinosa
Oxytenanthera abyssinica
Pithecellobium dulce
Prosopis juliflora
Ricinus communis
Salvadora persica
Sarcocephalus latifolius
Schinus molle
Sclerocarya birrea
Securidaca longipedunculata
Senna alexandrina (*S. septemtrionalis*)
Spathodea campanulata
Sterculia africana

Tamarindus indica
Tamarix aphylla
Terminalia laxiflora
Vitellaria paradoxa
Vitex doniana
Ximenia americana
Ziziphus mauritiana
Ziziphus mucronata
Ziziphus pubescens
Ziziphus spina-christi

Dry Kolla/ Dry Lowland

Acacia asak
Acacia senegal
Adansonia digitata
Albizia lebbbeck
Albizia malacophylla
Aloe vera
Arundo donax
Azadirachta indica
Balanites aegyptiaca
Berchemia discolor
Blighia unijugata
Boswellia papyrifera
Boswellia rivae
Breonadia salicina
Bridelia micrantha
Cajanus cajan
Calotropis procera
Capparis tomentosa
Carissa spinarum
Casimiroa edulis
Casuarina cunninghamiana
Casuarina equisetifolia
Ceiba pentandra
Celtis africana
Citrus aurantifolia
Citrus sinensis
Combretum aculeatum
Combretum collinum
Combretum molle
Commiphora africana
Commiphora erythraea
Croton macrostachyus
Dalbergia melanoxylon
Delonix regia
Dicrostachys cinerea
Diospyros mespiliformis

Dobera glabra
Dodonaea viscosa
Entada abyssinica
Erythroxylum fischeri
Eucalyptus camaldulensis
Euclea racemosa
Euphorbia tirucalli
Fagaropsis angolensis
Ficus carica
Flacourtia indica
Flueggea virosa
Gardenia ternifolia
Gardenia volkensii
Grewia ferruginea
Hyphaene thebaica
Lawsonia inermis
Leucaena leucocephala
Mangifera indica
Maytenus arbutifolia
Maytenus senegalensis
Maytenus undata
Melia azedarach
Moringa oleifera
Oxytenanthera abyssinica
Parkinsonia aculeata
Phoenix reclinata
Pithecellobium dulce
Prosopis juliflora
Salvadora persica
Sarcocephalus latifolius
Schinus molle
Sclerocarya birrea
Senna didymobotrya
Senna siamea
Steganotaenia araliacea
Sterculia africana
Strychnos spinosa
Tamarindus indica
Tamarix aphylla
Terminalia brownii
Trichilia emetica
Vitex doniana
Ximenia americana
Ziziphus mauritiana
Ziziphus mucronata
Ziziphus spina-christi

Moist Kolla/ Moist Lowland

Acacia albida
Acacia asak
Acacia brevispica
Acacia bussei
Acacia nilotica
Acacia oerfota
Acacia polyacantha
Acacia saligna
Acacia senegal
Acacia sieberiana
Acacia tortilis
Albizia grandibracteata
Albizia lebbeck
Albizia malacophylla
Aloe vera
Annona muricata
Anogeissus leiocarpus
Antiaris toxicaria
Apodytes dimidiata
Arundo donax
Azadirachta indica
Balanites aegyptiaca
Baphia abyssinica
Berchemia discolor
Blighia unijugata
Borassus aethiopum
Breonadia salicina
Bridelia micrantha
Cajanus cajan
Calotropis procera
Capparis tomentosa
Carissa spinarum
Casimiroa edulis
Casuarina cunninghamiana
Casuarina equisetifolia
Ceiba pentandra
Celtis africana
Citrus aurantifolia
Citrus medica
Citrus sinensis
Combretum aculeatum
Combretum collinum
Combretum molle
Commiphora africana
Commiphora habessinica
Dalbergia melanoxylon

Dalbergia sissoo
Delonix regia
Dicrostachys cinerea
Diospyros mespiliformis
Dobera glabra
Dodonaea viscosa
Entada abyssinica
Erythrina abyssinica
Erythrina brucei
Erythroxylum fischeri
Eucalyptus camaldulensis
Eucalyptus citriodora
Eucalyptus saligna
Euclea racemosa
Euphorbia candelabrum
Euphorbia tirucalli
Ficus carica
Ficus elastica
Flacourtia indica
Flueggea virosa
Gardenia ternifolia
Gardenia volkensii
Gmelina arborea
Grewia bicolor
Grewia ferruginea
Grewia villosa
Hyphaene thebaica
Jacaranda mimosifolia
Kigelia africana
Lannea welwitschii
Lepidotrichilia volkensii
Leucaena leucocephala
Lonchocarpus laxiflorus
Mangifera indica
Markhamia lutea
Maytenus arbutifolia
Maytenus senegalensis
Maytenus undata
Melia azedarach
Milicia excelsa
Millettia ferruginea
Moringa oleifera
Morus alba
Morus mesozygia
Myrtus communis
Olyra latifolia
Oncoba spinosa

Oxytenanthera abyssinica
Parkinsonia aculeata
Phoenix dactylifera
Phoenix reclinata
Pithecellobium dulce
Pouteria altissima
Prosopis juliflora
Psidium guajava
Psydrax schimperiana
Rhamnus prinoides
Ricinus communis
Salix mucronata
Salvadora persica
Sarcocephalus latifolius
Schinus molle
Sclerocarya birrea
Securidaca longipedunculata
Senna alexandrina (S. septemtrionalis)
Senna didymobotrya
Senna siamea
Sesbania sesban
Spathodea campanulata
Steganotaenia araliacea
Sterculia africana
Stereospermum kunthianum
Strychnos spinosa
Syzygium guineense
Tamarindus indica
Terminalia brownii
Terminalia laxiflora
Trichilia emetica
Vepris nobilis
Vitellaria paradoxa
Vitex doniana
Warburgia ugandensis
Woodfordia uniflora
Ximenia americana
Ziziphus mauritiana
Ziziphus mucronata
Ziziphus spina-christi

Wet kolla/Wet Lowland

Albizia grandibracteata
Albizia malacophylla
Annona muricata
Annona senegalensis
Antiaris toxicaria
Apodytes dimidiata

Arundo donax
Azadirachta indica
Baphia abyssinica
Borassus aethiopum
Breonadia salicina
Calotropis procera
Casuarina equisetifolia
Cyathea manniana
Dalbergia melanoxylon
Dalbergia sissoo
Diospyros mespiliformis
Entada abyssinica
Erythrina abyssinica
Erythrina brucei
Eucalyptus camaldulensis
Eucalyptus citriodora
Eucalyptus saligna
Euclea racemosa
Euphorbia candelabrum
Ficus carica
Ficus elastica
Flueggea virosa
Gardenia volkensii
Gmelina arborea
Grewia bicolor
Grewia villosa
Hevea brasiliensis
Jacaranda mimosifolia
Kigelia africana
Lannea welwitschii
Lawsonia inermis
Lepidotrichilia volkensii
Leucaena leucocephala
Mangifera indica
Markhamia lutea
Maytenus arbutifolia
Maytenus senegalensis
Melia azedarach
Milicia excelsa
Millettia ferruginea
Moringa oleifera
Morus mesozygia
Myrtus communis
Olyra latifolia
Oncoba spinosa
Oxytenanthera abyssinica
Phoenix dactylifera
Pouteria altissima

Psidium guajava
Psydrax schimperiana
Rhamnus prinoides
Ricinus communis
Salix mucronata
Schinus molle
Sesbania sesban
Spathodea campanulata
Stereospermum kunthianum
Strychnos spinosa
Syzygium guineense
Terminalia brownii
Terminalia laxiflora
Vepris dainellii
Vepris nobilis
Vitex doniana
Warburgia ugandensis
Woodfordia uniflora
Ximenia americana
Ziziphus mucronata

Dry Weyna Dega /Dry Mid-highland

Acacia abyssinica
Acacia albida
Acacia brevispica
Acacia saligna
Acacia seyal
Acacia sieberiana
Acacia tortilis
Acokanthera schimperi
Albizia gummifera
Albizia malacophylla
Allophylus abyssinicus
Arundo donax
Azadirachta indica
Berberis holstii
Bersama abyssinica
Bridelia micrantha
Buddleia polystachya
Caesalpinia decapetala
Cajanus cajan
Capparis tomentosa
Carissa spinarum
Casimiroa edulis
Casuarina cunninghamiana
Casuarina equisetifolia
Catha edulis
Celtis africana

Chamaecytisus proliferus
Citrus aurantifolia
Citrus medica
Citrus reticulata
Citrus sinensis
Combretum molle
Commiphora habessinica
Cordia africana
Croton macrostachyus
Cupressus lusitanica
Dalbergia melanoxylon
Diospyros mespiliformis
Dodonaea viscosa
Dombeya torrida
Ekebergia capensis
Entada abyssinica
Eucalyptus globulus
Euclea racemosa
Euphorbia abyssinica
Euphorbia candelabrum
Euphorbia tirucalli
Fagaropsis angolensis
Ficus carica
Flacourtia indica
Flueggea virosa
Gardenia ternifolia
Gardenia volkensii
Grevillea robusta
Grewia ferruginea
Justicia schimperiana
Manilkara butugi
Maytenus arbutifolia
Maytenus senegalensis
Maytenus undata
Melia azedarach
Millettia ferruginea
Morus alba
Myrica salicifolia
Nuxia congesta
Olea europaea ssp. cuspidata
Olea welwitschii
Otostegia integrifolia
Parkinsonia aculeata
Phoenix reclinata
Phytolacca dodecandra
Pinus patula
Premna schimperi
Schinus molle

Senna didymobotrya
Sesbania sesban
Spathodea campanulata
Stereospermum kunthianum
Strychnos henningsii
Syzygium guineense
Terminalia brownii
Trilepisium madagascariense
Vepris dainellii
Vepris nobilis
Vernonia amygdalina
Warburgia ugandensis
Woodfordia uniflora
Ximenia americana
Ziziphus mucronata

Moist Weyna Dega/ Moist Mid-highland

Acacia abyssinica
Acacia albida
Acacia brevispica
Acacia bussei
Acacia decurrens
Acacia lahai
Acacia mearnsii
Acacia melanoxylon
Acacia seyal
Acacia sieberiana
Acacia tortilis
Acokanthera schimperi
Albizia grandibracteata
Albizia gummifera
Albizia lophantha
Albizia malacophylla
Albizia schimperiana
Apodytes dimidiata
Arundo donax
Azadirachta indica
Berberis holstii
Bersama abyssinica
Borassus aethiopum
Bridelia micrantha
Buddleia polystachya
Caesalpinia decapetala
Cajanus cajan
Capparis tomentosa
Carissa spinarum
Casimiroa edulis
Casuarina cunninghamiana

Catha edulis
Celtis africana
Chamaecytisus proliferus
Citrus aurantifolia
Citrus medica
Citrus reticulata
Citrus sinensis
Combretum molle
Commiphora habessinica
Cordia africana
Croton macrostachyus
Cupressus lusitanica
Dalbergia melanoxylon
Diospyros abyssinica
Diospyros mespiliformis
Dombeya torrida
Dovyalis abyssinica
Dracaena steudneri
Ehretia cymosa
Ekebergia capensis
Embelia schimperi
Ensete ventricosum
Entada abyssinica
Eriobotrya japonica
Erythrina abyssinica
Erythrina brucei
Eucalyptus citriodora
Eucalyptus globulus
Eucalyptus grandis
Eucalyptus saligna
Euclea racemosa
Euphorbia abyssinica
Euphorbia candelabrum
Euphorbia tirucalli
Fagaropsis angolensis
Ficus carica
Ficus elastica
Ficus sur
Ficus sycomorus
Flacourtia indica
Flueggea virosa
Galiniera saxifraga
Gardenia ternifolia
Gardenia volkensii
Grevillea robusta
Grewia bicolor
Grewia ferruginea
Grewia villosa

Hagenia abyssinica
Ilex mitis
Jacaranda mimosifolia
Juniperus procera
Justicia schimperiana
Lepidotrichilia volkensii
Maesa lanceolata
Malus domestica
Manilkara butugi
Markhamia lutea
Maytenus arbutifolia
Maytenus senegalensis
Maytenus undata
Melia azedarach
Millettia ferruginea
Mimusops kummel
Morus alba
Myrica salicifolia
Myrtus communis
Nuxia congesta
Ocotea kenyensis
Olea capensis
Olea europaea ssp. *cuspidata*
Olea welwitschii
Olinia rochetiana
Otostegia fruticosa
Otostegia integrifolia
Parkinsonia aculeata
Pavetta oliveriana
Persea americana
Phoenix reclinata
Phytolacca dodecandra
Piliostigma thonningii
Pinus patula
Pinus radiata
Pithecellobium dulce
Pittosporum viridiflorum
Podocarpus falcatus
Polyscias fulva
Pouteria adolfi-friedericii
Pouteria altissima
Premna schimperi
Prunus africana
Prunus persica
Psidium guajava
Psydrax schimperiana
Rhamnus prinoides
Rhamnus staddo

Rhoicissus revoilii
Rhoicissus tridentata
Rhus glutinosa
Rhus natalensis
Rhus retinorrhoea
Rhus vulgaris
Ricinus communis
Rosa abyssinica
Salix mucronata
Sapium ellipticum
Schefflera abyssinica
Schinus molle
Senna didymobotrya
Sesbania sesban
Spathodea campanulata
Stereospermum kunthianum
Strychnos henningsii
Strychnos innocua
Syzygium guineense
Terminalia brownii
Trichilia dregeana
Trilepisium madagascariense
Vepris dainellii
Vepris nobilis
Vernonia amygdalina
Warburgia ugandensis
Woodfordia uniflora
Ximenia americana
Ziziphus mucronata

Wet Weyna Dega/ Wet Mid-highland

Acacia abyssinica
Acacia albida
Acacia bussei
Acacia decurrens
Acacia labai
Acacia mearnsii
Acacia melanoxylon
Acacia sieberiana
Albizia grandibracteata
Albizia gummifera
Albizia lophantha
Allophylus abyssinicus
Apodytes dimidiata
Arundo donax
Bersama abyssinica
Borassus aethiopum
Buddleia polystachya

Caesalpinia decapetala
Casuarina equisetifolia
Catha edulis
Citrus medica
Citrus reticulata
Cordia africana
Croton macrostachyus
Cupressus lusitanica
Cyathea manniana
Dalbergia melanoxylon
Diospyros abyssinica
Diospyros mespiliformis
Dombeya torrida
Dovyalis abyssinica
Dracaena steudneri
Ehretia cymosa
Ekebergia capensis
Embelia schimperi
Ensete ventricosum
Entada abyssinica
Eriobotrya japonica
Erythrina abyssinica
Erythrina brucei
Eucalyptus citriodora
Eucalyptus globulus
Eucalyptus grandis
Eucalyptus saligna
Euclea racemosa
Euphorbia abyssinica
Fagaropsis angolensis
Ficus carica
Ficus elastica
Ficus sur
Ficus sycomorus
Flueggea virosa
Galiniera saxifraga
Grevillea robusta
Grewia bicolor
Grewia villosa
Hagenia abyssinica
Ilex mitis
Jacaranda mimosifolia
Juniperus procera
Lawsonia inermis
Lepidotrichilia volkensii
Maesa lanceolata
Malus domestica
Manilkara butugi

Markhamia lutea
Maytenus arbutifolia
Maytenus senegalensis
Melia azedarach
Millettia ferruginea
Mimusops kummel
Morus alba
Myrtus communis
Ocotea kenyensis
Olea capensis
Olea europaea ssp. cuspidata
Olea welwitschii
Olinia rochetiana
Pavetta oliveriana
Persea americana
Phoenix reclinata
Phytolacca dodecandra
Piliostigma thonningii
Pinus radiata
Pittosporum viridiflorum
Podocarpus falcatus
Polyscias fulva
Pouteria adolfi-friedericii
Pouteria altissima
Prunus africana
Prunus persica
Psidium guajava
Psydrax schimperiana
Rhamnus prinoides
Rhamnus staddo
Rhoicissus revoilii
Rhoicissus tridentata
Rhus glutinosa
Rhus natalensis
Ricinus communis
Salix mucronata
Sapium ellipticum
Schefflera abyssinica
Schinus molle
Sesbania sesban
Spathodea campanulata
Stereospermum kunthianum
Strychnos innocua
Syzygium guineense
Terminalia brownii
Trichilia dregeana
Trilepisium madagascariense
Vepris dainellii

Vepris nobilis
Vernonia amygdalina
Warburgia ugandensis
Woodfordia uniflora
Ximenia americana
Ziziphus mucronata

Dry Dega/ Dry Highland

Acacia decurrens
Acacia labai
Acacia mearnsii
Acacia melanoxylon
Allophylus abyssinicus
Carissa spinarum
Casuarina cunninghamiana
Chamaecytisus proliferus
Cupressus lusitanica
Discopodium penninervum
Erica arborea
Eucalyptus globulus
Eucalyptus viminalis
Euphorbia tirucalli
Juniperus procera
Malus domestica
Olea europaea ssp. *cuspidata*
Otostegia fruticosa
Otostegia integrifolia
Pinus radiata
Podocarpus falcatus
Psydrax schimperiana
Rhamnus prinoides
Schinus molle
Vepris nobilis

Moist Dega /Moist Highland

Acacia abyssinica
Acacia decurrens
Acacia labai
Acacia mearnsii
Acacia melanoxylon
Allophylus abyssinicus
Arundinaria alpina
Berberis holstii
Bersama abyssinica
Buddleia polystachya
Cajanus cajan
Carissa spinarum

Casuarina cunninghamiana
Casuarina equisetifolia
Chamaecytisus proliferus
Croton macrostachyus
Cupressus lusitanica
Diospyros abyssinica
Diospyros mespiliformis
Discopodium penninervum
Dombeya schimperiana
Dombeya torrida
Ekebergia capensis
Embelia schimperii
Ensete ventricosum
Erica arborea
Eucalyptus globulus
Eucalyptus viminalis
Euphorbia tirucalli
Ficus elastica
Galiniera saxifraga
Grevillea robusta
Hagenia abyssinica
Hypericum revolutum
Ilex mitis
Juniperus procera
Justicia schimperiana
Maesa lanceolata
Malus domestica
Manilkara butugi
Maytenus arbutifolia
Maytenus undata
Myrica salicifolia
Nuxia congesta
Olea europaea ssp. *cuspidata*
Olea welwitschii
Otostegia fruticosa
Otostegia integrifolia
Pinus radiata
Pittosporum viridiflorum
Podocarpus falcatus
Polyscias fulva
Pouteria adolfi-friedericii
Psydrax schimperiana
Rhamnus prinoides
Rhamnus staddo
Ricinus communis
Rosa abyssinica
Salix mucronata

Schefflera abyssinica
Schinus molle
Vepris nobilis

Wet Dega/ Wet Highland

Acacia abyssinica
Acacia decurrens
Acacia lahai
Acacia mearnsii
Acacia melanoxylon
Allophylus abyssinicus
Apodytes dimidiata
Arundinaria alpina
Croton macrostachyus
Cupressus lusitanica
Discopodium penninervum
Dombeya torrida
Ekebergia capensis
Embelia schimperii
Ensete ventricosum
Erica arborea
Eucalyptus globulus
Eucalyptus viminalis
Ficus elastica
Galiniera saxifraga
Grevillea robusta
Hagenia abyssinica
Hypericum revolutum
Ilex mitis
Juniperus procera
Maesa lanceolata
Malus domestica
Manilkara butugi
Maytenus arbutifolia
Maytenus undata
Myrica salicifolia
Nuxia congesta
Olea europaea ssp. cuspidata
Olea wehwitschii
Otostegia integrifolia
Pinus radiata
Podocarpus falcatus
Polyscias fulva
Pouteria adolfi-friedericii
Rhamnus prinoides
Rhamnus staddo
Ricinus communis

Rosa abyssinica
Salix mucronata
Schefflera abyssinica
Schinus molle
Vepris nobilis

Dry Wurch/Dry Frost

Cupressus lusitanica
Discopodium penninervum
Erica arborea
Olea europaea ssp. cuspidata
Pinus radiata

Moist Wurch/ Moist Frost zone

Buddleia polystachya
Cupressus lusitanica
Discopodium penninervum
Dombeya schimperiana
Dombeya torrida
Erica arborea
Galiniera saxifraga
Hypericum quartinianum
Hypericum revolutum
Hypericum roeperianum
Pinus radiata

Wet Wurch/Wet Frost

Discopodium penninervum
Erica arborea
Hypericum quartinianum
Hypericum revolutum
Hypericum roeperianum

Dry Alpine Wurch/ Dry Alpine-frost

Hypericum quartinianum
Hypericum roeperianum

Moist Alpine Wurch/Moist Alpine-frost

Hypericum quartinianum
Hypericum roeperianum

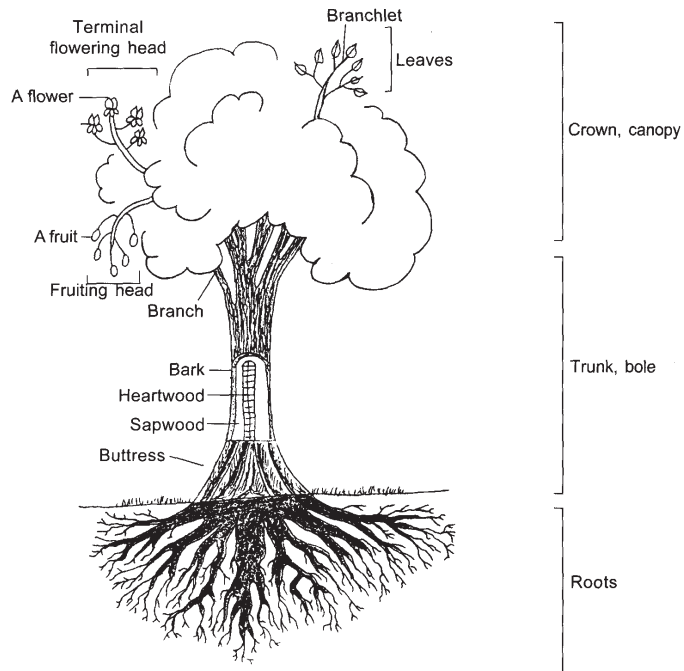
Wet Alpine Wurch/ Wet Alpine-frost

Hypericum quartinianum
Hypericum roeperianum

Illustrated glossary of botanical terms

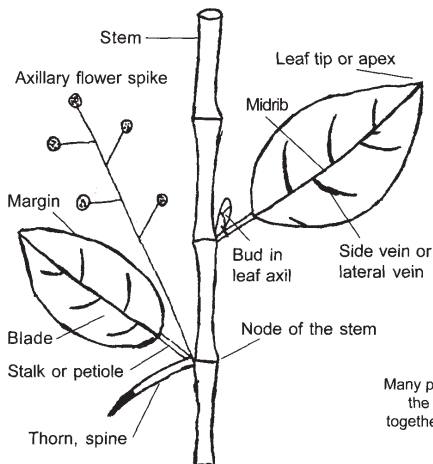
a) Tree, Leaf and Floral Parts

The parts of a typical tree

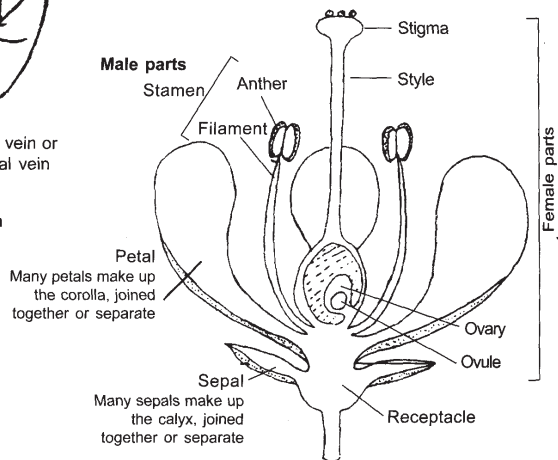


Leaves and stems

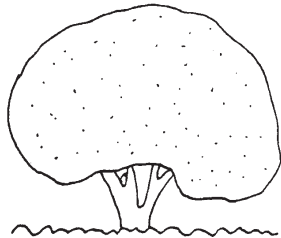
Diagram showing two simple leaves alternate on a stem



Diagrammatic section through a typical flower



Tree shapes



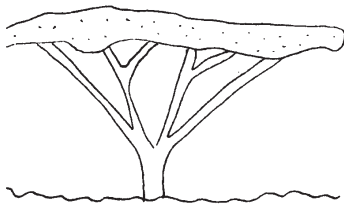
Rounded crown, dense, shady canopy



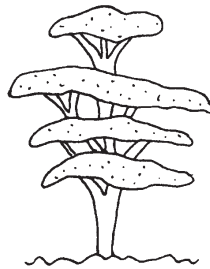
Narrow open crown, light shade



Conical crown



Flat-topped, spreading crown

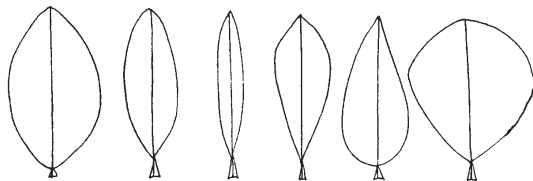


Canopy in layers

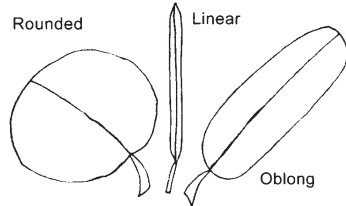


Tall bole, small dense crown

Leaves



A variety of simple oval-shaped leaves



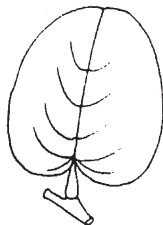
Rounded

Linear

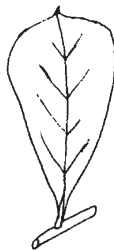
Oblong



No leaf stalk, sessile



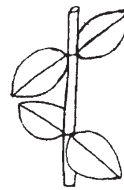
Leaf base heart shaped



Leaf base narrowed



Leaf base unequal, asymmetric

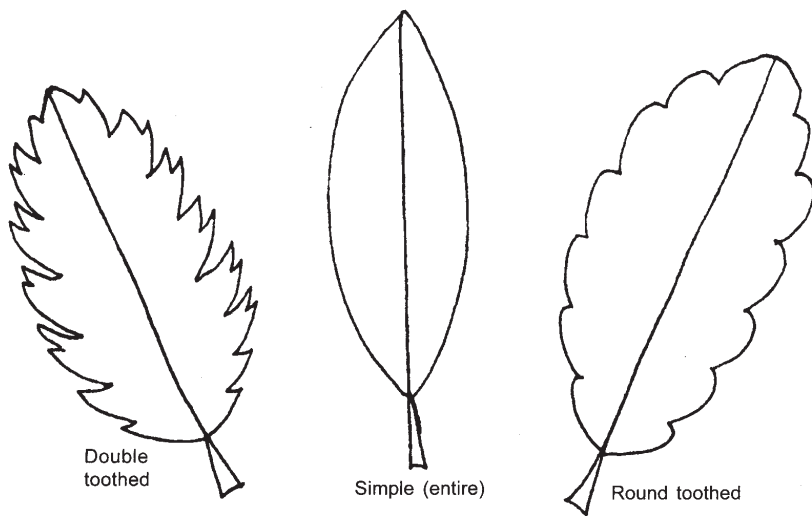
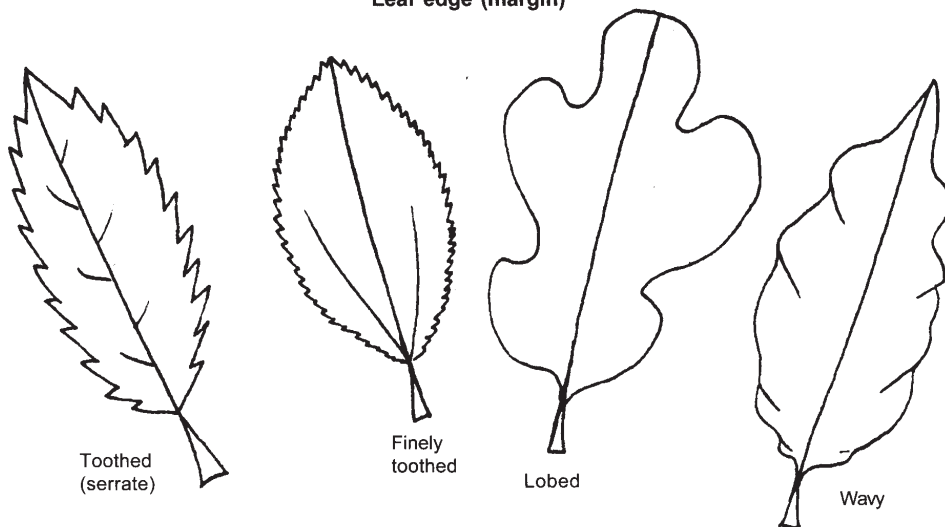


Opposite pairs of leaves

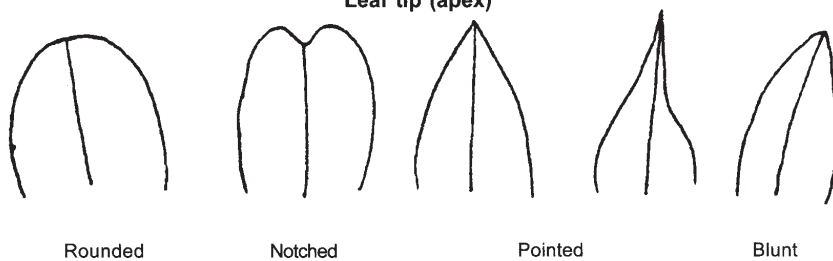


Four-whorled leaves

Leaf edge (margin)

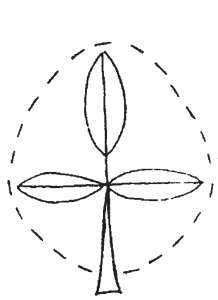


Leaf tip (apex)



Leaves may be simple or compound

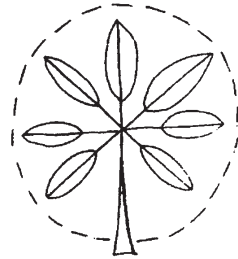
A compound leaf is a leaf whose blade is divided into smaller leaflets



A compound trifoliate leaf
Three leaflets, e.g. *Rhus*

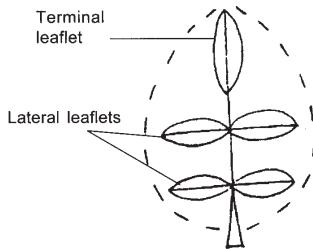


A simple leaf



A compound palmate leaf (digitate)
Many leaflets spread like fingers of the hand, e.g. *Adansonia*

A compound pinnate leaf



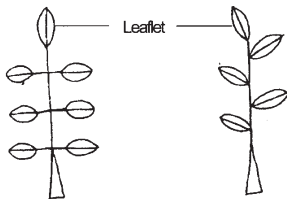
Terminal leaflet

Lateral leaflets

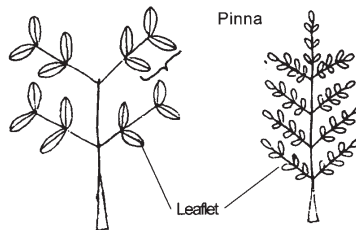
Five or more leaflets arise on either side of the leaf stalk, resembling a bird's feather (Latin *pinna*: wing)

Pinnate compound leaves are of several types.

Those with very small leaflets have 'feathery leaves'



Compound pinnate leaves
Once-compound leaves, e.g. *Markhamia*



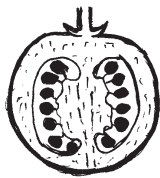
Pinna

Leaflet

Two pairs of pinnae Four pairs of pinnae
Twice-compound leaves (bipinnate), e.g. *Acacia* spp.

b) Fruits

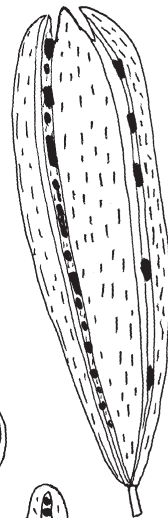
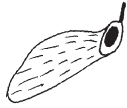
Fleshy fruits



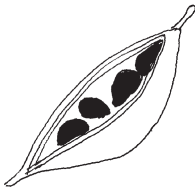
Berries

Drupe

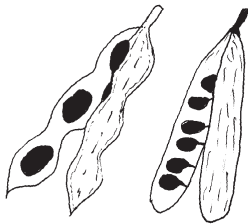
Indehiscent fruits (dry fruits - not splitting open)



Dehiscent fruits (splitting open)



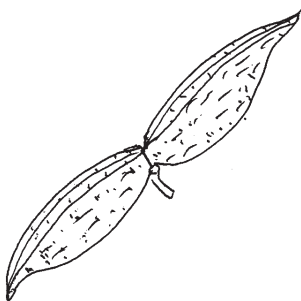
Follicle



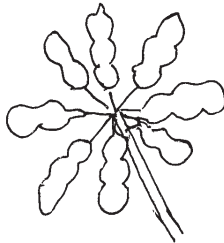
Legumes



Capsules



Fruits originating
from one flower



Fruits originating
from many flowers



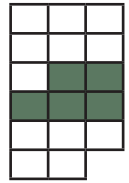
(Source: Beentje, H. J. 1994.)

PART III

Species details

Acacia abyssinica subsp. *abyssinica*

Fabaceae



Indigenous

Af: *Keselto*

Eng: *Umbrella thorn, Flat-top acacia*

Ga: *Dhaze*

Ag: *Tsatsi*

Sh: *Siba*

Am: *Bazra girar*

Tg: *Cheba*

Wt: *Odorwa*

Ecology

Found in Africa from Ethiopia south to Mozambique and Zimbabwe. In Ethiopia it occurs in wooded grassland, highland forest edges of Dry, Moist and Wet Weyna Dega and Wet and Moist Dega agroclimatic zones of Gonder, Gojam, Wolega, Bale, Arsi, Ilubabor, Kefa, Sidamo, western Tigray and Shoa regions, 1,500–2,800 m.

Uses

Firewood, charcoal, poles, posts, tool handles, food (edible gum), medicine, fodder, bee forage, shade (for cattle), nitrogen fixation, soil conservation, fence (cut branches).

Description

A large flat-topped tree to 20 m when mature. **BARK:** Rough, grooved, dark brown. **THORNS:** Very variable, short or long, sometimes none. **LEAVES:** Compound, 15–36 pairs of pinnae when mature, on a stalk to 9 cm, leaflets tiny. **FLOWERS:** Very many, round heads of cream flowers, buds pink-red. **FRUIT:** Pods to 12 cm, usually straight, red-grey-brown, splitting to set free seed.

Propagation

Seedlings, direct sowing at site, wildings.

Seed

Seed quite small, highly susceptible to beetle attack while still in pods as well as after extraction. 16,000–18,000 seed per kg.

Treatment: Soak in hot water for a minute, allow to cool and soak for 36–48 hours. Damaged seeds that float should be discarded.

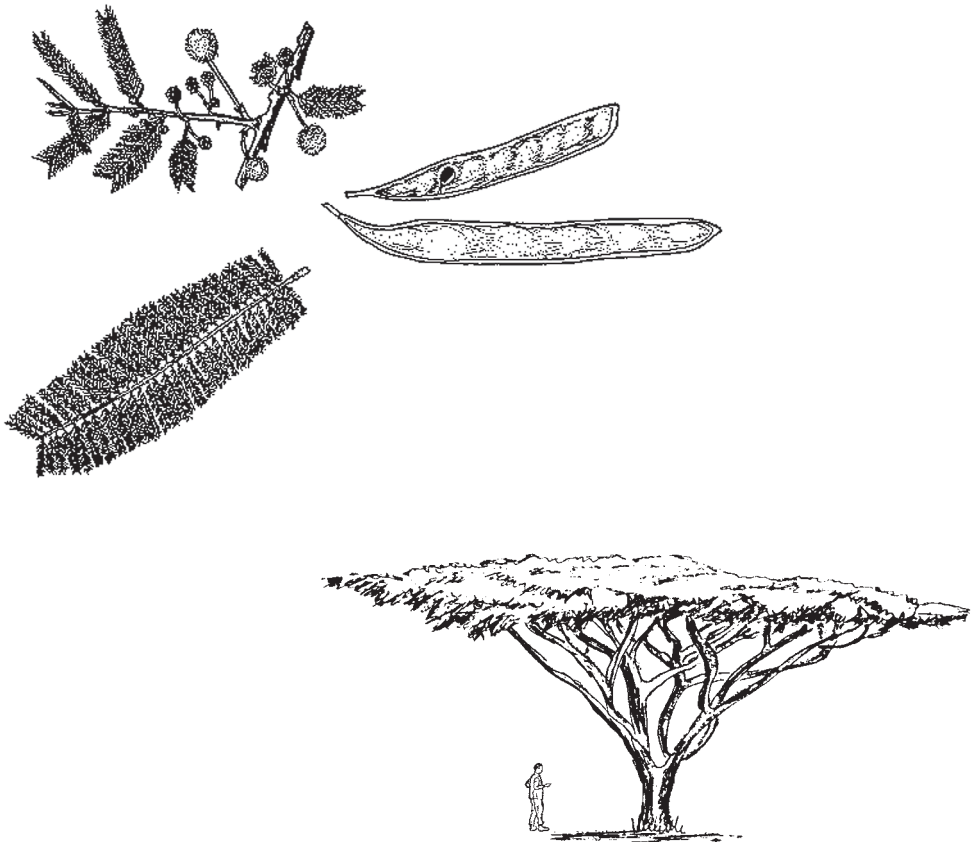
Storage: Seed can be stored for long periods if kept in a cool, dry and insect-free place. Add ash to reduce risk to insect damage.

Management

Growth rate is medium to fast. Coppices when young. Can be lopped and pollarded.

Remarks

Spreading roots make it unsuitable for planting near buildings. Drought tolerant, will grow on degraded land and along gullies. It makes good firewood but the hard wood is difficult to work.



Acacia albida

(*Faidherbia albida*)

Fabaceae

Indigenous

Am: *Grar*

Eng: *Apple-ring acacia, winter thorn*

Ga: *Kertor*

Or: *Gerbi, Derot*

Sh: *Momona*

Tg: *Aqba, Garsha, Momona*

Ecology

Widespread in semi-arid Africa in a wide range of soil types and in different climates. In Ethiopia it occurs in Dry, Moist and Wet Weyna Dega agroclimatic zones. It does well on occasionally waterlogged land in Tigray, Gonder, Welo, Shoa, Arsi, Harerge, Sidamo, and Gamo Gofa regions, up to 2,600 m.

Uses

Firewood, charcoal, timber (construction), posts, utensils, food (pods for flavouring, boiled seeds), medicine (bark), fodder (pods, leaves), shade, mulch, nitrogen fixation, soil conservation, soil improvement, windbreak, tannin, dye, soap, fence (cut branches).

Description

A large leafy tree 15–30 m, with a wide rounded crown when mature, sometimes deciduous. BARK: Grey-brown, rough; young twigs pale grey and zigzag. THORNS: Straight to 2 cm long. LEAVES: Compound, 3–10 pairs of pinnae, leaflets round tipped, grey-green, little dot glands just visible where the pinnae grow out of the leaf stalk. FLOWERS: In dense creamy spikes about

10 cm long, very fragrant.

FRUIT: Pods conspicuous bright orange to red-brown, twisted and curled, thick, hard and shiny, to 25 cm long by 3.5 cm wide, containing 10–20 seeds which ripen at the end of the dry season. Pods do not split open but rot on the ground to release seed. Seedlings have leaves like those of mature trees—an aid to identification.



Propagation

Seedlings, direct sowing at site.

Seed

7,500–10,000 seed per kg. Germination 60–90% within 5–20 days.

Treatment: Pour boiling water over seed, allow to cool and soak for 24 hours. Alternatively, nick the seed at the distal (cotyledon) end.

Storage: Can be stored indefinitely if kept cool, dry, and insect free. The seed are, however, very susceptible to insect attack, so in practice avoid storage.

Management

Slow initial growth, later fairly fast growing on good sites; lopping, pollarding.

Remarks

The species is sometimes called *Faidherbia albida* because so many of its parts are unlike those of any other Acacia. It is intercropped with sorghum, teff and millet. Deep-rooted so does not compete with food crops. Fallen pods, rich in protein, can also be eaten (people and livestock) at the beginning of the rains. At that time also fallen leaves provide mulch for crop growth.

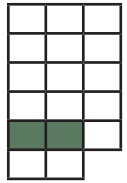


Photo: Patrick Maundu



Acacia asak

Fabaceae



Indigenous

Af: *Eibeto*

Am: *Sebansa*

Eng: *Wait-a-bit thorn*

Sm: *Adad-medu, Gwider, Rede*

Tg: *Guadade, Haq, Sellewa*

Ecology

This shrub or tree is confined to The Sudan Somalia, Arabia, Ethiopia and Eritrea.

In Ethiopia it is found in Dry and Moist Kolla agroclimatic zones in Welo, Tigray and Harerge regions, mainly along water courses, on rocky ground, and in deciduous bushland, 400–1,900 m.

Uses

Firewood, charcoal, timber (construction), fodder (camel browse).

Description

A tree or shrub up to 10 m. BARK: On young stems yellow and peeling, on older stems dark grey and fissured. THORNS: Variable, short, straight or re-curved, single, or in threes, the central thorn hooked. LEAVES: Compound, with 3–6 widely spaced pairs of pinnae, on a stalk to 5 cm, leaflets grey-green with rounded tips. FLOWERS: White-pale yellow on spikes to 11 cm. FRUIT: Straight flat pods, brown-purple and smooth to 12 cm long, breaking open.

Propagation

Does well from seedlings. Direct sowing at site is also possible.

Seed

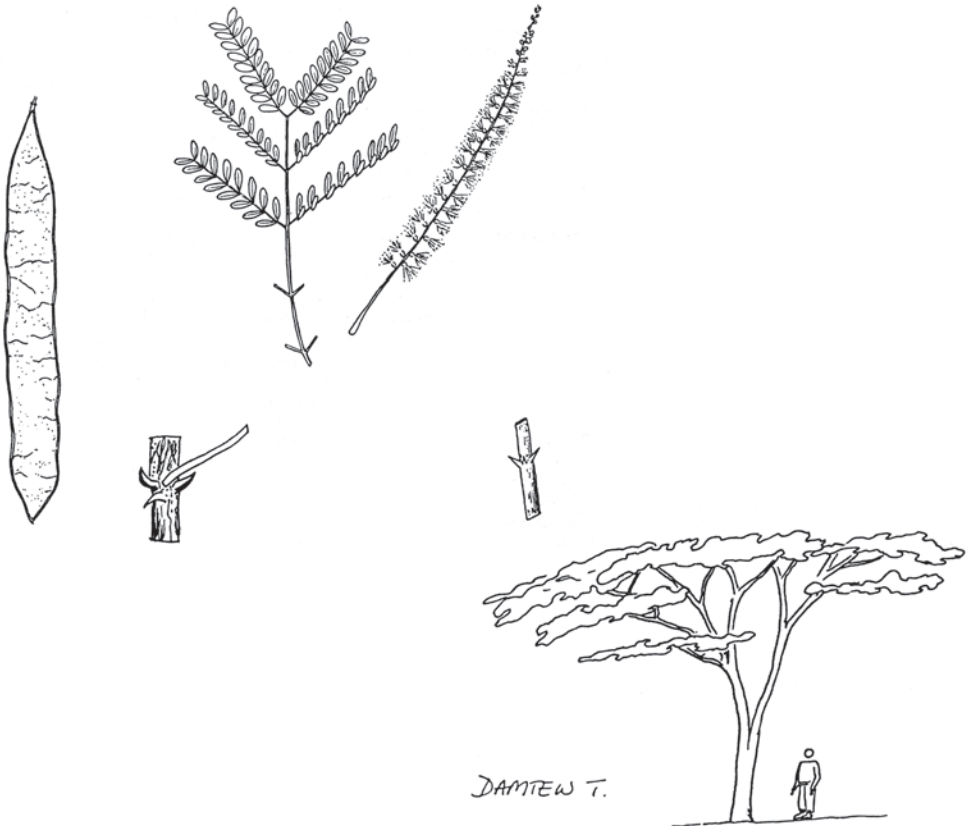
5,000–6,000 seed per kg.

Treatment: Not necessary.

Storage: Can be stored for a long period.

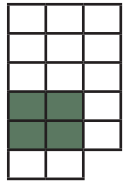
Management

It tends to be multi-stem. Stem reduction and pruning will help to develop trunk and increase ease of movement in between adjacent trees.



Acacia brevispica

Fabaceae



Indigenous

Am: *Kentefa, Kontevl, Mezazign*

Eng: *Wait-a-bit thorn*

Br: *Gorgor, Hammaress*

Or: *Amezaze, Hamarecha, Sokeusa, Qanter, Qwentr*

Sm: *Furgori, Qorqor*

Wt: *Gwemoriyya*

Ecology

A common *Acacia* species in dry as well as semi-humid parts of Africa, from Ethiopia and Sudan south to South Africa. Found forming thickets together with other shrubs and trees in bushland. It grows well in Moist and Dry Kolla and Weyna Dega agroclimatic zones of Harerge, Bale, Welo, Sidamo, Gamo Gofa, Kefa and Shoa regions, 400–2,000 m.

Uses

Firewood, medicine (roots), fodder (pods and leaves), live fence.

Description

Sometimes a slender tree to 7 m but more often a shrub, forming thickets, or scrambling over other plants. BARK: Light grey–pale brown; young stems green, hairy, often zigzag. THORNS: Characteristic, small, single prickles, mostly hooked, scattered along the stems. LEAVES: Compound, 5–20 pairs of pinnae, leaf stalk to 10 cm. FLOWERS: Fragrant, yellow-white in round heads on branching stalks to 10 cm. The shrub is very noticeable when in flower over large areas. FRUIT: Pods, usually straight to 15 cm, rough brown, thin, so seeds inside are visible, splits open easily on the tree.

Propagation

Seedlings, direct sowing at site.

Seed

7,000–9,000 seed per kg.

Treatment: Immerse in hot water, allow to cool and soak for 24 hours.

Storage: Seed stores well.

Management

Fairly fast growing. Coppicing. First height pruning and stem reduction helps to improve the stalk.

Remarks

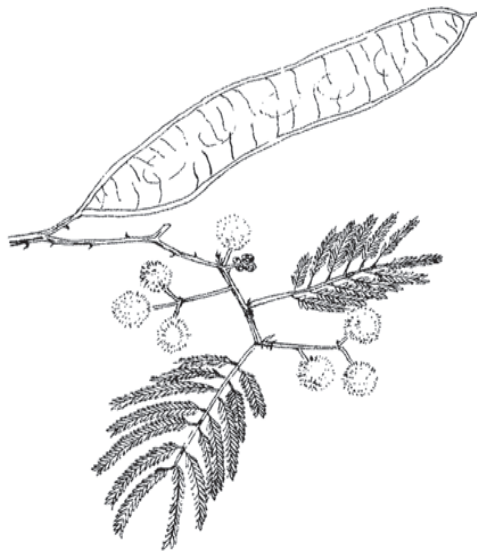
Can be a troublesome weed in pasture. It commonly regenerates even after burning and clearing. However, it is a good fodder to fatten goats and cattle, which eat the young pods and leaves.



Photo: Patrick Maundu



Photo: Patrick Maundu



Acacia bussei

Fabaceae

Indigenous

Am: *Girar*

Or: *Hallo*

Sm: *Galo, Galool*

Tg: *Gumero*

Ecology

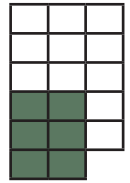
Found in deciduous bushland and dry scrub of the Dry and Moist Bereha, Kolla and Weyna Dega agroclimatic zones of Bale, Sidamo and Harerge regions, 300-1800 m. Occasionally found in Bereha zones also.

Uses

Firewood, charcoal, tannin (bark).

Description

Usually a small tree 3–10 m high, often branching from the base or from a trunk and with a flat top. BARK: Rough brown-black; young branches grey-purple, sometimes hairy. THORNS: Grey, straight to 9 cm. Some are paler, white and swollen, others with a narrow stalk below the swelling. LEAVES: Compound, 2–8 pairs of pinnae on a short stalk, leaflets tiny. FLOWERS: Cream, on spikes to 5 cm. FRUIT: Pods, brown and straight, short and oblong, about 6 cm, split open to set free very small flat seeds.



Propagation

Seedlings.

Seed

Treatment: Soak the seeds in cold water overnight.

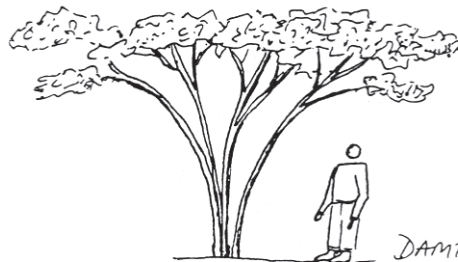
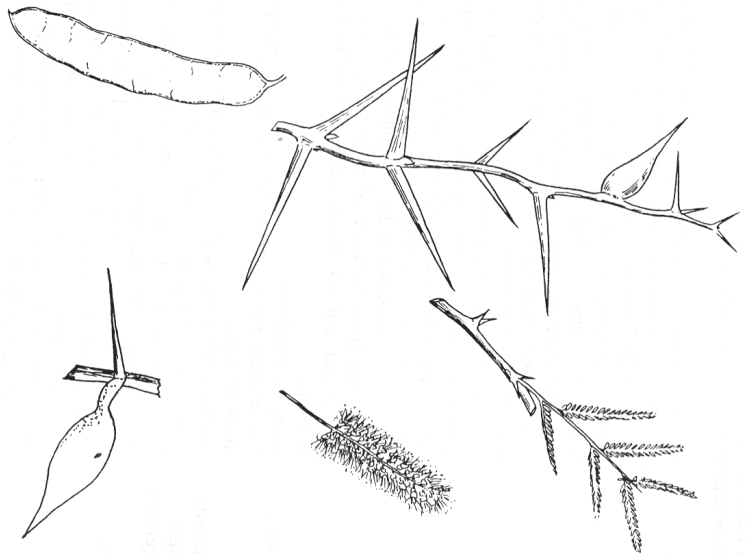
Storage: Stores well.

Management

Coppicing, pruning.

Remarks

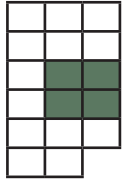
A low altitude dryland tree.



Acacia decurrens

(*Racosperma decurrens*)

Fabaceae



S.E. Australia

Ag: *Yeferenj Tsatsi*

Am: *Akacha, Mimosa*

Eng: *Green wattle, King wattle, Sydney black wattle*

Ecology

This species grows naturally in lower mountain valleys south of Sydney, Australia and has been widely introduced elsewhere. In Ethiopia, it is cultivated in Wolega and Shoa regions above 1,000 m. It grows well in Moist and Wet Weyna Dega and Dega agroclimatic zones, 1,600–2,500 m.

Uses

Firewood, charcoal, poles, posts, forage (pods), bee forage, shade, ornamental, nitrogen fixation, soil conservation, windbreak, tannin (bark), live fence.

Description

A beautiful tree or shrub with strong upright growth, 6–12 m or more, the young green branchlets quite angular with wing-like ridges. LEAVES: Feathery, compound with 8–15 pairs of pinnae and very many narrow leaflets 6–12 mm long. FLOWERS: Crowded in bright golden-yellow heads. FRUIT: Thin pods, brown–dark brown, breaking open one side only, jointed but not so much narrowed between seeds as *A. mearnsii*.

Propagation

Seedlings, direct sowing at site.

Seed

40,000–70,000 seed per kg; 50–70% germination in 15–20 days.

Treatment: Immerse in boiling water, allow to cool and soak for 24 hours.

Storage: Will store many years in a cool dry place.

Management

Seedlings should spend 7–8 months in the nursery before planting out. Will regenerate through coppicing and also by seeds germinating naturally after exposure to light fire.

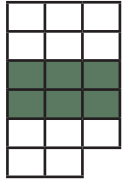
Remarks

The species is closely related to, and often confused with, *A. mearnsii* and *A. dealbata* (blue wattle). Although the tannin from the bark is of good quality, special processes are needed to remove undesirable colouring substances. This plant may become a weed, spreading rapidly by seed in good conditions. In Ethiopian conditions, it has great potential for poles and firewood. Best grown in woodlots and can be used to stabilize soil.



Acacia lahai

Fabaceae



Indigenous

- Ag:** *Tsivi*
Am: *Wittie, Cheba*
Eng: *Red thorn acacia*
Gm: *Qeretor*
Or: *Burquqge, Derot, Lafto, Sondi, Garbi*
Tg: *Lahay*
Wt: *Guganta*

Ecology

An upland acacia found in Uganda, Ethiopia, Eritrea, Kenya and Tanzania in wooded grassland and woodland of cool, moist areas, in Ethiopia preferring Moist and Wet Weyna Dega and Dega agroclimatic zones of western Tigray, western Welo, Gonder, Gojam, Shoa, Wolega, Harerge and Kefa regions, at high altitudes, 1,700–2,600 m.

Uses

Firewood, charcoal, timber (heavy construction, bridges), posts, medicine (bark), nitrogen fixation, shade, dye (bark).

Description

The dark trunk holds up a very flat-topped tree to 15 m. **BARK:** Grey to dark brown, rough, grooved, branchlets brown-purple, hairy. **THORNS:** Usually straight, grey-brown, small to 7 cm. **LEAVES:** Compound, leaf stalk 2–8 cm with 6–15 pairs of pinnae, leaflets tiny, pointed. **FLOWERS:** In cream-yellow spikes to 7 cm, no stalk, flowering branchlets covered with red gland dots. **FRUIT:** Short pods, straight or curved, up to 7 cm by 3 cm wide, shiny brown, splitting on the tree to set free seed.

Propagation

Seedlings, direct sowing at site, wildings.

Seed

Many seeds are damaged by insects while still in their pods. These can be separated from good seeds by immersion in water; the bad seeds float. Around 4,000 seed per kg.

Treatment: Immerse in hot water, allow to cool and soak for 24 hours before sowing to break seed dormancy. Alternatively nick seed coat.

Storage: Seed can be stored for long periods. Add ash to reduce insect damage.

Management

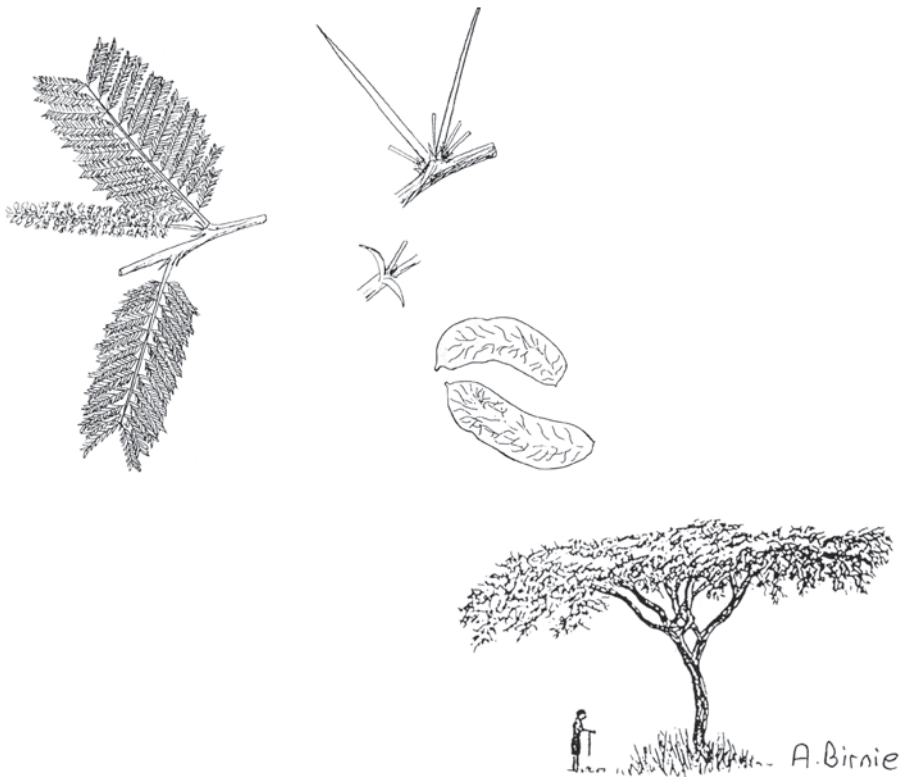
Lopping. Leave scattered trees to provide some shade in pastures.

Remarks

The tree has a broad canopy and is often left in wheat and barley fields for shade. Bark crushed in water can be sprinkled on hot pots to colour them red. In herbal medicine, the bark is used to treat skin eruptions and for clearing toxemia.



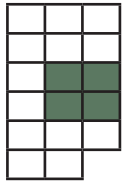
Photo: Patrick Maundu



Acacia mearnsii

(*Racosperma mearnsii*)

Fabaceae



Australia

Am: *Mimosa*

Eng: *Black wattle*

Ecology

A small tree native to Australia, where it grows from southern New South Wales to Tasmania. Introduced worldwide and now found both in temperate regions and in cool tropical highlands. In Ethiopia it performs well in Moist and Wet Weyna Dega and Dega agroclimatic zones.

Uses

Firewood, charcoal, poles, posts, medicine, bee forage, ornamental, nitrogen fixation, soil conservation, windbreak, fibre, tannin.

Description

An unarmed shrub or tree, 2–15 m, the trunk providing straight poles in close-planted plantations. Sometimes leans over due to the shallow root system. **BARK:** Smooth, green at first, later black, fissured with resinous gum when cut. **LEAVES:** Compound, feathery dull green, leaf stalk to 12 cm and up to 21 pairs of pinnae, leaflets tiny. **FLOWERS:** Many pale yellow rounded flower heads on a branched stalk, very fragrant. **FRUIT:** Numerous dull brown pods with 3–12 joints, straight or bent. Sections break up and contain the small black seeds.

Propagation

Seedlings, direct sowing at site.

Seed

50,000–85,000 seed per kg; germination 50–80 %.

Treatment: Immerse seed in hot water, allow to cool and soak for 24 hours before sowing to break dormancy. Burning a thin layer of dry twigs with mature pods spread on an area will usually result in profuse natural regeneration.

Storage: Seed can be stored for long periods.

Management

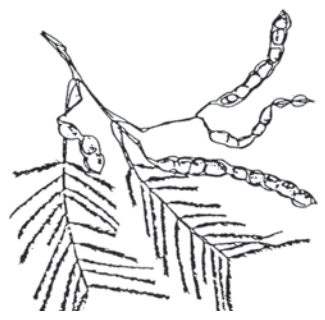
Thin if established by direct sowing and the germination was profuse.

Remarks

It is the most widely used tree crop for high-quality tannin. Fast growing but short lived; a tree for woodlots. Potentially a weed on farmland and can be difficult to eradicate. It should not be intercropped as it competes with crops. Crops may also not do well in soils previously planted to black wattle.



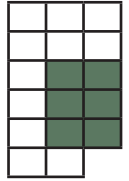
Photo: Patrick Maundu



Acacia melanoxylon

(*Racosperma melanoxylon*)

Fabaceae



Southern and western Australia,

Tasmania

Am: *Omedla*

Eng: *Australian blackwood*

Ecology

One of the several Australian Acacia species introduced to Ethiopia. This species has been planted in cooler and wetter upland areas, Moist and Wet Kolla Weyna Dega and Dega agroclimatic zones.

Uses

Firewood, charcoal, timber (light construction, plywood, flooring), fence posts, shade, ornamental, windbreak, gum, and tannery.

Description

A tall conical timber tree that grows to 35 m. BARK: Dark grey, much fissured. LEAVES: Dense grey-green, the very first leaves have feathery leaflets, but mature leaves are flat, leathery leaf stalks, slightly curved, to 10 cm long. FLOWERS: Creamy white in small round heads on a branched stalk. PODS: Curved, twisted and about 12 cm in length with hanging shiny black seeds surrounded by a soft orange aril.

Propagation

Seedlings.

Seed

About 150,000 seed per kg.

Treatment: Immerse in boiling water, allow to cool and soak for 24 hours. Germination rate: 55–90%.

Storage: Can be stored.

Management

Lopping for firewood, otherwise silvicultural management of timber stands.

Remarks

A very fast-growing tree producing hard and valuable timber.



Acacia nilotica

Fabaceae

Indigenous

Agn: *Alaro*

Am: *Cheba*

Br: *Burguge*

Eng: *Egyptian thorn, Scented pod acacia*

Nur: *Lor*

Or: *Burquge, Kasale*

Sh: *Aflo*

Sm: *Galol, Marab, Tuwer*

Tg: *Chea, Gered chea*

Ecology

Distributed from India to North Africa and south to South Africa and Namibia. Common in arid and semi-arid areas in Africa. It occurs in woodlands and scrub in Gamo Gofa, Kefa, Sidamo, Shoa, Arsi, and Harerge regions in Dry and Moist Kolla and Bereha agroclimatic zones, 600–1,700 m. Subspecies *indica*, though native to India is cultivated in the Afar Plains, Shoa and Harerge regions.

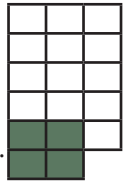
Uses

Firewood, charcoal, poles, tool handles, carving, medicine (inner bark, roots, leaves), fodder (leaves, pods), bee forage, nitrogen fixation, soil conservation (river banks), windbreak, gum, dye (seeds), live fence, tooth brushes.

Description

A large shrub or small tree, usually 2–6 m but can reach 14 m, branching from the base to make a rounded crown. **BARK:** On trunk rough brown-black, fissured. Young shoots often red-brown, hairy. **THORNS:** Thin, grey-white to 10 cm, often shorter, may point backwards. **LEAVES:**

Compound, 2–11 pairs of pinnae on leaf stalk 3–6 cm, new growth in the dry season. **FLOWERS:** Fragrant, bright yellow round heads. **FRUIT:** Pods, vary in different subspecies, straight or curved to 17 cm, fleshy and thick, hairy or not, narrowed between seeds or not. Seeds seen as distinct raised bumps in the pod, set free when pods rot on the ground.



Propagation

Seedlings, direct sowing at site.

Seed

Beetles attack the seed while still in the pod. Separate by immersion in water; bad seeds float. Germination rate 60–90%; 7,000–11,000 seed per kg.

Treatment: Not necessary for fresh seed. Nick stored seed or soak in cold water for 24 hours.

Storage: Seed stores well.

Management

Fast growing on good sites; lopping, pollarding.

Remarks

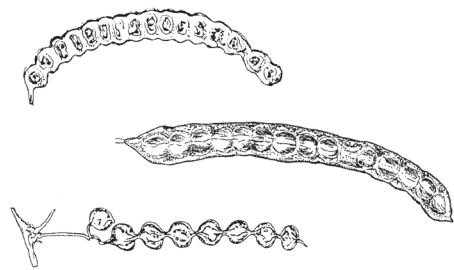
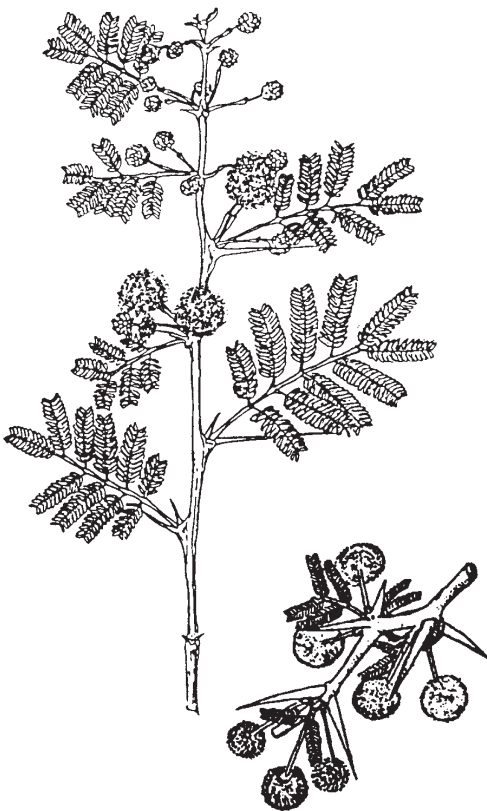
Five subspecies are recognized in Ethiopia. The pods of subspecies *indica* are hairy, grey-white, “necklace like” and constricted, making the seeds appear separated along the pod. Young plants do not compete well, so weeding is necessary. Wood is tough and termite resistant. The shrub can form thickets. This is not a preferred forage or bee tree if other browse or acacia blossom is available.



Photo: Patrick Maundu



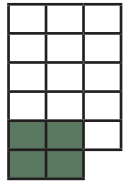
Photo: Patrick Maundu



Acacia oerfota

(*A. nubica*)

Fabaceae



Indigenous

Ag: *Chellegama*

Or: *Ajo, Wangay, Wanga*

Sm: *Gumero, Gumara, Gummr, Gomur*

Tg: *Gamorot, Laud, Leaw, Ood*

Ecology

Commonly occurs in deciduous bushland and semi-desert scrub from Egypt, the Sudan and Eritrea and into Kenya. In Ethiopia it is mainly found in Dry and Moist Kolla and Bereha agroclimatic zones of Bale, Shoa, Harerge, Welo, the Afar plains, Tigray and Sidamo regions, 100–1,600 m.

Uses

Firewood, poles (hut frames), medicine (bark), fodder (leaves, twigs, pods), fibre (bark).

Description

A shrub to 5 m, branching from the base, irregular or flat topped. BARK: Grey-white but a green underbark with an unpleasant smell if cut. THORNS: Short, conical and thick about 2 cm, often pointing backwards. LEAVES: Compound, leaf stalk only 2–4 cm with 2–8 pairs of pinnae, all parts sometimes hairy. FLOWERS: Round, several together, white-cream-green, others pink-red. FRUIT: Pods usually straight, yellow-brown-grey, 6–13 cm, edge winged, the surface softly hairy. Pods break open to release small flat green-grey seeds.

Propagation

Seedlings

Seed

Treatment: Soak in cold water overnight.

Storage: Can be stored.

Management

Coppicing, pollarding, lopping.

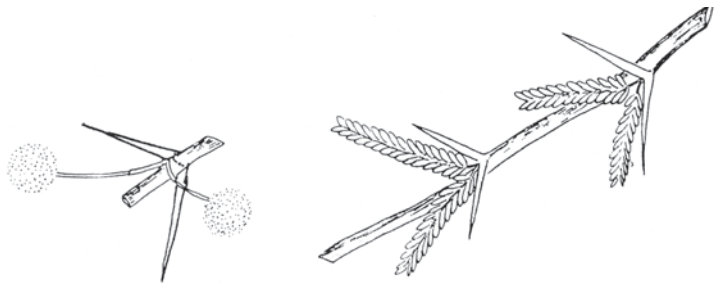
First height pruning will ease movement of people and livestock. It improves the stalk quality.

Remarks

A bark extract is used to treat rheumatism.



Photo: Patrick Maundu



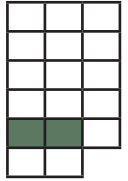
JAMTEW T.



A.B.

Acacia polyacantha subsp. *campylacantha*

Fabaceae



Indigenous

Am: *Gmarda*

Eng: *Falcon's-claw acacia*

Tg: *Gumero*

Ecology

A widespread acacia found from India to tropical Africa. In Ethiopia, commonly found in wooded grassland, deciduous woodland and bushland and riverine forests in Dry and Moist Kolla agroclimatic zones of Shoa, Gonder, Gojam, western Tigray, Ilubabor, Kefa, Gamo Gofa and Sidamo regions, 500–1,600 m. May indicate fertile soil and groundwater but can also grow in stony soil.

Uses

Firewood, charcoal, timber, posts, farm tools, medicine (leaves, roots), fodder (leaves, pods), ornamental, nitrogen fixation, soil improvement, live fence.

Description

A tree to 25 m with feathery foliage but an open canopy often with a flattened but spreading crown. BARK: Yellow-brown, flaking, later grey-brown, fissured. THORNS: Brown, black tips, usually less than 1 cm and hooked. LEAVES: Compound, 13–40 pairs of pinnae, leaflets very small and narrow, leaf stalk hairy with glands, to 20 cm. FLOWERS: Large, cream-white spikes, to 12 cm, 2 or 3 together, fragrant. FRUIT: Brown smooth pod, tip pointed, flat to 18 cm, splitting to set free seed.

Propagation

Seedlings, wildings, direct sowing at site.

Seed

Seeds prolifically. 14,000–16,000 seed per kg.

Treatment: No need.

Storage: Seed can be stored if kept cool, dry and insect-free.

Management

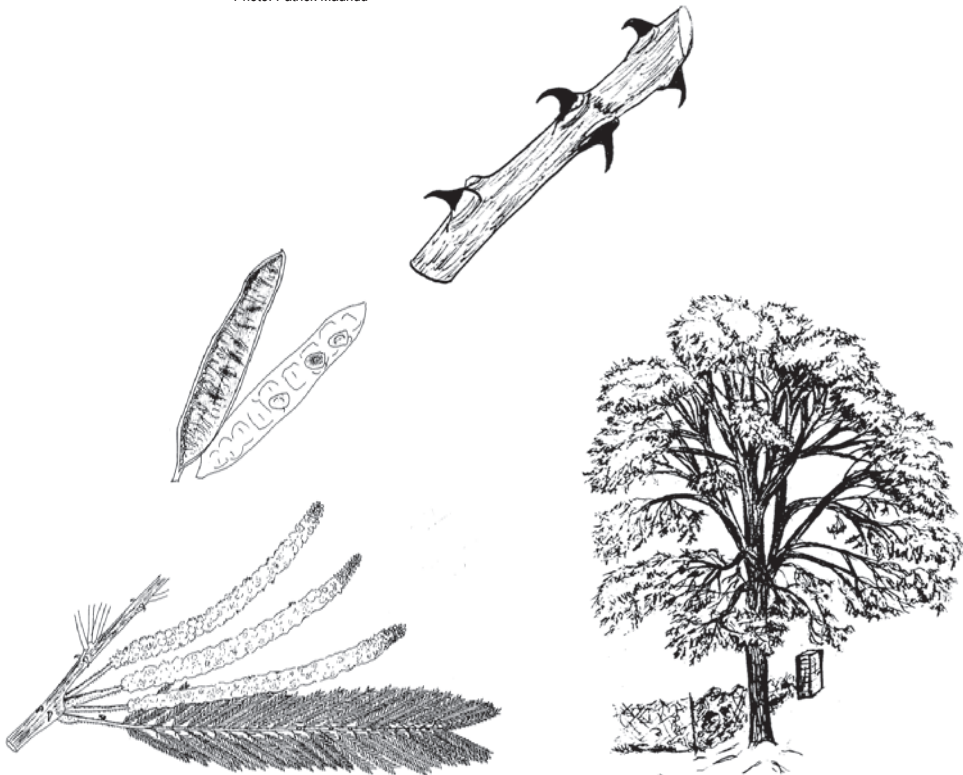
Fast growing on good sites; pollarding, coppicing.

Remarks

The wood is termite resistant. The tree is host to many insects and pests.



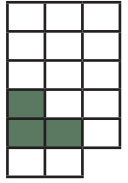
Photo: Patrick Maundu



Acacia saligna

(*Racosperma saligna*)

Fabaceae



Australia

Am: *Akacha saligna*

Eng: *Port Jackson willow, Weeping wattle, Willow wattle*

Or: *Akacha saligna*

Ecology

A thornless exotic tree or shrub introduced from south-west Australia. The species can grow in Dry and Moist Kolla and Dry Weyna Dega agroclimatic zones. It grows in many soils but does best in light to medium loams and well-drained soils. Drought hardy.

Uses

Firewood, posts, shade, ornamental,, nitrogen fixation, soil conservation, soil improvement, windbreak, gum (food preservative), live fence.

Description

A shrub or leafy tree to 10 m. BARK: Smooth, grey-brown. LEAVES: Long and thin to 22 cm (feathery acacia-type leaves in seedlings in mature tree flattened leaf stalks become leaves looking similar to eucalyptus leaves). FLOWERS: Bright yellow, in small round heads. FRUIT: Thin pods, straight or curved to 15 cm, narrowed between seeds.

Propagation

Seedlings.

Seed

Germination rate: 55–90%. 14,000–80,000 seed per kg.

Treatment: Immerse in boiling water, allow to cool and soak for 24 hours.

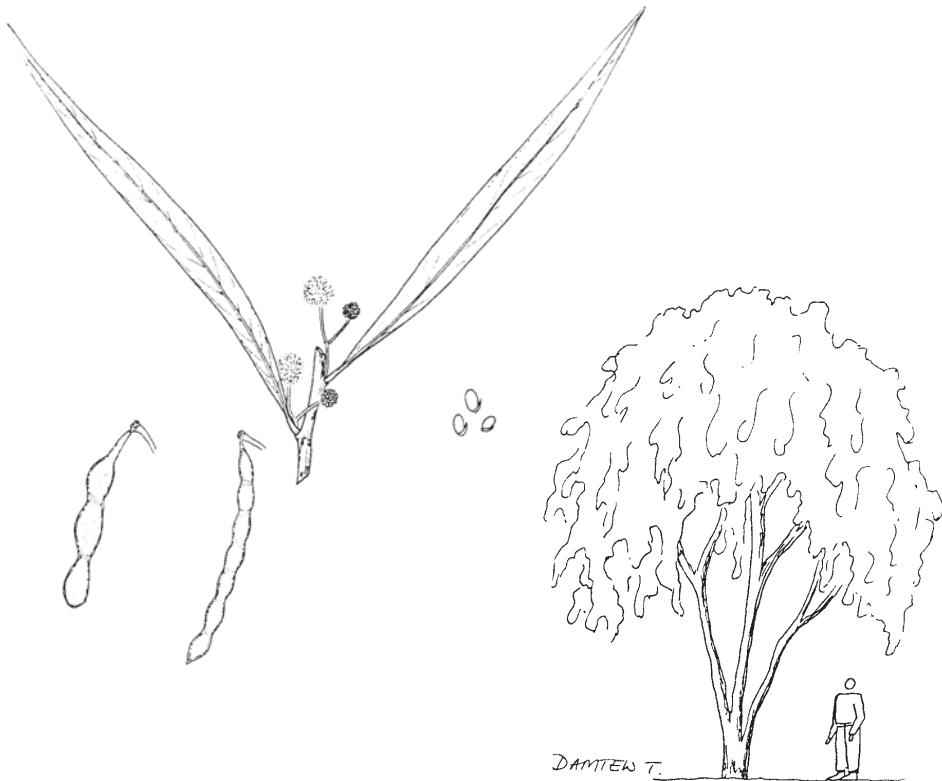
Storage: Can be kept for one or two years in a cool dry place.

Management

Coppicing, pollarding. Make sure that it is not planted in shallow soil. Orient planting line along wind direction to minimise wind-throw.

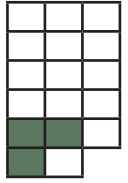
Remarks

The tree grows rapidly. Since it is hardy and regenerates easily, there is some danger that it could become a weed if grown on farmland. It has been used successfully to reclaim eroded land and prevent soil erosion on the sides of steep gullies. Livestock eat the leaves when there is little other feed available.



Acacia senegal

Fabaceae



Indigenous

Am: *Kontir, Sbansa-girar*
Eng: *Sudan Gum Arabic, Three-thorned acacia*
Ga: *Akersa*
Or: *Idado, Sabansa dima, Sapessa*
Sm: *Adad, Adad-meru, Agabo, Galol, Marah*
Tg: *Qentib, Qentiba*
Wt: *Tundukiyac*

Ecology

A common acacia in dry parts of Africa and Asia. Found from West Africa and North Africa, south to South Africa. In Ethiopia, common in Dry Bereha and Dry and Moist Kolla agroclimatic zones of the Afar plain, western Welo, Shoa, Bale, Arsi, Sidamo, Gamo Gofa, and Harerge; tolerates high daily temperatures and a long dry season. Prefers moist and well-drained soils. Widespread in dry scrub, wooded grassland, 300–1,700 m.

Uses

Firewood, charcoal, posts, poles, tools, handles, food (seed), medicine (decoctions from bark and roots), fodder (pods, leaves), soil conservation, soil improvement, high quality gum, dye (seeds), fish net (root fibers).

Description

A shrub or tree to 15 m, rounded, many low branches, or tall and thin. BARK: Variable, smooth or peeling yellow and papery from red-brown base. THORNS: Prickles in threes, the central one hooked downwards, the other two curved up, below each node, brown to black. LEAVES: Compound, usually hairy, only 3–6 pairs

of pinnae on a stalk to 7 cm, leaflets 8 – 18 pairs, narrow (7 x 2 mm), very small, grey-green. FLOWERS: Creamy spikes, one or more, 2–10 cm, fragrant, usually develop before the rainy season. FRUIT: Pods, variable, thin and flat, oblong to 14 cm, narrowing at both ends, grey-yellow becoming papery brown, veins clear, splitting to release seed.

Propagation

Seedlings, direct sowing at site.

Seed

Not a prolific seeder. Seed susceptible to beetle attack. Germination rate is low. 8,000–11,000 seed per kg.

Treatment: Nick seed or soak them in cold water for 24 hours.

Storage: Seed stores well in a cool, dry and insect-free place.

Management

Slow growing; needs weeding and protection from animals during early stages, lopping, coppicing.

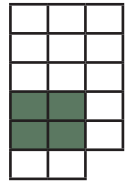
Remarks

Three subspecies are recognized in Ethiopia. Can be intercropped (e.g. with sorghum and millet). Gum arabic is traded commercially for use in dyeing, ink making and medicine. Production is best when the tree grows in poor soils.



Acacia seyal

Fabaceae



Indigenous

- Af:** *Adiquento, Makani*
Am: *Wachu*
Br: *Wocha-adi, Wacho dima*
Eng: *White-galled acacia, White whistling thorn*
Or: *Wosiya wajo, Wakko-dimo, Wajjo, Wajji, Wachu*
Sh: *Aflo; Sm: Fulay*
Tg: *Qeyeh-chea, Tseada-chea*
Wt: *Fundukiya*

Ecology

A typical savanna acacia. Widespread in semi-arid areas of Africa from Senegal to Egypt and south to Malawi and Zimbabwe. In Ethiopia, it is found in seasonally flooded black-cotton soil, in river valleys and wooded grassland of Dry and Moist Kolla and Weyna Dega agroclimatic zones in Gonder, Gojam, Shoa, Arsi, Harerge, Ilubabor, Kefa, Sidamo, western Tigray and western Welo regions, 500–2,100 m.

Uses

Firewood, charcoal, poles, posts, medicine (bark, gum), fodder (leaves), bee forage, shade, nitrogen fixation, soil conservation, windbreak, gum, tannin (bark), dye (bark).

Description

A small to medium sized tree, up to 9 m, rather thin with layered branches or small, more rounded. **BARK:** Distinctive powdery, white to pale green or orange-red, often peeling to reveal greenish underbark. **THORNS:** Wide-angled pairs of strong white thorns to 8 cm. In subspecies *fistula* the bases of a pair swollen to form round ant galls. **LEAVES:** Compound, 3–7 pairs

of pinnae, raised glands just visible on leaf stalk. **FLOWERS:** Fragrant, bright yellow in round heads over 1 cm across, several beside the thorns. **FRUIT:** Bunches of narrow, curved pods 7–20 cm, shiny light brown, narrowed between seeds, splitting open on the tree.

Propagation

Seedlings, wildings.

Seed

About 20,000 seed per kg.

Treatment: Not necessary for fresh seed. Nick stored seed or soak in cold water for 24 hours.

Storage: Seed can be stored for long periods if kept cool, dry and insect free.

Management

Medium to fast growing; lopping, pollarding, coppicing.

Remarks

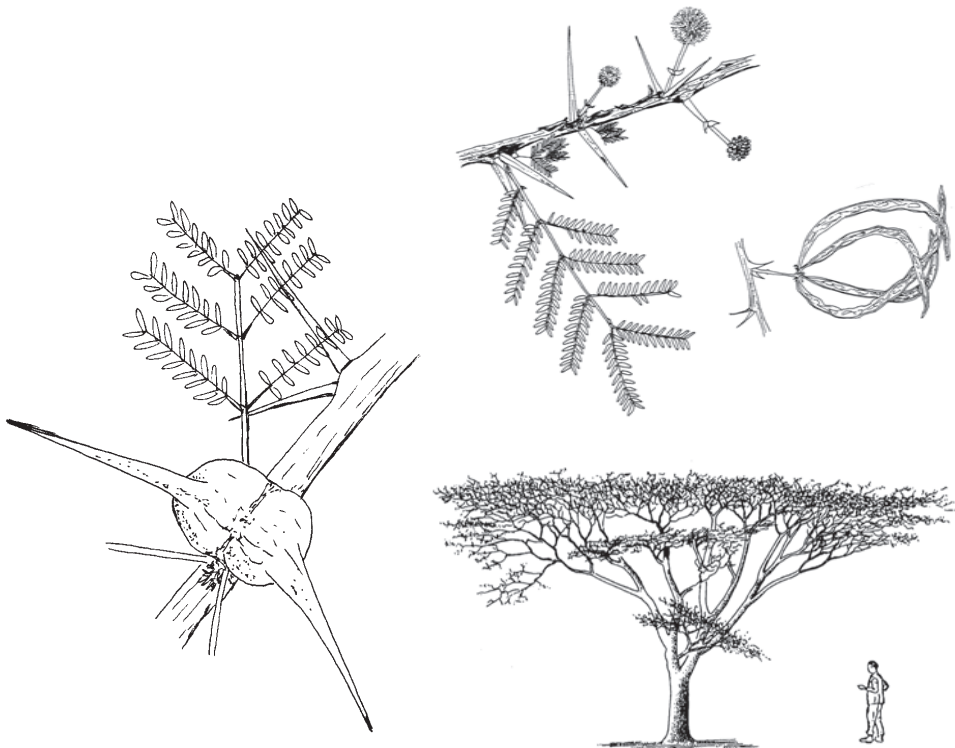
Two varieties are recognized in Ethiopia. It is recommended for planting along stream banks. The Borena people extract a red dye from the bark. In western Ethiopia, the tree is widely used to shade coffee. The gum is not as good as that of *Acacia senegal*.



Photo: Patrick Maundu

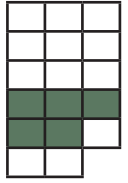


Photo: Patrick Maundu



Acacia sieberiana

Fabaceae



Indigenous

Gr: *Deweni-guna*

Or: *Burquge, Gurha, Lafto, Lafto-adi*

Sm: *Jerin, Cherin*

Tg: *Nefacia, Tseada-chea*

Wt: *Gara, Pulliesa*

Ecology

A large tree widespread in Africa with several varieties, usually found in deciduous woodlands and along margins of rivers. In Ethiopia, it is mainly found in Moist, Dry and Wet Weyna Dega and Dry and Moist Kolla agroclimatic zones of Tigray, Gonder, western Welo, Shoa, Wolega, Ilubabor, Kefa and Sidamo regions, 500–2,200 m.

Uses

Firewood, charcoal, timber (local construction), medicine (bark, roots), fodder (leaves, fruit), tool handles, fences (cut branches), gum.

Description

A tree up to 18 m, sometimes with a wide bole, the crown a shady spreading umbrella. BARK: Grey-brown, rough or papery; younger branches yellow-brown, flaking or densely covered with pale hairs. THORNS: Grey-white, straight to 9 cm, sometimes absent on parts of the tree. LEAVES: Hairy or not, 8–35 pairs of pinnae on a stalk to 13 cm, leaflets tiny. FLOWERS: Cream-white in round heads, about 1 cm across, fragrant, hairy or not. FRUIT: Large and woody, to 21 x 3 cm, slightly curved. The shiny brown pods dry out and break open on the ground to set free hard flat seeds about 1 cm long.

Propagation

Seedlings.

Seed

About 3,250 seed per kg.

Treatment: Soak the seed in warm water for 3-4 hours after pouring hot water for one minute.

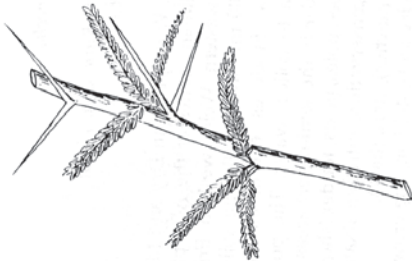
Storage: Can be stored.

Management:

Lopping, pollarding, coppicing.

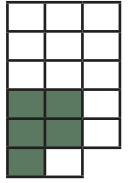
Remarks

Two varieties are recognized in Ethiopia. The wood is liable to borer attack but used to make farm tools and mills and presses. The gum is clear and of a good quality. The foliage and fruit are good fodder.



Acacia tortilis

Fabaceae



Indigenous

- Af:** *Bebbey*
Am: *Deweni garar*
Br: *Dadach*
Eng: *Umbrella thorn*
Ga: *Shera*
Or: *Lotoba, Tedecha*
Sh: *Tsi*
Sm: *Abak, Akab, Kura, Ora, Timad*
Tg: *Akiba, Aqba*

Ecology

A common acacia in most of dry Africa from North and West Africa to South Africa. Widespread in Dry Bereha and Dry and Moist Kolla and Weyna Dega agroclimatic zones of the Afar plain, Bale, Arsi, Harerge, Shoa, western Welo and western Tigray, 300–1,900 m. Favours alkaline soils and can grow in shallow soils. It produces enormous deep roots that penetrate a wide area to collect water.

Uses

Firewood, charcoal, timber, poles, posts, fodder (shoots, leaves, pods), bee forage, shade (livestock), nitrogen fixation, soil conservation, fibre (bark), fences (cut branches).

Description

A characteristic tree of drylands, 4–21 m, the crown layered, flat and spreading or rounded, sometimes a shrub. **BARK:** Grey-brown-black and fissured when mature. **THORNS:** Two kinds: small hooked and long, straight white, sometimes mixed pairs all on one stem. **LEAVES:** 2–10 pairs of pinnae on a short stalk only 2–4

cm. **FLOWERS:** Fragrant, cream, in round heads. **FRUIT:** pale-yellow-brown pods, each containing up to 10 brown seeds, hang in dense bunches spirally twisted, sometimes in rings.

Propagation

Seedlings, wildings.

Seed

Slow germination, low germination rate. 12,000–31,000 seed per kg. Beetle infestation often lowers germination rate.

Treatment: Seed is very hard. Pour boiling water over seed, allow to cool and soak for 24 hours.

Storage: Seed can be stored for a very long period without losing viability if insect damage can be prevented.

Management

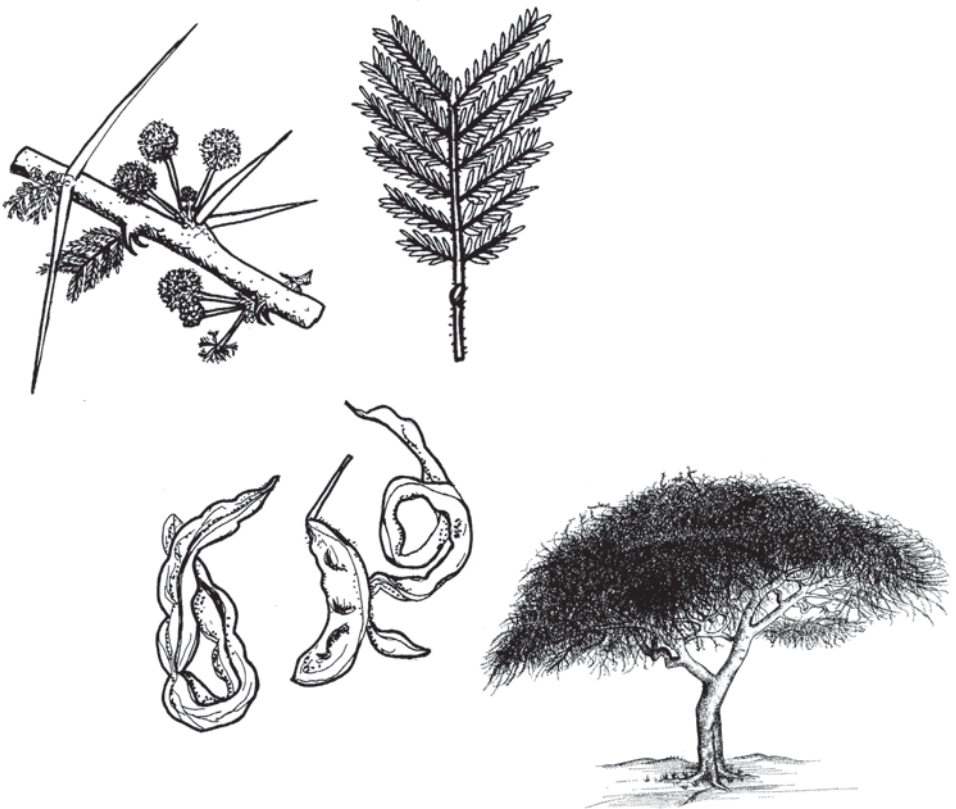
Slow growing but if well managed, it grows relatively fast in dry sandy soils. Protect young plants from goats. Lopping.

Remarks

Often indicates the tree limit into desert areas. It can be left to grow on pasture or crop land. The pods are an important source of fodder in the semi-desert areas of Africa.

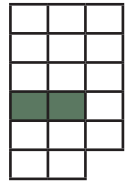


Photo: Patrick Maundu



Acokanthera schimperi

Apocynaceae



Indigenous

Ag: *Bisira*

Eng: *Poison-arrow tree*

Am: *Gararu, Lemem, Merenz*

Or: *Qarachu, Qararo, Qararu*

Sm: *Wagireadad*

Tg: *Mebetti*

Wt: *Ladia*

Ecology

Widespread in East Africa and south to Zimbabwe, Mozambique, Swaziland and north-eastern South Africa. In Ethiopia it is a tree of dry woodland, thickets and grasslands in Dry and Moist Weyna Dega agroclimatic zones in nearly all regions. It prefers rich well-drained forest soil, but also grows on black-cotton and poor soils in dry areas, 1,000–2,200 m.

Uses

Spear shafts, medicine (infusion of the roots), shade (livestock), ornamental, arrow poison (prepared from the white latex from roots, leaf or bark).

Description

A dense evergreen or small rounded tree, with short bole to 5 m, sometimes 10 m. BARK: Dark brown, grooved with age, young twigs flattened. LEAVES: Opposite, dark shiny green above, stiff and leathery, oval to rounded 4–7 cm, tip pointed and sharp. FLOWERS: Appearing with early rains, in dense, fragrant clusters, almost stalkless, white-pink, tubular. FRUIT: Oval berries to 1.5 cm, yellow to purple.

Propagation

Seedlings.

Seed

Produces much seed, but germination is sporadic, 400—450 seed per kg.

Treatment: Soak in cold water to separate the fleshy part of the fruit from the seeds.

Storage: Seed have high natural water content and therefore should not be stored.

Management

Slow growing. Coppicing.

Remarks

Children eat the ripe purple fruit, as do birds and monkeys. Fruit should only be eaten when fully ripe, otherwise the plant is poisonous.

Traditionally, some families, unaware the plant is poisonous, add a pinch of *Acokanthera* leaves into a local beer (“Tela” in Amharic) to make the drink strong and clear.



Photo: Patrick Maundu



Photo: Patrick Maundu



Adansonia digitata

Bombacaceae

Indigenous

Am: *Bamba*

Eng: *Baobab*

Or: *Ba'obaab, Humaar*

Sm: *Yag*

Gr: *Dima*

Tg: *Hermer banba, Kommer, Momret*

Ecology

A conspicuous and well-known tree in tropical Africa south of the Sahara. In Ethiopia it grows in Bereha and Dry Kolla agroclimatic zones of Tigray and Gonder (common in Tekeze Valley), growing best in moist and well-drained soils. It is deep rooted, drought hardy, and prefers a high water table, 500–1,400 m.

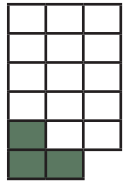
Uses

Fuel (dry fruit cases), carving (utensils, floats, light canoes), food (shoots, leaves, seeds), drink (fruit pulp is high in vitamin C), medicine (fruit pulp, bark, leaves), fodder (leaves, shoots, fruits), bee forage, shade, ornamental, mulch, fibre (young bark, roots), tannin (bark), red dye (roots), water containers, dishes (fruit cases), storage (hollow trees).

Description

A deciduous tree with a thick trunk, diameter may reach 8 m, girth 20 m, and height 25 m. Bare for up to 9 months, the stiff bare branches resemble roots (hence the name “upside-down tree”). **BARK:** Smooth, grey to 10 cm thick, young spongy wood can hold much water. **LEAVES:** Seedlings have simple leaves, mature leaves with up to 9 leaflets. **FLOWERS:** Large and white, opening at night, the unpleasant

smelling nectar attracts pollinating fruit bats. **FRUIT:** Big (15–22 cm), hairy, yellow-brown capsules, hanging on long stalks on the bare tree. Many seeds, within white-pink, dry, edible pulp that contains tartaric acid.



Propagation

Seedlings.

Seed

Seed collection is done in September to October. Seed germination is sporadic in up to three months, but good and well-treated seeds can germinate in 30–50 days. 1,500–2,500 seed per kg.

Treatment: Nick or pour boiling water over seed, remove at once and cool to room temperature. Naturally the seed may take several years to germinate and be induced by fire. Passing through the digestive tract of large mammals such as elephants also breaks seed dormancy.

Storage: Seed can be stored for a long time if kept cool and dry.

Management

The tree is fairly fast growing when young if undisturbed, slow growing when old. Lopping.

Remarks

The baobab is one of the longest living trees — up to 3,000 years. Where baobabs are common, as in the Sahel, every part of the tree is used. Hollow trunks can store large quantities of water. The soft wet wood is hard to carve and fire resistant. The inner bark of young trees is cut to extract strong durable fibres used to make baskets and rope. The bark regenerates and can be cut again in a few years.



Photo: Patrick Maundu



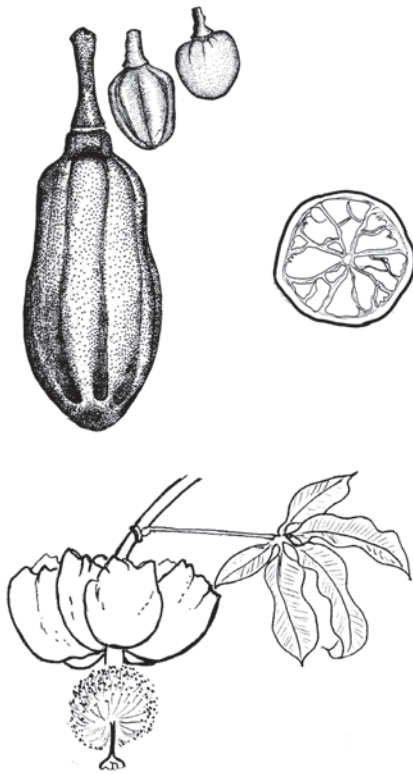
Photo: Maryam Imbuni



Photo: Patrick Maundu

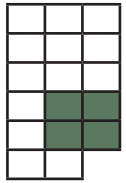


Photo: Maryam Imbuni



Albizia grandibracteata

Fabaceae



Indigenous

Eng: *Large-leaved albizia*

Gm: *Sat, Serri*

Or: *Shawo, Kofale, Alele, Halele, Emela, Elele*

Ecology

Grows in rain forest and riverine forest. Prefers Moist and Wet Kolla and Weyna Dega agroclimatic zones in Ilubabor, Kefa, Wolega, Shoa, and Sidamo regions, 1,200–1,700 m.

Uses

Firewood, farm tools, medicine (infusion from the roots), bee forage, ornamental, mulch, nitrogen fixation, soap (bark).

Description

A medium-sized deciduous tree with a straight trunk to 20 m and a flattened or layered crown. BARK: Fairly smooth, pale grey-brown. LEAVES: Compound, on a stalk to 9 cm with only 2–3 pairs of pinnae and 3–6 pairs of leaflets, pink-red when young. The smallest leaflets at the base, the longest at the tip reach 7 cm, rather curved and pointed. At the base of young leaves are rounded pink-green leafy stipules, to 2 cm long. FLOWERS: In colourful hemispherical heads, mostly pink with dark red anthers seen well beyond the petals. FRUIT: Flat, pale brown pods, narrow, to 15 cm with a small pointed tip. Dense papery bunches can be seen on bare trees, 5–8 seeds are set free when the pods split open.

Propagation

Seedlings, wildings.

Seed

Treatment: Not necessary for fresh seed, soaking in hot or cold water may enhance germination of stored seed.

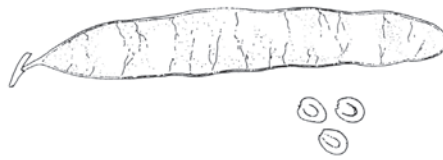
Storage: Can be stored if insect attack is prevented.

Management

Fast growing on well-watered forest soils, produces root suckers from exposed surface roots.

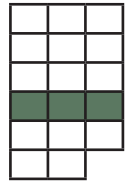
Remarks

A striking tree when in flower. The pale wood, although easily worked, is not very durable and is attacked by insects. In other properties it is similar to *A. gummifera*. The name “grandibracteata” refers to the “large bracts” of the young leaves.



Albizia gummifera

Fabaceae



Indigenous

Ag: *Kansin*

Am: *Sesa*

Eng: *Peacock flower*

Gmz: *Tehga*

Or: *Ambabessa, Chatto, Gorbe, Karchofe, Muka-
arba, Sankile, Vungo, Sasa*

Sh: *Taga*

Wt: *Chata*

Ecology

A forest tree found from West Africa east to Ethiopia and south to Zimbabwe, Mozambique and Madagascar. A deciduous forest tree common in Dry, Moist and Wet Weyna Dega agroclimatic zones of Gojam, Wolega, Sidamo, Ilubabor and Kefa regions, 1,400–2500 m.

Uses

Firewood, timber (general purpose), utensils (mortars, water troughs), medicine (roots, bark), fodder (leaves), bee forage, shade, ornamental, nitrogen fixation, soil conservation.

Description

A large tree, branches ascending to a flat top, about 15 m high, trunk up to 75 cm in diameter in old forest trees. **BARK:** Grey and smooth. **LEAVES:** Shiny, dark green leaflets, almost rectangular, midrib diagonal, one outer corner rounded. **FLOWERS:** White-pink clusters, long stamens hang out, tips crimson. **FRUIT:** Very many papery pods in bundles, shiny brown, flat with raised edges, 20 cm long and up to 3 cm wide, often shorter. The thin pod bulges over 8–14 flat, brown seeds.

Propagation

Seedlings.

Seed

10,000–14,000 seed per kg.

Treatment: Fresh seed requires no pre-treatment. Nick or soak stored seed in cold water for 24 hours.

Storage: Seed can be stored up to a year before losing viability but very susceptible to insect attack. Seed should be collected while still on the tree since the seed are often damaged by insects while still in the pod.

Management

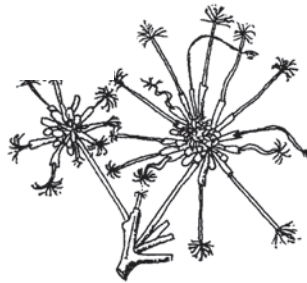
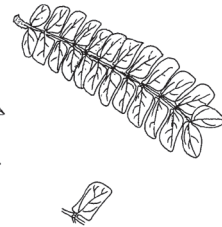
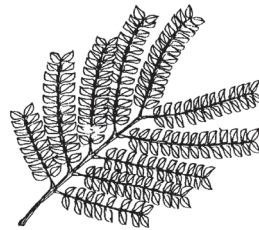
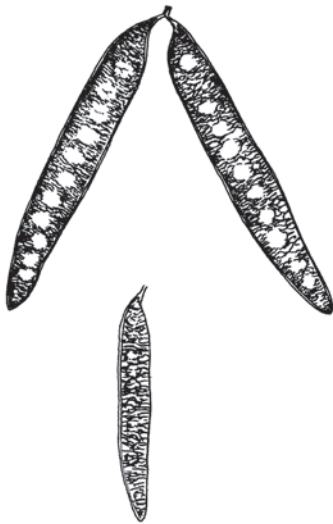
Lopping, coppicing while young. Fairly fast growing.

Remarks

The most widespread albizia in Ethiopia. Leaves hasten ripening of bananas. The most appropriate tree for shading coffee in plantations up to 2,500 m. Despite its name, the tree gives only small amounts of gum when the smooth bark is cut. Bees are often found inhabiting holes in the trunk.

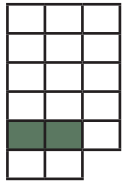


Photo: Patrick Maundu



Albizia lebbek

Fabaceae



Tropical Asia (India, Burma, Andaman Islands)

Am: *Lebbek*

Eng: *East-Indian walnut, Siris tree, Woman's tongue*

Gm: *Yoke*

Wt: *Shasho*

Ecology

Commonly planted in the tropics as a shade tree and naturalized in parts of Africa and the Caribbean. Introduced into Ethiopia in the Dry and Moist Kolla agroclimatic zones for roadside plantation and shade, especially in Dire Dawa (Hararghe). It is becoming naturalized in Shoa and other lowland areas. Roots are near the surface, so requires a high water table. The shallow roots make it liable to fall in storms. Prefers black-cotton soil but will grow in a wide range of soils: acid, alkaline and saline.

Uses

Firewood, charcoal, poles, posts, timber (furniture, floors), medicine, fodder (leaves, pods), bee forage, shade, ornamental, mulch, nitrogen fixation, soil conservation, windbreak, tannin (bark), soap (bark).

Description

A deciduous tree which may reach 25 m, usually 8–14 m; trunk often short, crown low and spreading. **BARK:** Grey-violet with rusty-brown breathing pores. **LEAVES:** Compound, 2–4 pairs of pinnae, 3–11 pairs of leaflets, each oblong, tip rounded, usually 2–3 cm. **FLOWERS:** Green-yellow, fragrant brush heads on a stalk, short-lived.

FRUIT: Shiny yellow-brown pods in clusters decorate the tree for a long time, each pod up to 30 cm long, bulging over seeds, the seeds and pods “chatter” in the wind.

Propagation

Seedlings, direct sowing at site. It can be propagated by use of stump cuttings too.

Seed

Seed collection from January to March. Seeds prolifically and seed germination is good. 5,000-12,000 seed per kg.

Treatment: Immerse in hot water, allow to cool and soak for 24 hours.

Storage: Seed can be stored for a long time but prevent insect attack.

Management

Fast growing on good sites; lopping, pollarding, coppicing, pruning. Produces root suckers from exposed roots.

Remarks

Hard and heavy wood used for furniture. The tree is recommended in lowland areas to hold soil on stream banks and to mark farm boundaries.



Albizia lophantha

Fabaceae

Australia

Am: *Shifere*

Eng: *Spiked acacia, Crested wattle*

Ecology

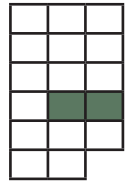
An exotic tree from western Australia planted as an ornamental in Addis Ababa (2,400 m), and Shoa, Harerge and Bale regions. It does best in the Moist and Wet Weyna Dega agroclimatic zones.

Uses

Firewood, fodder (leaves), bee forage, shade, ornamental, soil conservation, soil improvement, nitrogen fixation.

Description

A many-branched shrub or small graceful tree 4–15 m, with a straight trunk and large spreading crown, semi-deciduous. LEAVES: Compound, the leaf stalk to 20 cm with 6–12 pairs of pinnae and many leaflets. Each leaflet is narrow and pointed about 1 cm long, silky hairy below. Young leaves have brown hairs. FLOWERS: Differ from those of other *Albizia*. These are small and green-yellow on 1–3 short, dense spikes, to 8 cm, beside leaves. Many yellow anther filaments conspicuous, over 1 cm long. FRUIT: A narrow pod to 11 cm long, the edges thick, the tip with a distinct blunt point. The pod is swollen over the 8–11 seeds inside.



Propagation

Seedlings.

Seed

Treatment: Immerse in hot water, allow to cool and soak for 24 hours.

Storage: Stores well but susceptible to insect attack.

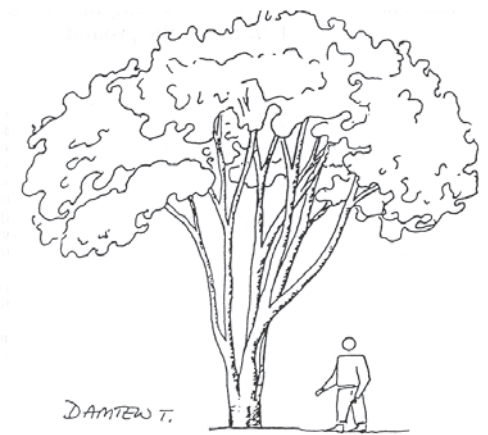
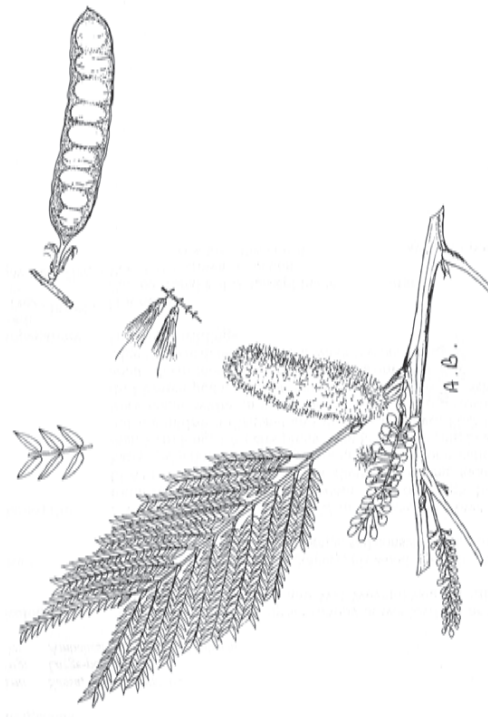
Management

A fast-growing but short-lived tree.

Pruning, lopping.

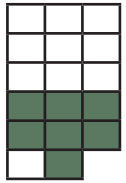
Remarks

It makes poor firewood but is a useful tree for reclaiming land because it grows fast, fast growing, relatively drought resistant and tolerates infertile and seasonally waterlogged soils. It may form dense stands along riverbanks, as in the Western Cape, South Africa.



Albizia malacophylla* var. *ugadensis

Fabaceae



Indigenous

Tg: *Chigoro, Hamaseran, Nfasha, Nfasia*

Ecology

Found in wooded grasslands and riverine forests of Moist Bereha, Dry, Moist and Wet Kolla and Weyna Dega agroclimatic zones in Wellega, Gambella, Ilubabor, Gonder and Gojam, 500—2,200 m.

Uses

Firewood, fodder (leaves), bee forage, shade, ornamental, nitrogen fixation, soil conservation, soil improvement.

Description

A tree that grows to a height of up to 15 m. **BARK:** Rough, young branchlets pubescent, densely grey to pale brown. **LEAVES:** pinnae, 2-8 pairs, leaflets 3 – 9 pairs, (-12), oblong elliptic in shape, mostly more than 15 x 10 mm, pubescent above, sparsely to densely pubescent below, apex rounded to slightly emarginated. **FLOWERS:** Sessile or on pedicels up to 0.75 mm long; calyx 3 – 5 mm long, more or less densely and shortly pubescent outside; corolla 5 – 7 mm long, pubescent; staminal tube not or rarely protruding beyond corolla; filaments white, about 2 – 2.5 cm long. **FRUIT:** in pods, oblong 10 – 21 x 2 – 4 cm, sub-glabrous, brown; seeds about 7 x 9 mm.

Propagation

Seedlings and wildings.

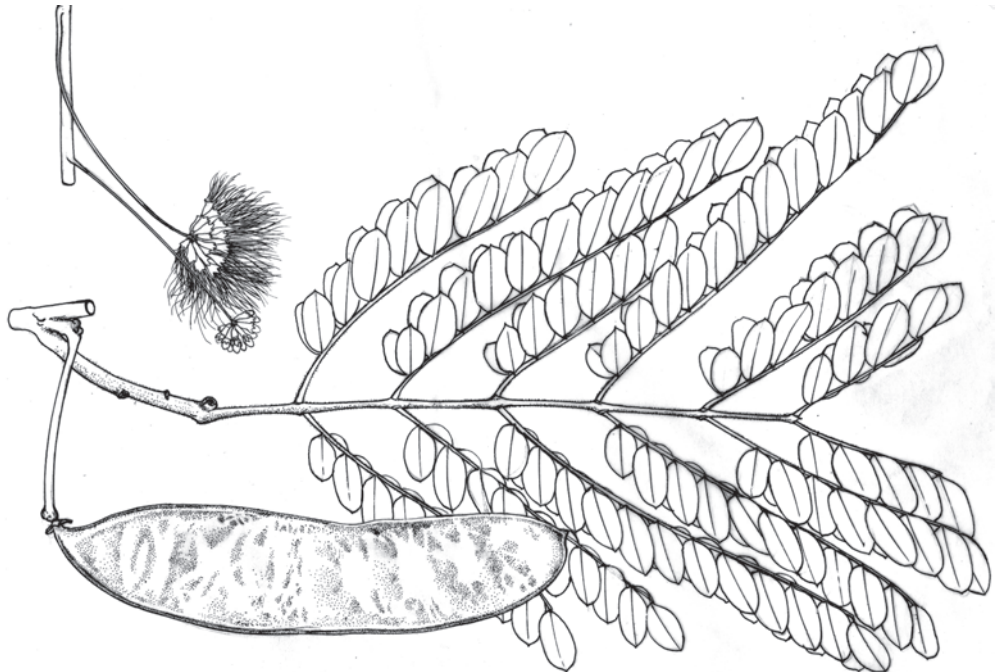
Seed

Treatment: Immerse in hot water, allow to cool and soak for 12 hours.

Storage: Stores well but susceptible to insect attack.

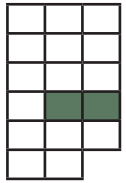
Management

Pollarding, lopping



Albizia schimperiana

Fabaceae



Indigenous

Am: *Sassa, Imasa, Sembaru*

Eng: *Large-podded albizia*

Or: *Ambabessa, Mukarba, Muka arta, Sasa, Vungo, Shimoro, Gorbe, Karchafe*

Ecology

A dominant tree in the upper canopy of wet lowland or lower highland forests in Moist and Wet Weyna Dega agroclimatic zones of most regions, 1400–2000 m.

Uses

Firewood, charcoal, timber (joinery, plywood, matchboxes and construction), medicine (infusion of the roots), fodder (leaves and pods), bee forage, shade, nitrogen fixation, soil conservation.

Description

A large semi-deciduous tree that grows to 25 m or more, the crown more rounded than flat. BARK: Smooth grey or rough brown. LEAVES: Compound, on a stalk about 25 cm long, generally hairy and paler below, shiny dark green above, one leaflet less than 2 cm long, 4–7 pairs of pinnae, the leaflets varying in shape but the midrib a diagonal and the tips rounded. FLOWERS: Very many, white, in round heads. FRUIT: Large clusters of dull brown pods, hang on the tree for a long time. Each pod about 25 cm long by 3.5 cm across (maximum 34 x 6 cm), the edge thickened. Seeds released when the pods break open.

Propagation

Seedlings, wildings.

Seed

Treatment: Not necessary.

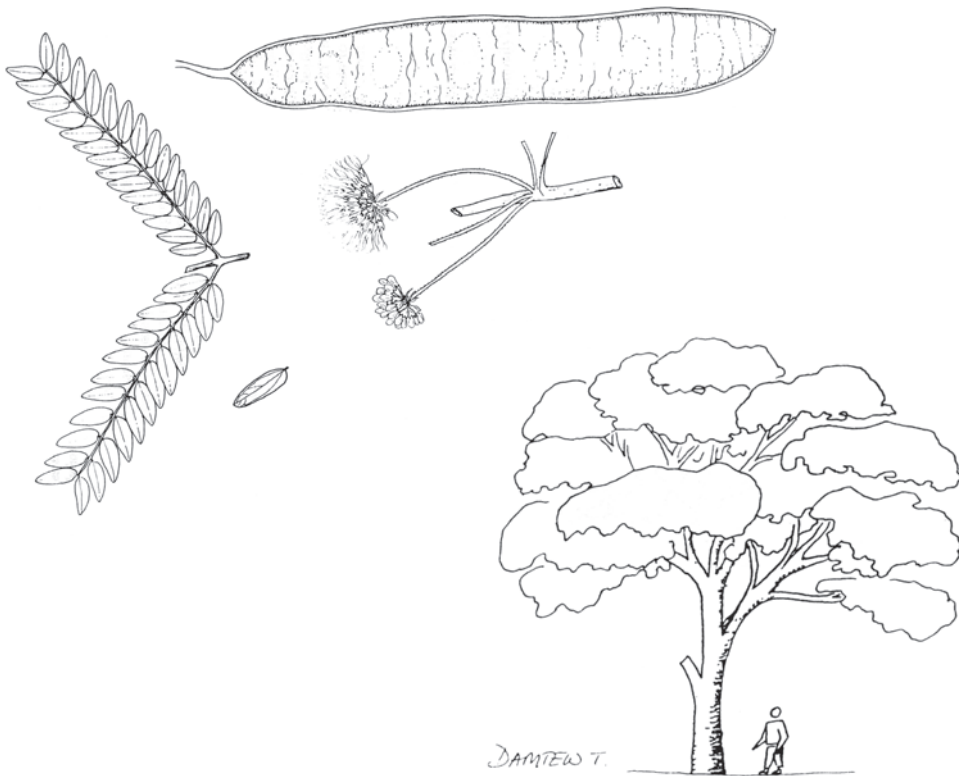
Storage: Can be stored but is susceptible to insect attack.

Management

Coppicing, pruning or lopping of branches to reduce shade.

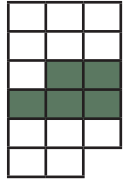
Remarks

Pods persist for a long time on the tree where they may split open to release the seed.



Allophylus abyssinicus

Sapindaceae



Indigenous

Ag: *Entabtabi*

Am: *Embus, Qequewe*

Gm: *Testes; Kf: Shebo*

Or: *Abar, Areje, Druba, Hirkamo, Kekayi, Sarara, Seho*

Tg: *Ashun, Azamaro, Qamshi, Swarya*

Wt: *Worafuto*

Ecology

World, Africa A tree of high montane forest (together with *Juniperus*, *Podocarpus*, *Aningeria*, *Olea*, *Albizia*, *Croton*) and in riverine forests or forest edges, often persisting after forest clearing. Occurs in Tigray, Gonder, Welo, Shoa, Arsi, Gojam, Wolega, Kefa, Sidamo, Bale, and Harerge regions of Dry, Moist and Wet Weyna Dega and Dega agroclimatic zones, 1,000–2,600 m.

Uses

Firewood, timber, farm tools, yokes (kenber in Amharic).

Description

A large forest tree to 25 m. BARK: Smooth grey, the mature trunk up to 1 m across, often fluted. LEAVES: Compound with 3 leaflets on a stalk to 12 cm, edges slightly toothed and hairs only in the vein axils below, tip pointed. The leaflets have short stalks and the big central one is up to 21 cm long. FLOWERS: Yellow-white in much-branched heads to 20 cm. FRUIT: Bunches of rounded soft red berries, about 7 mm across, very small seeds inside.

Propagation

Seedlings.

Seed

Treatment: Not necessary.

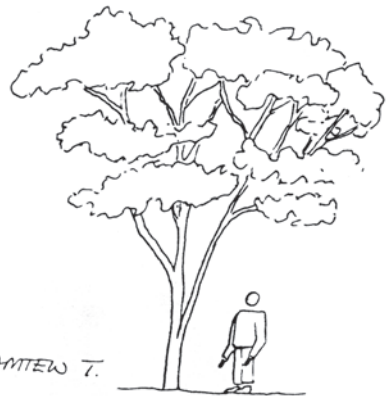
Storage: Can be stored for a long time if kept dry, cool and free from insects.

Management

Pollarding, coppicing.

Remarks

It may make the surroundings untidy as it continually sheds leaves and ripe fruit.

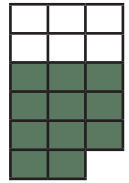


DANTEW T.

Aloe vera

(*A. barbadensis*)

Aloeaceae



Unknown, may be Horn of Africa and South West Arabia

Am: *Eret*

Eng: *Aloe, Aloe vera, Barbados Aloe, Curacao Aloe*

Ecology

One of the centres of diversities for this species is Ethiopia. It is drought tolerant and in Ethiopia, it occurs in Dry and Moist Bereha and Kolla, Weyna-Dega agroclimatic zones, 700—2,300 m.

Uses

Drink (juice), medicine (sap), skin ointment (sap), cosmetic (sap).

Description

More or less succulent shrubby perennial with very short stem. **STEM:** often very short stem. **ROOTS:** taproot 5 – 10 cm long with many secondary roots in the upper soil horizon, freely suckering and forming dense groups, fleshy. **LEAVES:** about 16, erect to slightly spreading, narrowly triangular, 40 – 50 cm x 6-7 cm, upper surface gray-green to pale green with few to many spots, lower surface generally lighter, margin with pale deltoid pale teeth of 2 mm. **FLOWER:** pseudo-lateral inflorescence, bisexual, simple or sparsely branched, 60 – 100 cm tall, racemes 30 – 40 cm x 5-6 cm, densely flowered; flower with yellow, red or orange perianth, stiffly pendulous, anthers and stigma excreted, sepals 6, usually connate into a tube, sometimes outer three free, fleshy, apices sub-acute to obtuse; stamens 6, in 2 rows of

3; ovary superior, 3-locular, style filiform; longer than stamens, stigma small. **FRUIT:** a loculicidal capsule, many seeded; Seeds elongate and ovoid, grey or black, arillate.

Propagation

Vegetatively through suckers, or by seed. Vegetative propagation is preferred. Suckers can be cut from the mother plant when they become 15 – 20 cm long.

Management

Juice can be extracted 2 – 3 years after planting; 6 – 12 months for production of jel. Early removal of suckers encourages large leaves. Mulching, shading and furrow cultivation also practised. Transplant suckers prefer 0.5 m spacing between and within rows. Aloe juice is obtained by cutting the leaves transversally close to the stems and positioning them in such a way that the juice drains into container.

Remarks

In various countries, the fresh yellow leaf juice is used as laxative or purgative and refrigerant. It is used to treat burns, wounds, abrasions, skin diseases, irritations and alopecia. Leaf sap is applied externally to treat pimples, blackheads or cuts. It is used as to wash hair to promote hair growth and as a cosmetic to improve the complexion and smoothen the skin. Suitable for arid regions of Ethiopia.

Photo: Tadesse Wolde Mariam



Annona muricata

Annonaceae

West Indies, Tropical America

Am: *Ambeshok*

Eng: *Soursop*

Ecology

A fruit tree planted throughout the warm tropics at low altitudes. In Ethiopia, it is commonly grown in Dire Dawa. It is suited to upper ranges of the Dry, Moist and Wet Kolla agroclimatic zones, 900–1,500 m. Of several *Annona*, this species has the largest fruit, 1–4 kg in weight, but normally much less. In drought conditions, the tree may lose its leaves. Generally, in the tropics there is no lower limit. Could grow at lower altitudes e.g. in Gamu Gofa or Gambella. Dry Bereha agroclimatic zones are too dry for it.

Uses

Food (fruit), drink, medicine, ornamental, insecticide, fish poison.

Description

A slender evergreen tree 5–7 m in height, usually less, with a bole, which may be 30 cm in diameter, the branches very low and wide, giving an open shady crown. BARK: Grey with a pattern of shallow grooves. LEAVES: Alternate, dark green, shiny and leathery 8–15 cm long, oval with a sharp tip, dull or yellowish below where there are small pits in vein axils. Crushed leaves have a strong, unpleasant smell. FLOWERS: Solitary and large, 2–5 cm across, often opposite leaves and hanging down, 3 outer fleshy petals, curved, almost triangular, 3 inner yellow-green petals,

thinner and rounded, edges overlapping. FRUIT: Kidney or heart-shaped to 25 cm long, the leathery dark green skin covered with soft curved spines. Inside woolly white fibrous pulp covers many large brown-black seeds. (Single fruits grow together making one “compound” fruit, but the outline of individual fruits can be seen on the skin, each with its own spine. As pollination is often incomplete the fruit may have a distorted shape.)

Propagation: Seedlings.

Seed

Treatment: Not necessary.

Storage: Can be stored for several months but should not be dried to a moisture content of less than 5%.

Management

Regular weeding, mulching, manage crown above 1 m to encourage branching.

Remarks

A desirable tree in home gardens. Its delicious fruit can earn good money and is used for juice and ice-cream. However, each tree rarely produces more than a dozen fruits, which take 3 months to ripen, and are often attacked by birds such as mousebirds. All parts have insecticidal properties and can be used to kill fish — fruits can be used as baits. A powder or oil from the seeds kills lice and bedbugs. Contact with the eyes causes irritation. In Ethiopia, it is cultivated at Lege-hare in Dire Dawa.

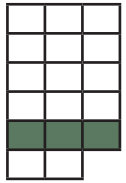
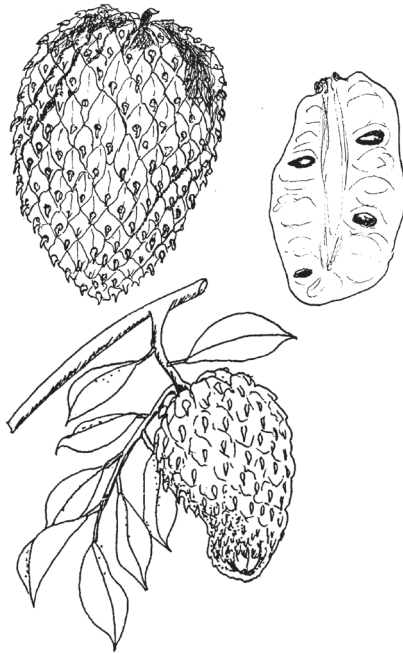




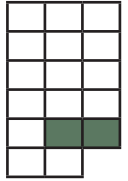
Photo: Patrick Maundu



Annona senegalensis

(*A. chrysophylla*)

Annonaceae



Indigenous

Af: *Gishita*

Am: *Giishita, Yebere lib*

Eng: *Wild custard apple*

Or: *Komate*

Wt: *Eta*

Ecology

The species is widespread in tropical Africa, from Senegal to South Africa and Madagascar in semi-arid to sub-humid regions. In Ethiopia, it is found in Combretum woodland and wooded grassland in the Moist and Wet Kolla agroclimatic zones of Wolega, Gojam, Ilubabor, Kefa, Gamo Gofa and Bale regions, 400–1,600 m.

Uses

Firewood, timber, poles, tool handles, food (fruit), medicine (roots, gum, fruit), fodder (leaves, fruit), ornamental, windbreak, fibre (bark), yellow-brown dye (bark).

Description

A shrub-like tree, 2–10 m. BARK: grey and smooth, thick and folded when old, young stems hairy and orange-red. LEAVES: Broadly oval, 15 x 10 cm, blue-green, hairy below, fragrant when crushed, on a short thick stalk. FLOWERS: Solitary or in bunches of 2–4, small flowers hanging down below twigs, yellowish with petals and sepals in threes; petals thick and hard, many stamens. FRUIT: Rounded 2–7 cm smooth with divisions. Pick green and unripe. When orange-yellow and smelling like pineapple the sweet pulp is edible.

Seeds numerous and orange-brown.

Propagation

Seedlings (sow seeds in pots), wildings, root suckers from exposed or injured roots.

Seed

2,500–4,000 seed per kg.

Treatment: Not necessary.

Storage: Seeds susceptible to insect damage and lose viability within 6 months. Add ash to reduce insect damage.

Management

Prune to stimulate branching at comfortable height.

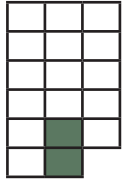
Remarks

Roots used to treat colds; fruit against diarrhoea, dysentery and vomiting. Gum from the bark used to seal cuts and wounds, and even to plug leaking pots.



Anogeissus leiocarpus

Combretaceae



Indigenous

Agn: *Reed*

Mjr: *Kogoden*

Or: *Kewo*

Ecology

A tree with a wide range, growing from Senegal to the Sudan and south to the Democratic Republic of Congo, from the southern limits of the Sahara to the edge of the rain forest. It prefers moist soils as in river valleys. In Ethiopia, it grows in Moist Bereha and Kolla agroclimatic zones in Gambella, Gonder, Gojam, Shoa, Wellega and Ilubabor regions, 400—1,900 m. The minimum annual rainfall requirement is 900 mm.

Uses

Excellent bee forage (flower), medicine for treating abdominal pain (inner bark), cooking salt (ash mixed with water and filtered through evaporation); firewood, wood good for handles of farm implements, and construction.

Description

A large tree up to 15 m, occasionally to 30 m and with a diameter of about 1.5 m when old. Straight, slightly fluted bole and open crown with gracefully dropping branches. **BARK:** Mottled light and dark brown, scaly, flaking off in rectangular patches. A dark pink gum exudes if cut. Young twigs brown, hairy, hanging down. **LEAVES:** Pale green and soft, long-oval 4—7 cm, tip pointed, base narrowed to a short stalk, alternate along the twigs. Leaf hairy

below with 4—8 veins. **FLOWERS:** Appear during the rainy season; very fragrant, in yellow-green-cream heads about 1 cm across, shortly stalked beside the leaves, sometimes in clusters. **FRUIT:** Dark brown rounded capsules, cone-like, crumble when touched breaking into numerous two-winged, shiny brown seeds 7 mm across. Remain for on the tree.

Propagation

Seedlings, direct sowing at site, wildings.

Seed

140,000—150,000 seed per kg.

Treatment: Not necessary.

Storage: Stores well if properly dried.

Management

Some ability to coppice. Very sensitive to fire.

Remarks

Slow growing but produces a valuable hard timber with dark brown-black heartwood, used for house building. Seedlings may spring up below mature trees.



Antiaris toxicaria

Moraceae

Indigenous

Agn: *Tenga, Tungwo*

Eng: *Sacking tree, False mvule, false iroko*

Mjr: *Tengi*

Or: *Tenji, Muka late*

Ecology

A tree found from Sierra Leone, east to Sudan and south to Angola, in moist forests. In Ethiopia, it grows in Moist Bereha and Moist to Wet Kolla agroclimatic zones, 300—1,900 m with over 900 mm of annual rainfall. Common in Gambella region.

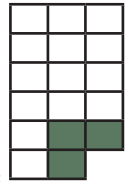
Uses

Timber (light construction, furniture, pallets, crates, plywood), medicine (leaves, latex, seed), bee forage, fibre (bark used as durable sleeping mat and for ropes, bark cloth), arrow poison (latex).

Description

A magnificent deciduous tree of the forest canopy, often 20 m, up to 40 m, the crown rounded, branchlets drooping. A large tree may have a tall clear bole with some buttresses at the base. BARK: Smooth, pale grey, marked with lenticel dots and ring marks. When cut thin cream latex drips out, becoming darker. LEAVES: Variable, usually oval 5–16 cm x 4–11 cm, the upper half often widest to a blunt or pointed tip, the base unequal and rounded. Saplings and coppice shoots have long narrow leaves, the edge toothed, but rarely in mature leaves. Leaves rough, papery with stiff hairs above but softer below. FLOWERS: Small male flowers yellow-green, in clusters about

1.5 cm across, growing just below leaves. Female flowers in disc- or kidney-shaped heads to 3 cm across. FRUIT: Bright red, dull and furry, 1.5 cm long, scarlet and velvety when mature; the swollen receptacle contains just one seed. The soft fruit is liked by birds, bats, monkeys and antelope and therefore dispersed by them.



Propagation

Seedlings, wildings, seed germination sporadic, 70 – 90 % of sawn stones in 18 – 89 days.

Seed

Treatment: Not necessary

Storage: Loses viability quickly; sow as soon as collected.

Management

It has good self-pruning ability. It is susceptible to fire damage.

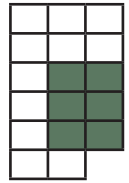
Remark

The latex is a component for arrow poison while fluid from macerated softwood is used locally as poultice for swellings. The fruit contains latex but reported to be edible. The latex does not store for long, so it should be collected only when required. Bark cloth is obtained by stripping off a section of bark from the tree, then shaving off the outer part of the bark and beating and washing the inner fibrous part. There is little difference between heart and sapwood; it is yellow-white and soft, easily attacked by termites and borers. It can make a tough veneer for the plywood industry. The tree does not compete with crops. Plant individual trees for shade, as avenue trees or as a pure stand.



Apodytes dimidiata

Icacinaceae



Indigenous

- Ag:** *Zindi*
Am: *Cheleleqa, Donga*
Eng: *White pear, Pearwood*
Kf: *Wondefo*
Or: *Chalalaqa, Oda-bada, Oda-kiyet, Oda-seda, Qumbala, Wendebiyo*
Sd: *Donkiko*

Ecology

Distributed in most countries in East and Central Africa southwards to Mozambique and South Africa. Also on Madagascar, the Comoros and Mascarene Islands, India, tropical Asia and as far east as south-western China and the Moluccas. In Ethiopia, it is found in *Podocarpus-Olea-Syzygium* upland rain forest in Moist and Wet Kolla agroclimatic zones of nearly all regions, above 1,350 m, Moist and Wet Dega below 2,600 m and Moist and Wet Weyna Dega.

Uses

Firewood, timber (construction, doors, veneer), bee forage, ornamental.

Description

A tall forest tree to 25 m with a thick trunk in rain forest but much smaller in drier areas; crown rounded. BARK: Smooth, grey-white, flaking in patches with age. LEAVES: Shiny, dark green, oval to 13 cm, tip usually rounded, edge very wavy, midrib pale and clear below, other veins not at all clear but branching irregularly. Leaves dry black. FLOWERS: Very small and fragrant, white, like stars, black anthers, in loose heads to 9 cm long at the end of branchlets, all over the tree. FRUIT: Small and flat, 8

mm, green then black when ripe with a soft red bump making it kidney-shaped; thin style remaining. One seed inside.

Propagation

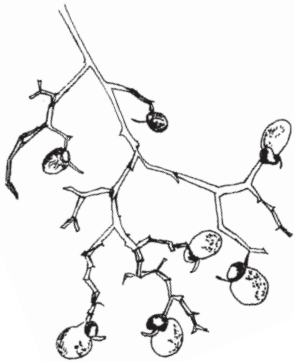
Seedlings, wildings.

Seed

Treatment: Not necessary.

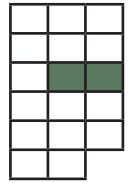
Remarks

Two varieties, var. *acutifolia* and var. *dimidiata*, are recognized in Ethiopia. The pale wood is very hard but easy to saw and plane. It is naturally perishable but permeable for treatment with preservatives. The wood is also susceptible to borer attack.



Arundinaria alpina

Poaceae



Indigenous

Ag: Anini

Am: Kerkba

Eng: Mountain bamboo

Ga: Washo

Gm: Kias

Gmz: Jimna

Kf: Shineto

Or: Lemana

Ecology

Mountain gorges and tops forming the bamboo zone, usually in Moist and Wet Dega agroclimatic zones in Gojam, Shoa, Kefa, Gamo Gofa, Sidamo and Bale regions, 2,200- 3,300 m. The grass grows in dense stands with a leafy canopy and stems so close that one can only pass through with difficulty.

Uses

Furniture, poles, construction, utensils (containers for grain, local spinning tools), food (shoots), fodder (shoots, leaves and young stems), , ornamental, soil conservation (plantation as well as materials for check dams), basketry, fencing material.

Description

A large hollow-stemmed grass, usually 6–8 m but can reach 12–25 m. STEMS (culms): Smooth, woody, hollow, yellow-green to brown, growing from swollen underground stems (rhizomes). Whorls of thin branches grow at the thickened upper nodes. Stems can reach 7–10 cm in diameter. LEAVES: Grow from branchlet nodes, pale green, up to 20 cm long and 1 cm wide, the tip long and thin; rough to the touch because of short hairs. Leaves

appear from a large yellow leaf sheath to 50 cm long, with purple hairs. FLOWERS: Rarely seen, in heads 10–20 cm long. After flowering the plant dies down.

Propagation

Rhizomes, natural regeneration, seed (possible but rare).

Seed

Flowers at long intervals after which it dies.

Treatment: Not required

Storage: Sow as soon as collected.

Management

Seed of *A. alpina* watered daily will germinate readily. Transfer seedlings to boxes when 2.5 cm high. Plant out 8–12 months later, above 2,500 m. Offsets from one-year old culms can also be planted out and will develop quicker than seedlings.

Remarks

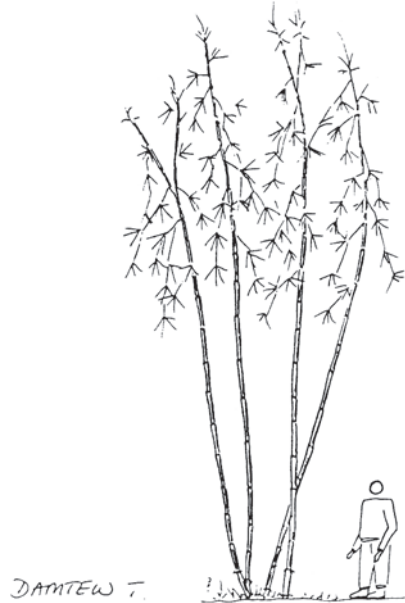
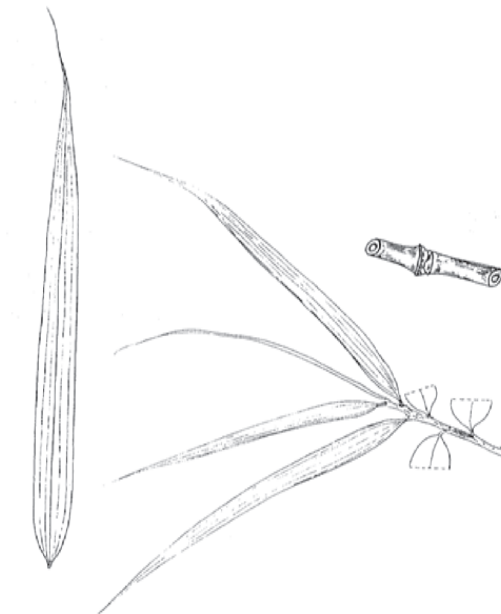
A valuable forest crop which should not be over-exploited. Susceptible to termites and borers. In Tanzania, bamboo has been used for village water pipes. This species flowers between 15 and 40 years and then dies down, so a local stand of the grass will be of even age and size. All bamboos belong to the grass family. Most species grow in the humid forests of South East Asia where they are of great importance to rural people. Of 1,250 species, 43 are found in Africa and most of these grow only in Madagascar.



Photo: Tadesse Wolde Mariam



Photo: Patrick Maundu



Arundo donax

Poaceae

Indigenous

Am: *Shembeko, Meka*

Gmz: *Weysha*

Or: *Shambako*

Eng: *Reed grass*

Ecology

Grows in dense clumps by water courses even in Dry Kolla agroclimatic zone, but most common in Moist and Wet Kolla as well as in Dry, Moist and Wet Weyna Dega agroclimatic zones, up to 2,400 m.

Uses

Furniture (local), fodder, fences, spinning tools, grain stores, thatching, basketry.

Description

A leafy perennial grass 2–6 m high, usually in dense clumps. Stems or culms grow up from a thick, knotty underground stem or rhizome. Stems are hollow and some may branch. LEAVES: As in many grasses, the leaf base or sheath surrounds the stem. Leaf blades are spaced regularly around stem, each one 30–50 cm x 5–7 cm wide with a long pointed tip. FLOWERS: This grass does not normally flower in Ethiopia. Elsewhere, pright flowering heads reach up to 60 cm and produce typical grass seed.

Propagation

Rhizomes.

Seed

Treatment: Not applicable

Storage: Not applicable

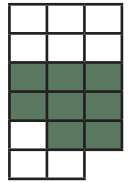
Management

It multiplies naturally on favourable sites. Once you plant the off-set cut that has the rhizome, cut back the rhizomes to control growth.

Remarks

The grass is widely cultivated in Ethiopia, especially for thatching and fencing. The stem is used to make the local spinning tool, Ankerit and a musical instrument called ‘Washint’ in Amharic. Dry stems are used to build grain stores.

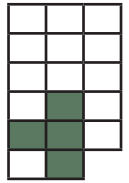
It is used for making the musical instrument called ‘Washint’ in Amharic.





Azadirachta indica

Meliaceae



North-east India, Burma

Agn: *Byby*

Am: *Kinin*

Eng: *Neem*

Nur: *Nibe, Niff, Niph*

Or: *Galalo, Riga-arba*

Sh: *Nim*

Tg: *Nim*

Ecology

A tree well known in its native land and now naturalized in the Old World tropics where it is also widely planted. Extensively grown in tropical Africa, especially in arid and semi-arid regions. It is drought resistant and does well in poor soils. Roots grow deep and spread over a wide area, but it does not stand waterlogging. In Ethiopia, it is widely planted in the Dry and Moist Kolla and Moist Weyna Dega agroclimatic zones of Ilubabor, Kefa, Wolega, Harerge and Shoa regions, 400–1,500 m. Int. literature says 1500 m upper limit for good growth, higher in Ethiopia. What about the agroclimatic zones in that case?

Uses

Firewood, charcoal, timber (furniture), poles, medicine (oil, leaves, bark, roots), fodder (leaves eaten by goats, oil-seed cake), bee-forage, shade, ornamental, soil conservation, windbreak, insecticide (azadirachtin), oil (seed), soap.

Description

A fast-growing, medium-sized tree which may reach 20 m, with a dense, leafy, oval-shaped canopy, evergreen except in the driest areas. BARK: Pale grey-brown, grooved. LEAVES: Glossy green, crowded

at the ends of branches; compound to 40 cm long, each leaflet curved and long, pointed, the edge roughly saw-toothed, leaf blades unequal, a smaller leaflet at the leaf tip. FLOWERS: Small, fragrant, cream-white, hanging in long graceful sprays. FRUIT: Oval yellow berries when ripe, 2 cm long, thin skinned with oily pulp, usually 1 or 2 seeds.

Propagation

Seedlings, wildings, direct sowing at site.

Seed

About 5,000 seed per kg.

Treatment: Not necessary.

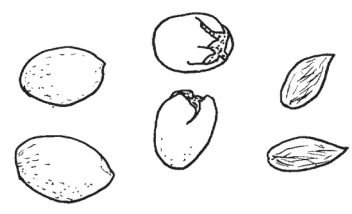
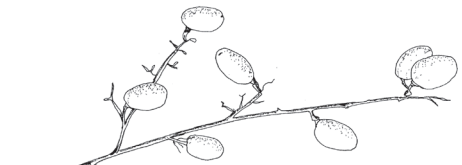
Storage: Seed should not be stored as it loses viability quickly.

Management

Fast growing after the first year; lopping, pollarding. Should be weeded during establishment as the initial growth may be relatively slow.

Remarks

The wood is tough and resistant to decay and termites. The tree that is highly valued in Ethiopia for its medicinal uses. Leaf powder mixed in water makes an effective fumigant against seed borers in grain stores. Used mainly for shelter belts and planted on degraded land. Neem has turned into a weed in some parts of the world.



Balanites aegyptiaca

Balanitaceae

Indigenous

Ag: *Qutsa, Qutta*

Agn: *Toow*

Am: *Bedeno, Jemo, Kudkuda*

Br: *Baddan*

Eng: *Desert date*

Ga: *Domay, Domaye*

Mjr: *Toyun*

Nur: *Tor*

Or: *Bedena, Baddano*

Sm: *Got, Gueza, Gut*

Tg: *Indrur*

Ecology

An important tree found in Asia and all over Africa from arid and semi-arid regions to subhumid savanna. Common in the Dry and Moist Kolla agroclimatic zones of the Rift Valley in Gamo Gofa, and in Sidamo, Tigray, Welo, Shoa, Gojam, Ilubabor, Arsi and upland Harerge regions, 0–1,800 m.

Uses

Firewood, charcoal, timber (furniture), poles, utensils, tool handles, food (fruit), medicine (infusion from roots, emulsion from fruit, heated gum from the wood, fruits), fodder (leaves, young shoots, fruit), shade, mulch, windbreak, gum, ceremonial meetings, fencing (cut branches), oil (fruit), emulsion of fruit kills snails and fish.

Description

A small evergreen tree about 10 m, crown rounded in tangled mass of thorny branches. BARK: Smooth and green, later dark, cracked, corky. THORNS: To 8 cm, soft at first, then woody. LEAVES: Distinctive pairs of grey-green leaflets, ovate. FLOWERS: Fragrant, yellow-

green clusters. FRUIT: Oblong to 5 cm, both ends round, yellow when ripe, a hard pointed seed within surrounded by yellow-brown bittersweet flesh, seed easily separated.



Propagation

Seedlings, direct sowing at site.

Seed

Seed large, 4 x 2 cm. Plant the seed vertically with stem end down for best results. Germinates in 1–4 weeks. About 1,000 seed per kg. Is this clear and true?

Treatment: Soak seed for 24 hours in cold water, then change water and soak for another 24 hours. Alternatively collect seeds that have passed through goats. Can easily be collected where livestock are kept overnight. Germination: 50–70%.

Storage: After removal from the fruit the seed can be stored for up to one year. Store dry and insect-free. As the seed is very susceptible to insect attack, it is best to avoid storage.

Management

A relatively slow-growing tree. Produces root suckers if roots are exposed. Coppicing; protect young seedlings from browsing.

Remarks

An important species for dry areas as it produces fruit even in very dry years. The wood is termite-resistant. Extracts of the fruit and bark can be used to kill the snail hosts of bilharzia. The free-swimming stages of both bilharzia and guinea worm are also killed if the extract is put into the infected water.



Photo: Patrick Maundu



Baphia abyssinica

Fabaceae

Indigenous

Agn: *Adidewi*

Mjr: *Duwe*

Ecology

Growing in Moist Bereha and Moist and Wet Kolla agroclimatic zone in Ilubabor, Kefa and Gamo Gofa regions, 400—1,250 m and with an annual rainfall 1,400—2,000 mm.

Uses

Firwood, handles for farm implements, pounding stick (heavy woody stems), bee forage, fibre (bark fibre used as rope), toothbrush.

Description

A huge deciduous tree that grows to a height of 4-15 m. BARK peels easily. LEAVES: shiny green in colour on both sides, 2.5-11 cm in length and 1.3-5.5 cm in width; petiole noded, deep green at leaf base and leaf-stalk base; leaf base rounded, tip cuneate, margin entire, oblong in shape; leaf veins fine, FLOWER: white. FRUIT: red, bean size, heavy, and oblong in shape.



Propagation

Seedlings, wildings.

Seed

Treatment: Not necessary but soaking the seeds in cold water for half a day may hasten germination.

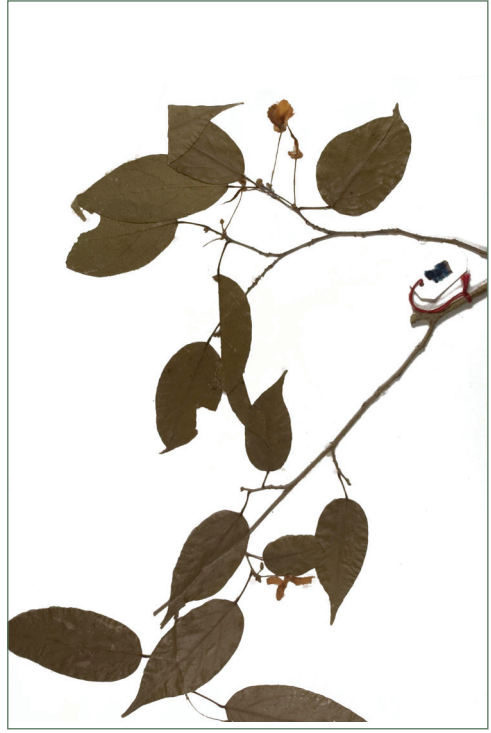
Storage: Can be stored for some time if properly dried and kept in a cool dry place.

Management

Prune the side branches before they reach 2-3 cm in diameter to avoid large knots that make the stem rough. Pruning the crown at an early age increases flowering twigs, leading to production of bee forage.

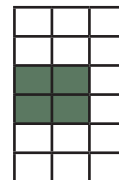
Remarks

The wood is heavy and very difficult to work.



Berberis holstii

Berberidaceae



Indigenous

Ag: *Zinkila*

Am: *Gewo, Yeset af, Zinkila*

Ecology

A shrub that grows on the edges and clearings of Juniperus-Hagenia-Olea forest; very rare in Ethiopia except at a few places in Dry and Moist Weyna Dega and Dega agroclimatic zones of Shoa (Wof Washa forest and Menz), Tigray and Welo, 2,300–32000 m.

Uses

Firewood, hedges and very good for construction of rodent repellent terraces.

Description

A high-altitude shrub, spiny and evergreen, usually 2 m. Young branches red to brown. BARK: Red-brown becoming dark grey. LEAVES: Leathery and stiff, 2–3 cm long, widest at the prickly tip, edge spiny and toothed. Sharp spines with 3–5 parts grow below the leaf clusters at nodes. FLOWERS: Yellow, in stalked clusters, sensitive stamens which move upwards and inwards when touched. FRUIT: Dark purple, long oval with 1–4 seeds inside.

Propagation

Seedlings, direct sowing at site.

Seed

Treatment: No special treatment needed.

Storage: Can store well in dried condition for as long as 6 months.

Management

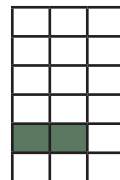
Trimming as a hedge or letting it grow for cutting the branches to be used later in rodent-repellent terrace construction.

Remarks



Berchemia discolor

Rhamnaceae



Indigenous

Am: *Jejeba*

Eng: *Wild almond*

Or: *Jejeba*

Sm: *Amor, Hamor, Korguba*

Tg: *Aba*

Ecology

Widespread from Yemen, Somalia and Eritrea to South Africa in semi-arid bushland, wooded grassland as well as riverine vegetation, 0–1,600 m. Tends to be riparian in the more arid areas. In Ethiopia it grows in dry open woodland or along river valleys at lower altitudes in Dry and Moist Kolla agroclimatic zones, commonly in Welo, Shoa, Gamo Gofa, Bale and Harerge, 800–1,900 m.

Uses

Timber (construction, furniture), poles, food (fruit), drink (leaves), medicine (roots), fodder (fruit, leaves), bee forage, shade, ornamental, windbreak, resin, black dye (powdered heartwood, roots).

Description

A semi-deciduous shrub or tall tree to 18 m with erect spreading branches making a heavy rounded crown. BARK: Grey-black, cracking and scaly, corky spots on young greenish branches. LEAVES: Shiny dark green, sticky when young, oval to 11 cm, lateral nerves making a clear pattern. Yellowish green below. FLOWERS: Small yellow-green, stalked, in loose clusters, attracting bees. FRUIT: Oblong, yellow about 2 cm long with 1–2 flat seeds in sweet edible flesh.

Propagation

Seedlings.

Seed

2,300–3,500 seeds per kg. Germination usually good, 80–100%. Germinate readily.

Treatment: Not necessary, but soaking in cold water for 12 hours may enhance germination.

Storage: Stores well at room temperature if kept dry.

Management

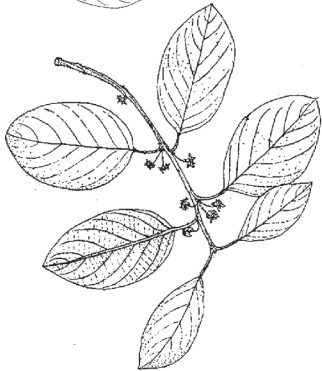
Coppicing, lopping, pollarding. Produces root suckers from injured or exposed roots. Fairly fast growing when young.

Remarks

The sapwood is light and yellow, the heartwood yellow-brown and resinous; one of the hardest woods in East and Central Africa. Fruit may be boiled to eat with sorghum; leaves used as a tea. The dye is used by basket makers. Leaves provide fodder for camels and goats.

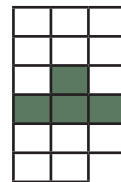


Photos: Patrick Maundu



Bersama abyssinica **subsp. *abyssinica***

Melianthaceae



Indigenous

Ag: *Azmiri, Dinkifi*

Am: *Azamir*

Eng: *Winged bersama*

Ga: *Zagie*

Gr: *Sabattala*

Or: *Boqo, Dolkiss, Gessa, Qaracha, Lolchissa*

Sd: *Teberako*

Tg: *Asha-om, Bersma*

Wt: *Tintala shoa*

Ecology

A small tree common from East to southern Africa. In Ethiopia, found in forest, at forest edges or on cleared land as well as in grassland, open woodlands, on slopes and hills in Dry, Moist and Wet Weyna Dega and lower Dega agroclimatic zones of almost all regions, 1,700–2,700 m.

Uses

Firewood, medicine (crushed leaves, bark juice, root decoction), bee forage, live fence.

Description

A shrub or small leafy tree usually 3–7 m but to 15 m in forest. The trunk may be crooked. **BARK:** Brown and smooth becoming grey and rough. **LEAVES:** Compound with 5–10 pairs of dark green leaflets, plus one at the tip. The leaf stalk may reach 60 cm and be wingless or just lightly winged (other subspecies not appearing in Ethiopia have clearly winged leaf stalks) while hairy at the base. Each leaflet is about 10 cm long, narrowed to a pointed tip; the edge may be slightly toothed or not. **FLOWERS:** Grow from

thick upright spikes, like “candles” to 35 cm, buds and stalk hairy, opening to green-cream flowers, slightly pink, each 2 cm across. **FRUIT:** Thick woody capsules, rounded to 2.5 cm across with golden hairs at first. Capsules crack open into 3–5 sections, each with a bright orange-red seed, 1 cm, wrapped for half its length in a waxy yellow aril.

Propagation

Seedlings, cuttings.

Seed

About 1,100–1,300 seed per kg.

Germination may reach 70% but is sporadic within 5–10 weeks.

Treatment: The seed coat is thin but the aril should be removed. Sensitive to freezing.

Storage: Can be stored for a couple of months.

Management

Produces root suckers.

Remarks

Caution: Leaves are poisonous to livestock. This species easily regenerates under mature trees and may invade cultivated land left fallow even for just a few years. Only the subspecies *abyssinica* occurs in Ethiopia.



Photo: Tadesse Wolde Mariam



Photo: Patrick Maundu



Blighia unijugata

Sapindaceae



Indigenous

Kf: *Komy*

Or: *Adakebo, Tucho*

Ecology

A tree extending from West Africa to Ethiopia and to South Africa. In Ethiopia it is a tree of evergreen lowland and upland forest in the Dry and Moist Kolla agroclimatic zones of Ilubabor, Kefa, North and South Omo, 500–1,700 m.

Uses

Firewood, timber (furniture, construction), shade (for coffee).

Description

An under-storey tree 7–12 m, but to 25 m in forest. It has a dense, shady, rounded crown (like mango). BARK: Thin, grey to dark green, rather smooth but with horizontal ridges and little rounded bumps. LEAVES: Compound, only 1–3 pairs of leaflets on a short stalk, dramatic pink-red at first, later shiny dark green, dull below. Each leaflet about 12 cm and quite wide, smaller leaflets at the base, the edge wavy and tip long and pointed. FLOWERS: Small, fragrant and white on a drooping head 7–8 cm. Male trees and female trees. FRUIT: Bright yellow-orange-red capsules decorate the tree, each soft, hairy, rather triangular to 4 cm long with 3 winged lobes. The capsules become woody and split into 3 sections each of which twists back to set free 1 cm shiny brown-black seeds. Each has a small yellow cup-like aril.

Propagation

Seedlings (sow seeds in pots).

Seed

Seeds germinate easily.

Treatment: Not necessary.

Storage: Can be stored well unless attacked by seed eaters.

Management

Fast growing.

Remarks

Leaves and fruit have been reported to be poisonous — not even baboons eat them. The red heartwood has been used for building and furniture. Common as a shade tree in coffee plantations.



Borassus aethiopum

Arecaceae



Indigenous

Am: *Zembaba*

Agn: *Udua*

Eng: *African fan palm, Borassus palm, Deleb palm, Palmirah palm*

Ecology

A palm tree widespread throughout the less dry areas of tropical Africa. It needs a high water table. In Ethiopia, it is found in flood plains and along water courses in Moist and Wet Kolla and Weyna Dega agroclimatic zones in the western parts of Ilubabor and Kefa.

Uses

Timber (roofing, door frames), poles, tool handles, food (fruit, seeds, young seedlings), palm wine (sap of flower shoots), medicine (roots, flowers, oil), fodder (fruit, young leaves), fibre (leaves), baskets, mats (leafstalks, leaves), thatch, oil (fruit, pulp).

Description

The tallest indigenous palm, to 25 m. TRUNK: 80 cm in diameter, smooth grey, thickened above the middle after about 25 years; dead leaves remain on the young trunk. LEAVES: Large fan-shaped, blue-green to 4 x 3 m, deeply divided into leaflets, thorny at the base. FLOWERS: Male and female on different trees, males producing branched spikes to 2 m carrying the pollen. FRUIT: In large bunches weighing 20 kg or more, each fruit round, about 15 cm across, orange-brown in a calyx cup. Inside yellow-white oily edible pulp around 3 seeds each 8 cm, brown, woody.

Propagation

Direct sowing at site, seedlings.

Seed

2–3 seeds per kg. Best to use fresh seed. If they are to be dried, this should be under shade to avoid excessive heat from the sun on one side of the seed. The seed can be sown without removing the pulp surrounding it. Best to germinate seed in a pot instead of a seed-bed. As soon as the ‘root’ starts showing, plant carefully at site. The ‘root’ will carry the embryo down into the ground, perhaps to the water table, then the first leaf will grow up to the soil surface. Germination usually takes about a month.

Treatment: Not necessary.

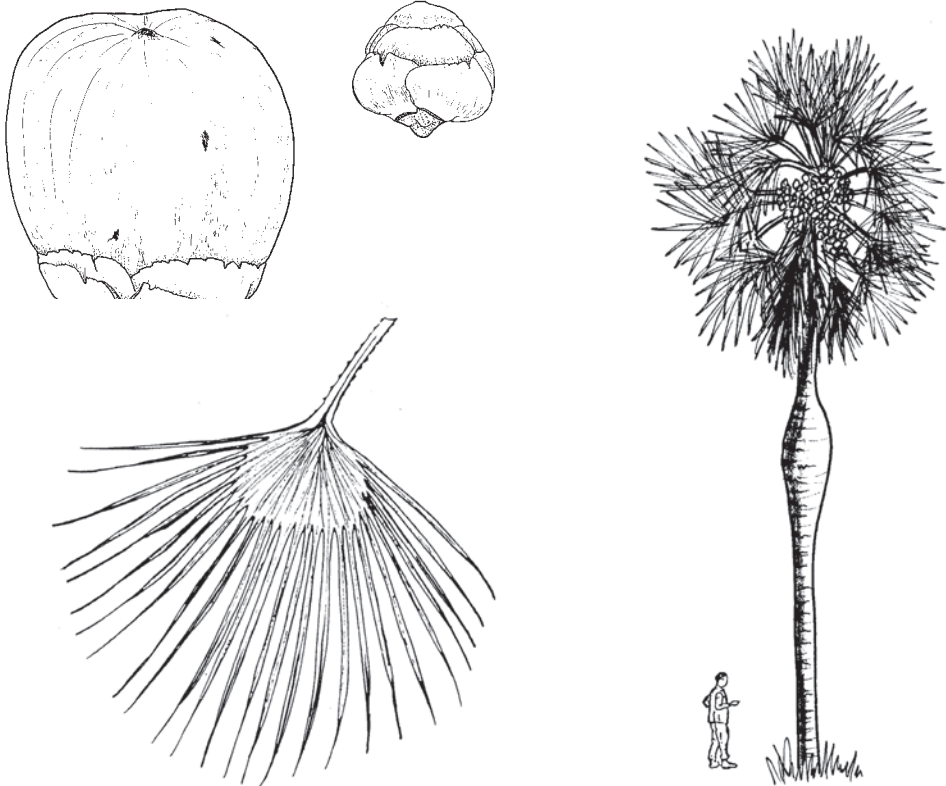
Storage: Seeds dried in shade remain viable for about 2–3 months.

Management

Growth rate depends on the site, but generally slow growing. Takes about 40 years to reach maturity for flowering; rotation period can be as long as 140 years.

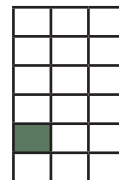
Remarks

Elephants eat the fruit and have contributed to the distribution of the tree. The wood is hard and heavy and resistant to termites and fungi. The trunk and leaf stalks are used to make roof poles.



Boswellia papyrifera

Burseraceae



Indigenous

Ag: *Fatuka*

Am: *Kererrrie, Ye-tigre etan zaf*

Eng: *Bitter frankincense*

Hd: *Libanat*

Or: *Galgalem, Kafal*

Tg: *Dankwa, Meger, Walba*

Ecology

Found in Acacia-Commiphora woodland and wooded grassland in North Africa, Arabia and Somalia. In Ethiopia, the tree is found in Dry Kolla agroclimatic zone of Tigray, Gonder, Gojam and Shoa regions, often on steep rocky slopes, lava flows or in sandy river valleys, 950–1,800 m.

Uses

Live fence, incense (resin).

Description

A deciduous tree to 4–12 m or more, with thick branches tipped with clusters of leaves, the crown rounded. BARK: Smooth, pale yellow-brown, peeling off in large papery pieces. A cut looks red-brown and a fragrant milky resin drips out. LEAVES: Large and compound on a stalk to 45 cm, 6–8 pairs of leaflets plus one at the tip, each oval, 4–8 cm, densely hairy below, the edge sharp or round-toothed, sometimes double-toothed. FLOWERS: Sweet smelling, develop on loose heads at the ends of thick branchlets, appearing before the new leaves. The red flower stalk, to 35 cm, bears the white-pink flowers with 5 petals and 10 yellow stamens. FRUIT: Red capsules about 2 cm long, 3-sided with 3 hard seeds inside.

Propagation

Seedlings, cuttings.

Seed:

Treatment: No need

Storage: Stores well.

Management

The tree needs to rest from 2-5 years before the second harvest of resin-gum. over-exploitation could damage the trees.

Remarks

Harvesting of resin can take place most of the year. The bark is scraped for resin-gum droplets. This first cutting is thrown away and a second cutting taken weeks later is only of low quality. A third cutting produces quality frankincense. *B. papyrifera* has a very similar resin and is used as frankincense in Ethiopia. *B. ogadensis*, special to Harerge, has simple leaflets and produces a good resin also.



Boswellia rivae

Burseraceae



Indigenous

Am: *Ye-Sidamo etan zaf*

Br: *Matabut*

Eng: *Incense tree, Black incense*

Or: *Qura*

Sm: *Murfur-ad, Mohor-medu, Murken, Baye-medow*

Ecology

In Africa, it is found in *Acacia Commiphora*-wooded grassland in red sandy to stony soils of Dry Kolla agroclimatic zone of Sidamo, Bale and Harerge, 250–800 m. It is also found in Gamo Gofa region, although not so common there.

Uses

Soil conservation, incense (resin).

Description

A spreading deciduous shrub or tree to 6 m. **BARK:** Yellow-grey, peeling in small papery pieces and breaking off in thick, irregular scales. Branchlets grey and hairy. **LEAVES:** Compound, about 7 cm with 7–10 pairs of hairy leaflets, each with small rounded teeth. **FLOWERS:** Flowers with 5 pink petals appear with the new leaves, on several stalks to 4 cm long, at the tips of thick branchlets. **FRUIT:** A 3-angled capsule about 2 cm long, containing 3 hard seeds.

Propagation

Cuttings, seedlings, direct sowing at site.

Seed:

Treatment: Not necessary.

Storage: Stores well.

Management

Avoid year-after-year scraping the bark. Use tools that are purposely prepared for resin collection.

Cover the cuttings with moist cloth to initiate root growth. Fill the pots for the cuttings with more sandy soils to avoid rotting of bark.

Remarks

The resin is used locally for incense. It is chewed in Somalia. This is the more important resin in southern Ethiopia.



5mm

fruit capsule & seed



Breonadia salicina

Rubiaceae



Indigenous

Gmz: *Djaba*

Shn: *Gjaba*

Ecology

Grows in moist riverine vegetation in woodland areas in Gonder, Benshangul-gumuz, Gojam, Wellega, Bale and Sidamo, 1,150—1,550 m. Dry, Moist and Wet Kolla. Agroclimatic zones

Uses

Timber (heavy construction), farm implements, bee forage, windbreak and ornamental.

Description

It is a huge, usually a riverine tree that attains a height of some 25 m and a diameter of up to 1.5 m. BARK: dark at the main stem but green and full of scales at branches and branchlets. LEAVES: simple in whorls of 4, glossy, lanceolate in shape, 10-28 cm length and 2-6 cm in length, acute at the apex, narrowed to the base midrib coarse and lateral veins fine; petiole 2-20 mm long.

Propagation

Seedlings

Seed

Treatment:

Storage:

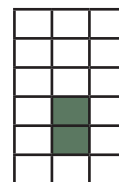
Management

Remark



Bridelia micrantha

Euphorbiaceae



Indigenous

Am: *Yeneber tifer*

Gm: *usb*

Or: *Galalo, Riga-arba*

Ecology

A tree of humid and subhumid areas in East and southern Africa. Grows in forests, by rivers, forest edges or open woodlands in Moist Kolla and Weyna Dega agroclimatic zones of Gonder, Gojam, Shoa, Arsi, Bale, Gamo Gofa, Kefa, Wolega, Ilubabor and Sidamo, 1,200–2,200 m.

Uses

Firewood, charcoal, timber, poles, tool handles, food (fruit), medicine (bark, roots), fodder (leaves), shade, mulch.

Description

A medium-sized leafy evergreen tree with dense spreading crown, to 13 m, rarely to 27 m. **BARK:** Grey-brown, flaking with age, young stems zigzag, dotted with paler breathing pores. **LEAVES:** Appear compound but actually alternate along branches, dark shiny green above, to 15 x 8 cm, usually smaller, veins parallel, extending along margin, leaf stalks slightly hairy. **FLOWERS:** Small, yellow, bunched in leaf axils, male and female flowers on different trees. **FRUIT:** soft, purple-black, oval, up to 8 mm long, sweet and edible when ripe.

Propagation

Seedlings.

Seed

Prolific seeder.

Treatment: Fresh seed should be used.

Storage: Short viability period (oily seed); do not store.

Management

Pollarding, pruning, coppicing. Fast growing on good sites.

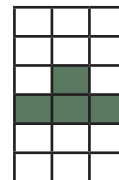
Remarks

The tree is becoming scarce due to over-exploitation. The wood is resistant to termites. The tree can be grown beside crops in which case pollarding or pruning may be needed to reduce shading of the crops.



Buddleia polystachya

Loganiaceae



Indigenous

Ag: *Askwar*

Am: *Anfar, Atquar*

Or: *Adado, Anfari, Buchema, Dadatu, Qawissa*

Sd: *Bulchano*

Tg: *Madere*

Ecology

A plant distributed from Uganda and Tanzania north into Somalia, Ethiopia, Eritrea, Yemen and Saudi Arabia. Often grows in secondary scrub of semi-arid upper highland forest and at forest edges in Dry, Moist and Wet Weyna Dega and Moist Dega agroclimatic zones, 2,200–3,600 m.

Uses

Firewood, charcoal, timber (local house construction), fodder (leaves), live fence.

Description

A much-branched shrub or small tree, usually 4–5 m, occasionally to 12 m. BARK: Red-brown or grey, short bole deeply grooved. LEAVES: Long and narrow to 15 cm, tip pointed, light grey-green above, underside and stems with dense white-brown hairs, on a 1 cm stalk. FLOWERS: Bright orange on a long spike to 20 cm, flowers tubular, in small groups with sharp and rather unpleasant smell. FRUIT: Small dry capsules, open at the tip.

Propagation

Seedlings, wildings and cuttings.

Seed

Seed germinate well and seedlings are easily raised.

Treatment: Not necessary.

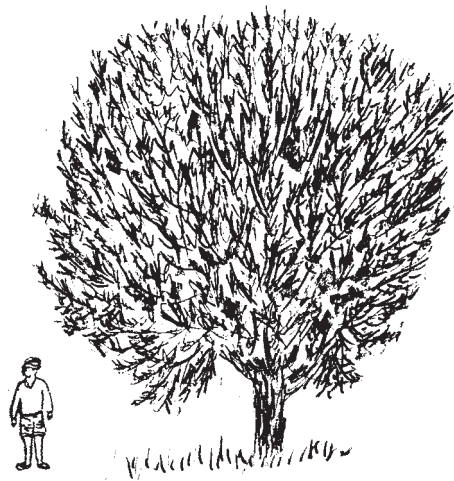
Storage:

Management

Lopping, coppicing, and pollarding.

Remarks

The dry wood can be used to start fires by rubbing sticks (friction).



Caesalpinia decapetala

Fabaceae



Tropical and subtropical Asia,

Mauritius

Am: *Yeferenji kiikita*

Eng: *Mauritius thorn, Mysore thorn*

Ecology

Widely naturalized in Africa in high- and medium-rainfall areas. In Ethiopia, commonly grown as a live fence and often becoming naturalized in wooded grasslands, disturbed grounds, and upland evergreen bushlands of western Welo, Shoa, Arsi, Harerge, and Kefa. It prefers hillsides and valley slopes in Dry, Moist and Wet Weyna Dega agroclimatic zones, 1,200–2,100 m.

Uses

Bee forage, ornamental, mulch, nitrogen fixation, live fence, necklaces (seeds).

Description

A shrub or climber occasionally reaching 10 m. LEAVES: Feathery compound with 4–10 pairs of pinnae and oblong leaflets. Hooked prickles scattered along branches and even on the leaf stalk. FLOWERS: Showy pale yellow in spikes to 30 cm, 2 cm across with orange stamens hanging down. FRUIT: Clusters of green (if fresh), brown (if dry) pointed pods, held erect on woody stalks, scattering many seeds as they open.

Propagation

Direct sowing at site.

Seed

Germination rate ± 60 %.

Treatment: Soak in cold water for 24–48 hours.

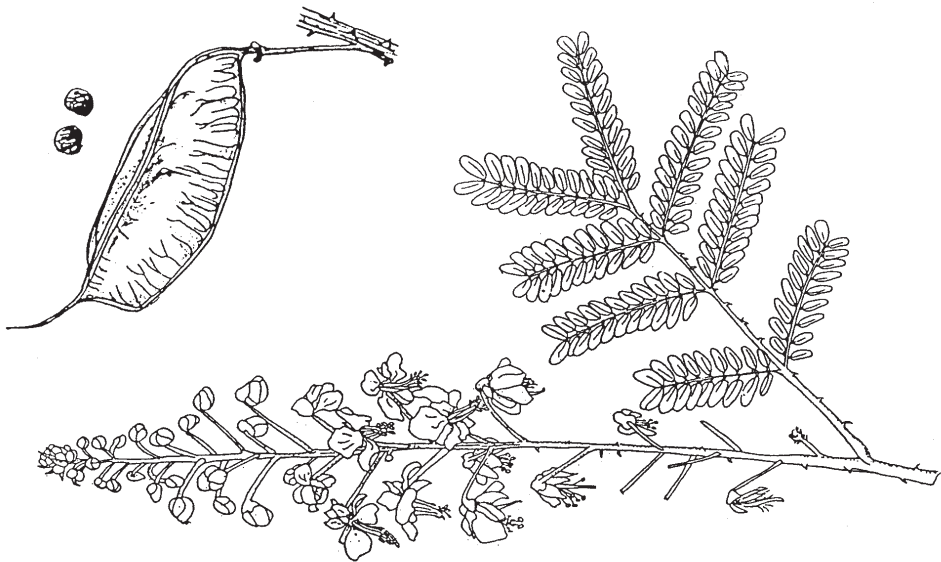
Storage: Seed can be stored for a long period if it is kept free from insects.

Management

Trim as a live fence.

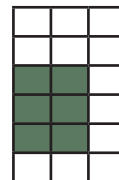
Remarks

Fairly fast growing. May develop into a serious weed in good soil if not checked, especially in pasture land. Burning in the dry season is a control measure. The thorns are so effective that a live fence of *C. decapetala* has been compared to a fence with barbed wire.



Cajanus cajan

Fabaceae



S.E. Asia

Am: *Yergib ater, Yewof ater*

Eng: *Pigeon pea*

Hd: *Gitea*

Ks: *Farengota, Ohota*

Nur: *Ades*

Sm: *Salboko-ghed*

Wt: *Kafo atara, Kafwa ateriya*

Ecology

This is a hardy, widely adaptable and drought resistant crop growing in a variety of soils if not waterlogged or saline.

Cultivated in tropical Africa and America and a great deal in India. An important crop in Ethiopia, cultivated in Dry and Moist Kolla, Weyna Dega and Dega agroclimatic zones of Gonder, Gojam, Shoa, Harerge, Kefa, Gamo Gofa and Sidamo, 1,000–2,400 m.

Uses

Firewood, food (seed), fodder (leaves and pods), bee forage, basket work (stems), mulch, nitrogen fixation, soil improvement, soil conservation, windbreak.

Description

A slender shrub 2–5 m, annual or perennial, becomes woody with age. Thick stems ribbed and densely pubescent.

LEAVES: Trifoliate, leaflets hairy, silver below, 2–8 cm long. **FLOWERS:** Usually yellow, in terminal groups, the large petal has red lines outside, buds yellow, sticky.

FRUIT: Straight or upcurved pods, to 10 cm long, sticky and hairy with 4–5 yellow-green-grey seeds inside.

Propagation

Direct sowing at site.

Seed

The pods are picked when the seed has reached maturity and is just beginning to lose its bright green colour. Seed highly susceptible to insect attack; may already be damaged in the pods. Up to 15,000 seeds per kg. Germination in 2–3 weeks after sowing.

Treatment: Germinates readily, treatment not necessary.

Storage: Seed stores well if kept dry, cool and insect-free. The seed are, however, very susceptible to attack by weevils. Add ash if seed is to be stored.

Management

Fast growing. Regular weeding. May be grown as a pure stand or with other crops.

Remarks

A useful, high-yielding crop for dry areas, which may produce fruit over 4–5 years, but it is susceptible to many pests and diseases. Improved perennial “tree types” are available. It can be used as a contour hedge in erosion control.



Photo: Patrick Maundu



Photo: Patrick Maundu



Calotropis procera

Asclepiadaceae



Indigenous

Am: *Ghinda, Qimbo, Tobiaw*

Agn: *Abuwo*

Eng: *Apple of Sodom, Dead Sea fruit*

Or: *Falfala adal*

Sm: *Boha, Gala*

Tg: *Akalo, Dinda*

Ecology

Grows in dry deciduous bushlands, in bare soil at roadsides and abandoned residences. Also often found along permanent or seasonal water courses and where the water table is high in the Bereha and Kolla agroclimatic zones in Afar plains and Tigray, Welo, Gojam, Shoa, Harerge, Arsi, Sidamo, Gamo Gofa and Ilubabor, 600-2,300 m.

Uses

Firewood (old dry stems), fibre (stems), medicine (bark, latex), seed fluff (stuffing), medicine for camels.

Description

A branched shrub, usually 2–3 m but up to 5 m. **BARK:** Corky and peeling, the round stems full of white latex. **LEAVES:** Large and oval, pale grey-green and fleshy, about 20 cm long, in pairs around the stems. **FLOWERS:** In stalked clusters of 3–10 between the leaves, each 2 cm across, with 5 white-pale mauve lobes tipped with dark purple. **FRUIT:** Develop in twin-lobed round bodies over 10 cm long. Green and spongy, then dry out to release numerous flat brown seeds with long silky hairs.

Propagation

Seedlings, cuttings.

Seed

Treatment: Not necessary.

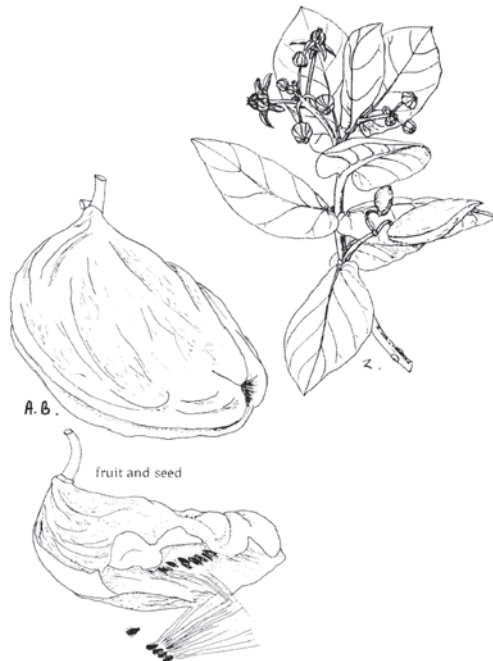
Storage: Can store very well for years.

Management

Coppicing to stimulate branching.

Remarks

All parts of this plant produce latex, which can burn the skin. The plant contains a powerful heart poison (calotropin), which has been used to poison arrowheads.



Capparis tomentosa

Capparidaceae



Indigenous

Am: *Gumero*

Or: *Gumero, Harangama*

Ecology

Widespread in tropical Africa from Senegal through the Sahel to Eritrea and East Africa to South Africa and the Mascarene Islands. In Ethiopia, it is a shrub occurring in semi-arid and humid lowland, highland woodlands, wooded grassland, forest edges and scrub in Dry and Moist Kolla and Weyna Dega agroclimatic zones in nearly all regions, 500–2,300 m.

Uses

Firewood, medicine (roots, leaves, bark), live fence, fencing material (cut branches).

Description

A thorny shrub to 3 m or a climber reaching 10 m. Thorns small, curved back, in pairs beside leaves. LEAVES: Long and oval to 3–9 cm, grey-green, thick and leathery, on a short stalk, may be hairy below, slightly pink. FLOWERS: To 5 cm across with very many white stamens, 4 small white petals, 4 sepals. The ovary is on a stalk. Flowers are usually in groups. FRUIT: Hang down on long stalks to 5 cm, rounded 1–5 cm across, shiny orange-red, drying black, persisting on the bush.

Propagation

Seedlings, cuttings.

Seed

Treatment: Not necessary.

Storage: Stores well.

Management

Lopping. Layering for fencing.

Remarks

May become a serious weed unless controlled. Roots can be very poisonous. In Ethiopia, they are mixed with garlic and roots of *Justicia schimperiana* (= *Adhatoda schimperiana*) to form a juice that is believed to ward off the evil eye.



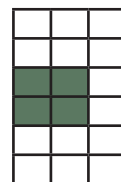
Photo: Patrick Maundu



Carissa spinarum

(*C. edulis*)

Apocynaceae



Indigenous

Ag: *Aguami*

Am: *Agam*

Gmz: *Soha*

Or: *Agamsa, Hagamsa*

Sh: *Awawa*

Sm: *Orgabat*

Ecology

Widespread in Africa from Senegal to Somalia and south to Botswana and Mozambique. Also in Asia from Yemen to India. Grows in woodlands and forests where *Euphorbia*, *Acacia*, and *Croton* commonly occur in Dry and Moist Weyna Dega and Dega agroclimatic zones in all regions, 500–2600 m.

Uses

Firewood, food (fruit), medicine (roots), ornamental and soil conservation.

Description

A spiny shrub or small tree to 5 m or sometimes a liana up to 10 m long. **BARK:** Grey, smooth with straight woody spines to 5 cm, often in pairs, rarely branching. Milky latex. **LEAVES:** Opposite, leathery, shiny dark green to 5 cm, tip pointed, base rounded, stalk very short. **FLOWERS:** Fragrant, in pink-white terminal clusters, each flower to 2 cm, lobes overlap to the right. **FRUIT:** Rounded berries about 1 cm, purple-black when ripe, sweet and edible, 2–4 seeds.

Propagation

Seedlings (sow in pots), wildings, direct

sowing at site. Wildings often grow under parent bushes and may also be used.

Seed

Fresh seed germinate well; 28,000–30,000 seeds per kg.

Treatment: Not necessary.

Storage: Seed loses viability fairly quickly. Use fresh seed for best result.

Management

Fairly slow growing. Trim if grown as a fence. Improve more fleshy and juicy quality by selection.

Remarks

An important food and medicinal plant in Ethiopia. Both the unripe and ripe fruits are eaten whole. Much liked by both children and adults. It can be grown from seed to develop into an attractive and impenetrable hedge. It makes excellent firewood.



Photo: Patrick Maundu



Casimiroa edulis

Rutaceae

Mexico, South America, Indigenous

Am: *Kazamora, Kazmir*

Eng: *White sapote*

Tg: *Kazmier*

Ecology

A fruit tree originally from the highlands of Mexico and Central America now widely grown in the tropics. Grows in Moist Bereha and Moist to Wet Kolla and Weyna Dega agroclimatic zones, 1,000—2,700 m. However, it could grow as an ornamental shade tree in higher altitudes as well. (Meaning naturally 1000-2700 but planted higher up?)

Use

Firewood, Food (fruit), bee forage, windbreak.

Description

A medium-sized evergreen tree up to 12 m, much branched with a short trunk and leafy hanging branches. BARK: Smooth, pale brown. LEAVES: Alternate and compound with 3–5 lobes, each long oval and shortly stalked to the centre, surface shiny green. FLOWERS: Small, green-white-yellow in loose heads beside leaves, 5 petals. FRUIT: Green and rounded at first ripening green-yellow, with soft skin and sweet white pulp around 2–5 large dark seeds, 8–10 cm across.

Propagation

Seedlings. Wildings.

Seed

Clean seed after extraction from the fruit and sow, preferably immediately, but not more than 2 months later since viability declines rapidly. Seedlings can be budded or grafted for good variety. This is recommended since the species is very variable.

Treatment: Not necessary.

Storage: Avoid storage and definitely do not store more than 2 months.

Management:

The tree is a prolific fruiter and branches with heavy foliage. Therefore, during fruiting season, provision of support is essential. Regular (4 - 6 times per year) light pruning is required for the more vigorous types during the first two years to obtain adequate branching without delaying fruiting too much.

Remark

The fruit, which resembles an apple in shape, is soft, juicy, with creamy flesh, very sweet, fragrant and taste, though it may have a bitter aftertaste. The seeds reported to be used medicinally to induce sleep in Mexico. The flowers are highly cherished by bees and bees are also required for good pollination. *Casimiroas* are highly nutritious, being rich in vitamins A and C as well as carbohydrate and protein. Sugar content is as high as 27%.





Casuarina cunninghamiana

Casuarinaceae



N.E. Australia, Pacific Islands

Am: *Shewshewe, Arzelibanos*

Eng: *Australian beefwood, River oak, River she-oak*

Or: *Shawshawe*

Ecology

Introduced to many tropical areas from its native Australia where this tree is found along streams and rivers and prefers well-drained soils. In Ethiopia, it grows in Moist and Wet Kolla and Dry and Moist Weyna Dega and Dega agroclimatic zones, probably in all regions of Ethiopia, 1,300–2,800 m. The most commonly grown of all casuarina.

Uses

Firewood, charcoal, timber, poles, posts, fodder (young branchlets), shade, ornamental, mulch, soil conservation, nitrogen fixation, windbreak.

Description

An evergreen tree to 20 m, pyramidal in shape when young, the base wide when mature and a shady crown. BARK: Grey-black, much cracked with age. Thin branchlets have taken over leaf function in this family—leaves are minute scales at each joint. Branchlets thin, soft, 9–20 cm long bearing 7–9 white-tipped leaf scales in each of the whorls, branches upturned. FLOWERS: Male flowers are seen as yellow pollen-bearing tips to branchlets and female flowers are tiny heads with hairy red stigmas on woody branches. FRUIT: In dense cluster, prickly brown and cone-like, 1 cm long. They ripen and shed hundreds

of winged seed, pale in colour.

Propagation

Seedlings. Nursery soil where casuarina are to be raised may need inoculation by addition of soil from beneath mature trees.

Seed

Collect cones at maturity, just before they open to release seed. Then dry cones on a cement floor or plastic sheet so seeds are released. Move around for cones to release seed, then remove cones and collect seed. Seeds prolifically. Germination rate 55–90%. 530,000–1,600,000 seed per kg.

Treatment: Not necessary.

Storage: Seed can be stored for up to a year.

Management

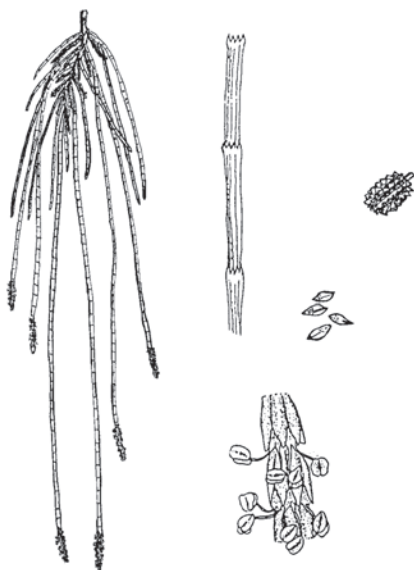
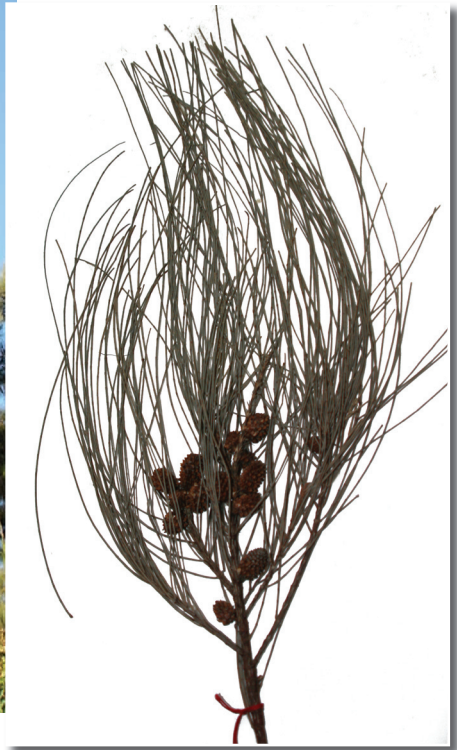
Side prune to get a clear bole. Always add soil from below old trees for root nodule formation. More fast growing than *C. equisetifolia* at higher altitudes.

Remarks

Fairly fast growing. In Australia, branchlets are used as fodder when nothing else is available (hence the name “beefwood”). The wood is very hard and thus difficult to saw and season, though it is susceptible to termite attack. The special root association with a fungus enables the casuarina to fix nitrogen.



Photo: Patrick Maundu



Casuarina equisetifolia

Casuarinaceae



S.E. Asia, northern and north-eastern

Australia

Am: *Arzelibanos, Shewshewe*

Eng: *Whistling pine*

Ecology

Occurs naturally on tropical seashores around most coastal areas of the Pacific and Indian oceans, making it the casuarina with the widest distribution. Cultivated and naturalized in Ethiopia, especially in Shoa region, in Dry, Moist, and Wet Kolla and Weyna Dega agroclimatic zones, 0–1,400m. The extensive root system enables the tree to grow in poor soils from 1200-2200m altitude.

Uses

Firewood, charcoal, timber (construction), poles, fodder (young leaves), shade, ornamental, mulch, soil conservation, soil improvement, nitrogen fixation, windbreak, dye, tannin (bark).

Description

A tree to 20 m with “weeping” foliage. BARK: Grey-black cracked with age. LEAVES: Minute scale leaves just visible on the green branchlets, 30 cm long bearing 6-7 leaf scales in each of the whorls, *branches hanging down*. FLOWERS: Pollen-bearing tips on some branchlets, female flowers in tiny heads with red stigmas. FRUIT: Prickly brown, like cones, in clusters, each cone to 2.5 cm long, releasing hundreds of tiny winged seeds.

Propagation

Seedlings. Nursery soil where casuarina are to be raised may need inoculation by addition of soil from beneath mature trees.

Seed

Collect cones at maturity, just before they open to release seed. Then dry cones on a cement floor or plastic sheet so seeds are released. Move around for cones to release seed, then remove cones and collect seed. Seeds prolifically. Good germination rate. 600,000–900,000 seed per kg.

Treatment: Not necessary.

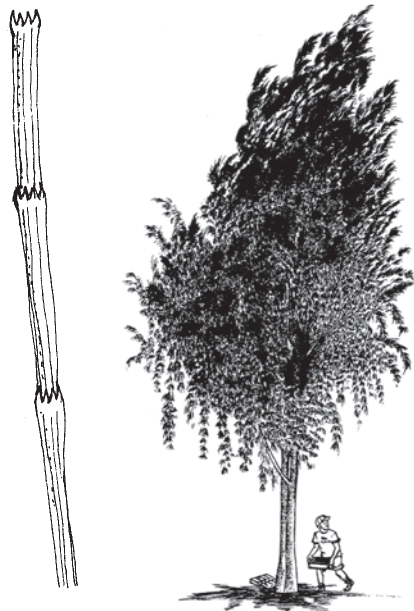
Storage: Seed can be stored for at least one year.

Management

Fast growing. Side pruning to get a clear bole. Produces root suckers if roots are exposed. Always add soil from below old trees for root nodule formation.

Remarks

Reputed to be one of the best fuelwood species in the world. The species is said to exhaust soil moisture and lower the water table. It is tolerant to salt water and suppresses undergrowth. Dry branchlets on the ground may become a fire hazard. Termites may damage seedlings as well as young trees. The species is invasive in parts of the world (Reunion, South Africa, Bahamas, Hawaii and Florida). The charcoal produces an intense heat with little smoke or ash.



Catha edulis

Celastraceae



Indigenous

Af: *Kat*
Am: *Chat*
Km: *Chata*
Or: *Chati, Jima*
Tg: *Chat*
Gr: *Chat*
Wt: *Chatya*

Ecology

World, Africa Grows in semi-humid lowland and lower highland forests, particularly in Dry, Moist and Wet Kolla and Weyna Dega agroclimatic zones of Tigray, Welo, Wolega, Shoa, Harerge and Sidamo regions, 1,400–2,200 m.

Uses

Firewood, medicine (leaves, roots, bark), stimulant drug (shoots, stalked leaves). It is a cash crop in Ethiopia.

Description

A much-branched shrub or tree, usually kept to 2–7 m but reaching 25 m in forests. Trees look like eucalyptus with rounded clusters of bending branchlets bearing the leaves. BARK: Smooth grey-white, later rough and dark brown. LEAVES: Opposite oval to 11 cm, long leathery grey-green above, paler below with clear veins, edge regularly toothed; leaf stalks reddish about 1 cm allowing leaves to twist in the wind. FLOWERS: Very small, pale yellow in bunched clusters beside the leaves. FRUIT: Red-brown capsules, 1 cm long, 3-sided, containing small winged seeds.

Propagation

Usually propagated by root cuttings or suckers but seedlings can be raised too.

Seed

Treatment: Not necessary.

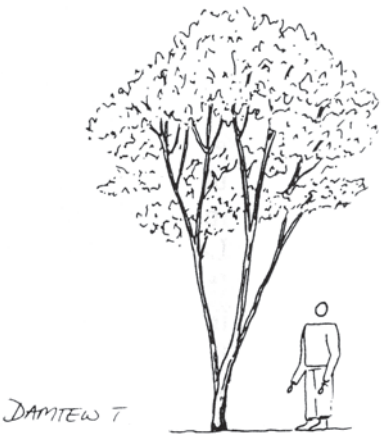
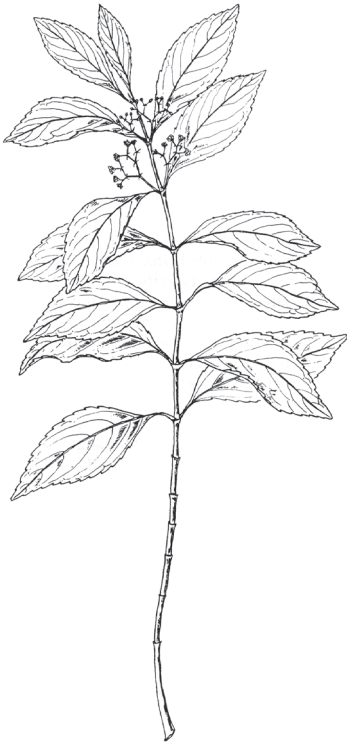
Storage: Can be stored.

Management

Pollarding, trimming as a result of harvest.

Remarks

An important cash crop for small-scale farmers. It is particularly important in Harerge and southern Shoa but is also commonly used in Wolega, Sidamo, western Tigray and Welo. The leaves are chewed as a mild stimulant. Its trade and use is banned in many countries, but is a cash crop in Ethiopia.



Ceiba pentandra

Bombacaceae

Indigenous, Tropical America and West Africa

Am: *Yetit zaf*
Eng: *Kapok tree*
Sm: *Dum-dum*

Ecology

A distinctive tree widely grown in the tropics. It does best at low altitudes in well-drained soils. In Ethiopia, it is planted from Dry Moist Bereha to Dry and Moist Kolla agroclimatic zones. Semi-naturalized, especially in Harerge, Tigray, Arsi, Wolega, and Ilubabor. It is also native to Ilubabor where it grows in lowland evergreen forest. The tree is believed to be Latin American and indigenous in West Africa too, 500–1,600 m.

Uses

Fodder (leaves and shoots), bee forage, ornamental, fibres (mattresses and insulation).

Description

A tall deciduous tree to 30 m with conspicuous, horizontal layered branches, the trunk covered with sharp conical spines when young, heavily buttressed with age, very shallow rooted. **BARK:** Young branches green, old bark grey, smooth. **LEAVES:** Compound, 5–11 leaflets, shortly stalked, radiating from a main stalk to 20 cm, each drooping, long and narrow, 8–16 cm. **FLOWERS:** Open at sunset, small, 1–3 together, the smell unpleasant; 5-part calyx, 5 petals joined at the base, to 3 cm long, dirty white, densely silky hairy outside, 5 stamens. **FRUIT:** Large woody capsules to 30 cm, conspicuous hanging on the bare

tree, contain round black seeds with long silky white fibres—called kapok—around them.



Propagation

Seedlings, cuttings.

Seed

Seedlings. Sow seeds in pots or directly at site, or establish from cuttings. Pluck pods by hand when ripe but before they split open. After fibre is removed from the pod, the seeds can be separated from the fibre by beating it with a stick. Soak seed in cold water for 24 hours before sowing. Germination rate is 50–85%. Seeds are dispersed by wind.

Treatment: Soak seed in cold water for 24 hours.

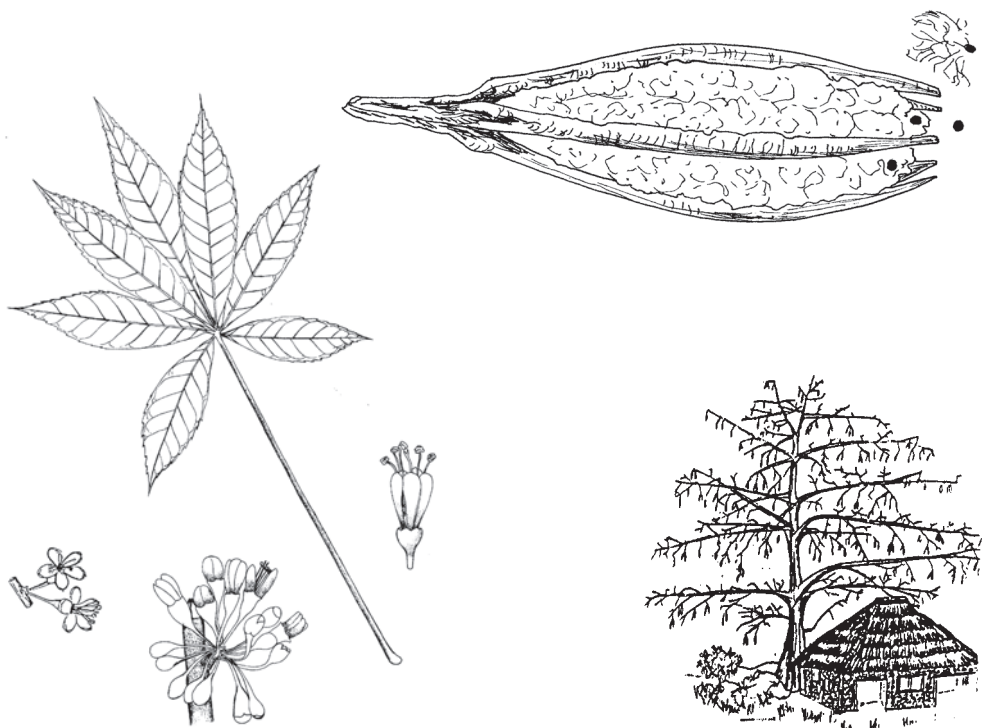
Storage: Seed are oily but can be stored up to a year in normal conditions. However, viability is gradually lost, so best to use fresh seed.

Management

Coppicing, lopping and pollarding.

Remarks

The wood is so soft it has few uses. Kapok fibre burns easily but is water-repellent and lighter than cotton. The unripe fruit and seed oil are edible and an important crop in parts of the world, such as Java, Thailand, Malaysia and Sri Lanka. Press cake from seed residue contains 26 % protein. Tree produces a high yield after 8–10 years with abundant rain in the growing season and a dry period for flowering and fruiting. Shallow-rooted and easily damaged by high winds. In West Africa, seeds are powdered and added to soup. Flowers open in the evening and are usually pollinated by bats.



Celtis africana

Ulmaceae



Indigenous

Ag: *Egua*
Am: *Amlaka, Kawoot*
Eng: *White stinkwood*
Kf: *Shishu*
Or: *Amalaqqa, Cheke, Meteqamma*
Sd: *Shishu*
Sm: *Bodar, Kidi*
Tg: *Haua, Hamat, Reway*

Ecology

A tree with a very wide range of habitats. It is common in dry evergreen, semi-arid or semi-humid lower highland forest. Grows well in Dry and Moist Kolla and Weyna Dega agroclimatic zones in all regions, 1,300–2,300 m.

Uses

Firewood, timber (local construction, farm implements), tool handles, fodder (leaves), shade.

Description

A deciduous forest tree about 12 m but reaching 35 m, with a spreading crown. BARK: Smooth, grey often marked with horizontal rings. Young shoots have rust-coloured hairs. LEAVES: Clearly 3-veined from the base of the oval leaves, rough and dull green above, hairs on veins below, edge toothed over top two thirds, base a little unequal, tip drawn out and pointed. FLOWERS: Very small, greenish, on thin stalks, in clusters beside leaves, female flowers above male flowers on the stalk. FRUIT: Yellow or orange, round and hairy, less than 1 cm on stalks about 2 cm long, hard seeds inside.

Propagation

Seedlings and wildings.

Seed

Fruit must be collected from the tree before they release the seed. The right time is when the fruits turn from yellow to brownish. They are then dried in the sun and the seed extracted through shaking when the drupes open. Germination within 60 days. 17,000 seeds per kg.

Treatment: Not necessary, but soaking in cold water for 24 hours may hasten germination.

Storage: Seed can be stored for some time if kept in airtight containers.

Management

Side pruning.

Remarks

The timber rots and splits easily, but is very strong and, with proper seasoning, makes good useful for tool handles and building. Animals, including cattle, eat the leaves while fruits are important in the diet of black and white colobus monkeys.



Celtis toka

Ulmaceae

Indigenous

Agn: *Lero*

Mjr: *Oleme*

Nur: *Riak*

Ecology

In Ethiopia, it grows in Moist Bereha and Moist and Wet Kolla agroclimatic zones of Gambella, Ilubabor and Gamo Gofa, 400 - 600 m, annual rainfall 1,400 - 2,000 mm.

Uses

Firewood, timber (construction), handles, farm implements, food (fruit), fodder (leaves).

Description

It is a huge tree to a height of 15 m and DBH of up to 1.2 m or more. BARK: dark, scaly especially on branchlets, often no scale on young branches, peels off easily from branches. LEAVES: tomentose, alternate, simple, pale green when young and dark green when old, 2-12 cm in length and 1.2-5 cm in width, with four coarse leaf veins radiating from its base towards tip, base asymmetric; petiole 2-10 mm long, margin entire. FLOWER: not conspicuous, yellowish green, flowers stalks short and many along the branchlets. FRUIT: globose, green when young and yellowish at maturity.



Propagation

Seedlings and wildings.

Seed

Treatment: No treatment required.

Storage: Can store in air-tight containers

Management:

Coppices well. Coppice reduction improves stem growth.

Remarks

Goats and cattle eat the leaves and people the fruits.

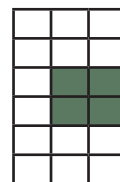


Chamaecytisus proliferus

(*Cytisus palmensis*, *Cytisus proliferus*,

Chamaecytisus palmensis)

Fabaceae



Canary Islands

Am: *Tree lucern*

Eng: *Tagasaste, Tree lucerne*

Ecology

Widely planted in the Mediterranean area and Australia as a browse and forage shrub. Also grown in USA, Latin America, India and some other African countries.

Recorded as invasive in Australia.

Introduced to Ethiopia in the 1980s. It is growing well in moist and dry highlands and could be successful in Moist and Wet Weyna Dega and Dega agroclimatic zones, 1,700–3,300 m. It grows best in high-rainfall cool highlands.

Uses

Firewood, fodder (leaves, pods), bee forage, mulch, nitrogen fixation, soil conservation, soil improvement, windbreak, live fence.

Description

An evergreen shrub or small tree to about 6 m. **LEAVES:** Compound with 3 stalked leaflets, the central largest to 7 cm, narrow and oblong to a pointed tip, narrowed to the base, stalk to 2 cm long. **FLOWERS:** White. **FRUIT:** Hairy pods to 5 cm long containing 8–10 small black seeds.

Propagation

Seedlings.

Seed

About 45,000 seed per kg.

Treatment: Inoculate the seed with cow-pea inoculums. Immerse the seed in hot water for a minute.

Storage: Seeds can be stored for 4–5 years.

Management

Plant seedlings when two months old. Harvest fodder frequently by pruning to encourage low, bushy and readily accessible re-growth and to reduce the amount of woody stems.

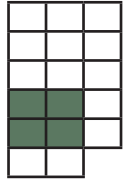
Remarks

Tolerates drought, repeated browsing or harvesting once established. The leaves are excellent fodder with a high food value. Small birds are fond of the seeds. Relatively free of pests and diseases, this species needs to be protected from grazers at first. Growth is slow until the deep roots are established.



Citrus aurantifolia

Rutaceae



Indonesia, India — naturalized

- Agn:** *Lemun*
Am: *Lomi*
Brt: *Al lemu*
Eng: *Lime*
Km: *Lomi*
Nur: *Lemun*
Or: *Lomi, Tuto*
Tg: *Lemin, Lemun*

Ecology

All plants in the citrus group originated in Asia, and limes probably came from Indonesia or India. This species is now cultivated throughout the tropics and in warm subtropics and it is the most widespread citrus in Ethiopia. It has become naturalized as a riverine tree or shrub at 1,000 m. It grows in Dry and Moist Kolla and Weyna Dega agroclimatic zones, up to 2,300 m. It is part of the natural forest in moist lowlands of North Shoa and Borena Negele.

Uses

Food (fruit), medicine (leaves, fruit).

Description

An evergreen shrub or much-branched tree to 5 m with very many short sharp spines on the stems and beside leaves. LEAVES: Oval, rather small, shiny green 4–8 cm, the leaf stalk with a narrow “wing”, an extra leafy growth and a “joint” with the leaf blade, edge smooth or round-toothed. FLOWERS: Both buds and flowers white, 1–7 flowers in a leaf axil, each about 2 cm across. FRUIT: Round or oval, to 6 cm diameter, but usually smaller, peel very thin, green or yellow, difficult to remove, pulp green, very acid but juicy.

Propagation

Seedlings. Seedlings are largely true to type because of polyembryo and budding is therefore not normally done. Air layering can be used for multiplication of genetically identical plants. It is common in South-East Asia where this is a common fruit tree. Refer to expertise to secure best propagation methods and good variety.

Seed

Treatment: Not necessary.

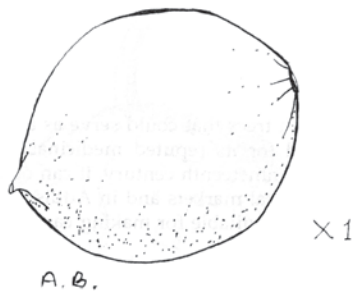
Storage:

Management

Observe good hygiene in order to minimize incidence of plant diseases. Pruning is generally recommended to shape the framework of the young tree and to eliminate crossing and inward-growing branches. Pruning also keeps the height easily reachable for picking.

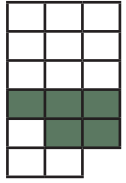
Remarks

A plant that is of economic importance because of its fruit. It normally starts bearing at around the age of 5 years.



Citrus medica

Rutaceae



South/South-East Asia

Am: *Tiringo*

Eng: *Citron*

Or: *Turungo*

Tg: *Tiringuin*

Ecology

Citron probably originated in the sub-Himalayan region of north-eastern India and upper Burma from where it has been taken to most tropical countries. Commercial planting of citron is limited to the Mediterranean region and to Puerto Rico. In Ethiopia, it is commonly cultivated in irrigated areas of Moist and wet Kolla and Dry, Moist and Wet Weyna Dega agroclimatic zones, 1,100—1,600 m. It is very sensitive to frost but does well in frost-free valley plains.

Uses

Food (fruit), medicine (leaves, fruit).

Description

An evergreen spiny shrub or small tree. LEAVES: Distinguished by having no “wing” on the stalk, and no joint to the leaf blade; the rather large leaves have a toothed edge. FLOWERS: Of two kinds, some losing the central ovary, petals white inside but pink-purple outside. FRUIT: Big and oval-oblong, yellow, the skin bumpy, 20–30 cm long. Most of the inside is thick white peel, with a small amount of very acid pulp around the seeds.

Propagation

Usually by leafy cuttings taken from 2—4 year-old branches. Citron can be budded onto rough lemon, grapefruit, sour and sweet orange, but the fruits remain smaller than those produced from cuttings. Citron also tends to overgrow the rootstock.

Seed

Usually not used.

Treatment:

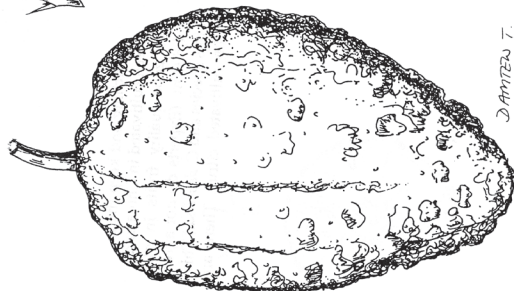
Storage: Can store.

Management

Observe good hygiene in order to minimize incidence of plant diseases. Water sprouts should be eliminated and low-hanging branches should be pruned to prevent the fruit touching the soil.

Remarks

This fruit is prized for its reputed medicinal properties. Cultivated since the nineteenth century, it can occasionally be seen for sale in local markets and in Addis Ababa. The thick aromatic peel is suitable for making candied peel. Citron is quite a delicate plant that tends to produce fruit throughout the year but without excessive harvests at any particular season. It is most suited as a home-garden tree.



D. AMTEU T.

Citrus reticulata

Rutaceae

S.E. Asia, Cochin China, Vietnam

Am: *Menderin*

Eng: *Mandarin, Tangerine*

Ecology

Presently mandarines are widely cultivated in all tropical and subtropical regions. In Ethiopia, it grows under rain-fed conditions in Moist and Wet Kolla and Weyna Dega agroclimatic zones. If irrigated, it grows even in Dry Kolla and Weyna Dega agroclimatic zone, 1,100–2,300 m.

Uses

Food (fruit).

Description

A small evergreen tree 2–8 m, sometimes spiny. LEAVES: Shiny dark green above, yellow-green below, narrowly oval to 8 cm long, the edge usually with widely spaced rounded teeth, the stalk very narrowly winged. FLOWERS: In leaf axils, about 2 cm across, 5 white petals. FRUIT: Typically bright orange when ripe but others staying green in Ethiopia. Fruit are rounded but flattened to 8 cm diameter. The peel is thin and loose. Inside the orange juicy pulp around the seeds is very sweet.

Propagation

Raise a rootstock of rough lemon and bud or graft good-variety mandarine on the rootstock. Alternatively, try air-layering. Seedlings are not recommended unless budded or grafted since they are normally not true to type.

Seed

Treatment: Normally not used.

Storage:

Management

Observe good hygiene in order to minimize incidence of plant diseases. Management of mandarin trees vary from area to area. Usually little pruning is carried out. The crop can be heavy and slender branches may require support.

Remarks

This fruit has always been cultivated in China and Japan. In Ethiopia, it produces good quality fruits in plantations between 1,100 and 2,300 m. (Experts do not agree on the difference between this species and the Mediterranean mandarins, *C. deliciosa*) This species is the hardiest of the cultivated citrus. There are many cultivars.

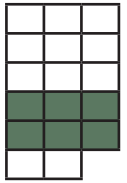
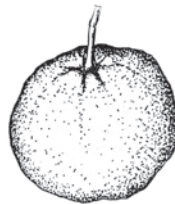
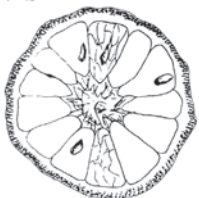




Photo: Patrick Maundu



A. B.



DAMITEN T

Citrus sinensis

Rutaceae



Southern China, Vietnam

Agn: *Lemunat*

Am: *Birtukan*

Eng: *Sweet orange*

Nur: *Lemun*

Or: *Birtukana, Birtukwani*

Ecology

No longer known as a wild species but now cultivated everywhere in the tropics and subtropics. It does generally better in the subtropics than in the tropics. In Ethiopia, it grows in Dry and Moist Kolla and Weyna Dega agroclimatic zones, best under irrigation, 1,000–2,000 m.

Uses

Food (fruit), juice (fruit).

Description

An evergreen shrub or tree, 6–12 m, twigs angled when young, often with thick spines. LEAVES: simple, alternate, spicy aromatic when crushed, Oval, 5–15 cm x 2–8 cm, shiny dark green above, the stalk narrowly winged, having a line or break with the leaf blade (articulation). FLOWERS: Very fragrant, one or many in leaf axils, 2–3 cm across, 5 white petals, 20–25 stamens in groups, style with a round stigma. FRUIT: Rather variable in colour and shape, rounded green-yellow-orange, 4–12 cm across, the relatively thin skin hard to remove, the pulp surrounding the seeds sweet-sour but juicy.

Propagation

Budding onto rootstock of other citrus, for example on rough lemon or on special rootstock cultivars. Root stock grows from seed very easily.

Seed

Treatment: Not necessary.

Storage:

Management

Observe good hygiene in order to minimize incidence of plant diseases. Pruning to encourage branching and keep the tree low. This allows easy harvesting of the fruit.?

Remarks

The most widely cultivated citrus in plantations giving good quality fruits. The climate in Ethiopia allows oranges to be produced throughout the year. They eaten and used to make juice. There are many cultivars of the sweet orange. Desirable cultivars are nowadays grafted onto rootstock trees that are themselves grown from seed.

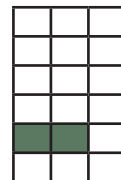


DAMTEW T.



Combretum aculeatum

Combretaceae



Indigenous

Am: *Zenfok, Ungo*

Or: *Kalade, Totofe*

Sm: *Shuna-shuna*

Tg: *Aflot, Kato, Mellu*

Ecology

The northernmost of the tropical African Combretum, found from the Atlantic to the Red Sea and in East Africa in Acacia-Commiphora and Combretum woodland and bushland, usually along watercourses. In Ethiopia, it grows in riverine forests in Dry and Moist Kolla agroclimatic zones of Tigray, Gonder, Welo, Kefa, Gamo Gofa, Sidamo, Bale and Harerge, 300–1,600 m.

Uses

Firewood, fodder (leaves, fruits), fencing material (dry branches), local brooms.

Description

A deciduous thin scrambling shrub to 4 m, young branches with red-brown hairs, later yellow-brown, hairy. LEAVES: Usually pale green, small, 4–7 cm, wider at the rounded tip, which may be notched, hairy both sides, only 4–6 pairs of veins, very clear below. On older twigs the leaf stalk becomes a hooked spine, hairy, over 1 cm long. FLOWERS: Yellowish-white, fragrant. FRUIT: Small, green-yellow-brown with 5 papery wings, almost round to 2 cm, tip notched, on a thin stalk to 1 cm.

Propagation

Seedlings (sow seed in pots), wildings.

Seed

Collect the winged fruit before they are too dry.

Treatment: Open the winged fruit to get the seed before sowing or soak in cold water for 24 hours.

Storage: Seeds cannot be stored for long. Use fresh seed. Once the seed is extracted it should be sown immediately. It is difficult to extract the seed from very dry fruits.

Management

Coppicing, produces root suckers.

Remarks

A preferred browse of wild and domestic animals. Leaves and fruits are good fodder for cows and said to increase milk production.



Combretum collinum

Combretaceae



Indigenous

Am: *Tinjut*

Eng: *Variable combretum*

Or: *Alahingale, Dabacha, Dandale, Gomori*

Tg: *Sawa*

Ecology

A tree widespread in tropical and subtropical Africa from West Africa into the Sudan and Ethiopia, throughout East Africa and south to southern Africa. It occurs in arid and semi-arid savannah, steppe, and scrub in Acacia, Combretum-Terminalia, woodland and wooded grasslands with incense trees (*Boswellia* spp.). It grows in Dry and Moist Kolla and Weyna Dega agroclimatic zones, 400–2,000 m.

Uses

Firewood, medicine (leaves), bee forage, fencing (cut branches).

Description

A small- to medium-sized tree 4–12 m, most variable and many subspecies have been separated on details of leaf arrangement, fruit size, hairiness and scales. BARK: Red-brown when young, later grey, rough, scaly and thick. LEAVES: Difficult to describe as they vary greatly both in size and other details. Usually rather tough, not thin, darker above than below. The underside is densely dotted with tiny silvery scales only visible with a lens. Leaves hairy or not, usually ovate 9 x 4 cm but they may reach 22 x 8 cm, the side veins 6–20 pairs. Leaf stalk 1–4 cm. FLOWERS: Cream-white-yellow, sweet-scented and very

small, on spikes about 6 cm long, usually shorter than the leaves. The tree stands out when covered with flowers. FRUIT: 4-winged, the shape variable but generally oval 2.5–5.5 cm, rust-red when young, later dark golden-brown, even grey to purple, dull, hairy or shiny. The many scales catch the light so the surface shines like metal.

Propagation

Seedlings (sow seed in pots), wildings.

Seed

Collect the winged fruit before they are too dry.

Treatment: Open the winged fruit to get the seed before sowing or soak in cold water for 24 hours.

Storage: Seeds cannot be stored for long. Use fresh seed. Once the seed is extracted it should be sown immediately. It is difficult to extract the seed from very dry fruits.

Management

Coppicing, lopping, pollarding.

Remarks

Four subspecies are recognized in Ethiopia. The hard and durable wood burns well and makes very good charcoal. It is used to smoke brewing and milking pots. The smoke is also believed to repel evil spirits.



Photos: Patrick Maundu



Photo: Patrick Maundu



Combretum molle

Combretaceae



Indigenous

Am: *Agalo, Avalo, Bagur*

Brt: *Hasbnur*

Eng: *Velvet-leaved combretum*

Gmz: *Begoha*

Or: *Bika, Dandamsa, Didegsa*

Tg: *Anfarfaro, Haziba, Weiba*

Sh: *Begoha*

Ecology

A tree widespread in the wooded grassland and bushland of East and southern Africa, also in Yemen, it has a number of varieties. The tree tolerates forest or grass fires well. Widespread in *Combretum* and *Combretum-Terminalia* woodlands and wooded grassland and bushlands in Dry and Moist Kolla and Weyna Dega agroclimatic zones in most regions of Ethiopia, often on stony hills, 500–2,200 m.

Uses

Firewood, charcoal, timber (construction), poles, posts, tool handles, medicine (roots, leaves, bark), bee forage, mulch.

Description

A small deciduous tree, to 15 m, the trunk often crooked and branching near the base. BARK: Distinctive, older trunks dark brown-black, deeply grooved in squares like “crocodile skin”. Branchlets peeling in fibrous strips. LEAVES: Large, soft and hairy both sides, up to 21 x 12.5 cm, rounded at the base, tip pointed. FLOWERS: Greenish-yellow spikes to 10 cm, sweet scented, attracting insects, produced before or with new leaves. FRUIT: 4-winged, yellow-green at first

drying bright golden-brown, up to 2 cm. Wings wider than the fruit. Fruit may hang on the tree until the next season.

Propagation

Seedlings (sow seed in pots)

Seed

Collect the winged fruit before they are too dry.

Treatment: Open the winged fruit to get the seed before sowing or soak in cold water for 24 hours.

Storage: Seeds cannot be stored for long. Use fresh seed. Once the seed is extracted it should be sown immediately. It is difficult to extract the seed from very dry fruits.

Management

Slow growing. Lopping and coppicing

Remarks

The species is very variable. The hard, yellow wood burns well giving intense heat. The wood is moderately termite resistant.



Photo: Patrick Maundu



Photo: Patrick Maundu



Commiphora africana

Burseraceae



Indigenous

Ag: *Qwa*
Am: *Anqa*
Eng: *Commiphora*
Ga: *Dogama, Zunsie*
Or: *Hamessa*
Sm: *Kobbok*
Tg: *Anqwa*

Ecology

Widely distributed in the drier parts of Africa from Senegal, east to Somalia and south to South Africa. In Ethiopia, it grows in *Acacia*, *Acacia-Commiphora*, *Combretum-Terminalia*, and *Commiphora-Boswellia* woodland, wooded grassland and bushland, often on rocky slopes, in clay or sand in dry areas. This tree is typical of much thorny bush, open savanna and desert of Dry and Moist Kolla agroclimatic zones in Tigray, Gonder, Welo, Wolega, Kefa, Shoa, Gamo Gofa, Sidamo, Bale and Harerge regions, 500–1,900 m.

Uses

Firewood, utensils, food (fruit), drink (bark tea), fodder (for camels, goats), medicine (roots, bark, fruit, resin), live fence, gum-resin.

Description

Often a spiny shrub but may become a tree to 6–10 m, the trunk a straight cylinder bearing many horizontal spiny branches. Most shoots are spine-tipped. **BARK:** Grey-green, the thin shiny surface peeling off, showing green below. Old bark squared and grooved. When cut a yellow resin drips out and hardens. Youngest shoots

hairy. Deciduous, bare for many months.

LEAVES: Soft, bright green and hairy, compound with 3 leaflets, central one much longer than the other two (can be 10 times larger), edge wavy, round-toothed, fragrant when crushed. **FLOWERS:** Small, red, tubular, in tight clusters, often on thorns on the bare tree. **FRUIT:** Pink-red, soft, about 1 cm, pointed, a stony seed inside.

Propagation

Large cuttings.

Seed

Only propagated by cuttings.

Storage:

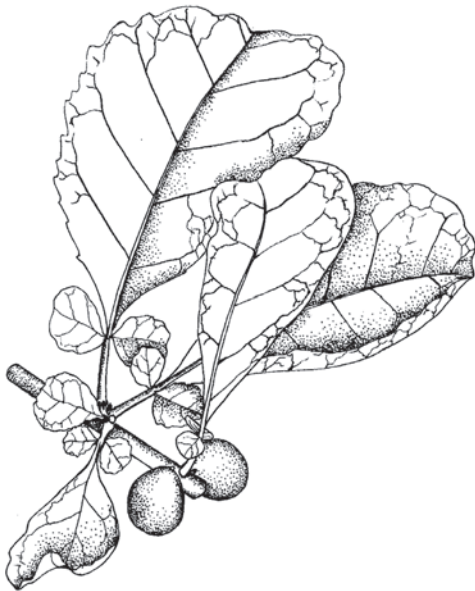
Treatment:

Management

Slow growing. Lopping.

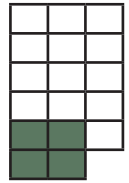
Remarks

Two varieties are recognized in Ethiopia. Leaves contain bitter tannin and are, therefore, cattle do not browse them, but they are important fodder for camels and goats. It comes into leaf just before the rains.



Commiphora erythraea

Burseraceae



Indigenous

Ko: *Gahadito*

Or: *Hagar, Hagar-ad, Hagar-medow, Hagarso, Hagarsu*

Sm: *Hagar, Hagar-ad, Hagar-medow*

Ecology

A tree of north-eastern Africa, Ethiopia, the Sudan, Somalia, Arabia and extending south into northern Tanzania. In Ethiopia it is found in *Acacia-Commiphora* woodlands, wooded grassland and bushlands, dry coastal bushlands, often on rocky slopes in Bereha and Dry and Moist Kolla agroclimatic zones of the Afar Plain, Sidamo, Bale, Harerge and Shoa and Arsi (within Awash Valley) regions, up to 1,500 m.

Uses

Incense (resin), insecticide (resin).

Description

A sizeable tree 6–20 m. Mature trees have a trunk to 5 m before branching, 30–50 cm in diameter. Young twigs grey-green and hairy. BARK: Smooth blue-grey, often with pink spots. The outer bark peels away in yellow-white flakes, large and thin, to reveal blue-green underbark. A cut shows red layers and yellow sap. LEAVES: Compound, usually 3 leaflets, sometimes on a grooved stalk to 7 cm (can be hairy, grey-green). The edge of the leaflet is round-toothed, the middle leaflet longest, to 9 cm, narrowed to the base. FLOWERS: Produced with the leaves, green-yellow and tiny, 1–5 on a hairy stalk to 4 cm long. FRUIT: Ovoid but flattened, 1–3 on stalks, each about 1 cm long, smooth or hairy with a stony seed inside.

Propagation

Seedlings, cuttings.

Seed

Treatment:

Storage:

Management

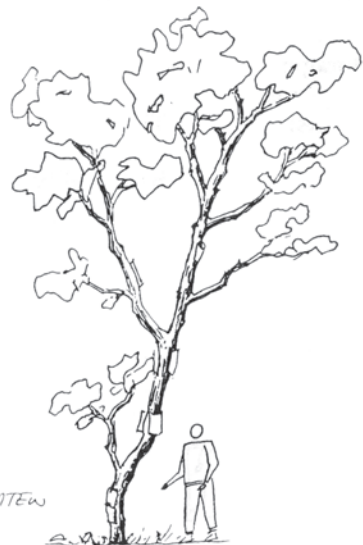
Lopping, pollarding, coppicing.

Remarks

This is a very variable and valuable species that is a dominant part of the vegetation over large areas of southern Ethiopia. The resin is used as an insecticide by the Borena people and it is also used for incense.



fru



Commiphora habessinica

Burseraceae

Indigenous

Am: *Anqwa*

Or: *Chalanga*

Tg: *Anqwa*

Ecology

Found in association with Acacia and Balanites, in sandy to loamy and black-cotton soil in Bereha and Dry and Moist Kolla and Weyna Dega agroclimatic zones of Gonder, Gojam, Wolega, Shoa, Harerge, Ilubabor, Gamo Gofa, Sidamo and Bale. It is common on the Afar Plain and in Tigray and Welo regions, 150–1,900 m.

Uses

Firewood, live fence, myrrh or balm (resin).

Description

A spiny shrub or tree up to 4 m, side shoots spine-tipped. BARK: Grey-brown, black and cracked into squares on old trees, branchlets smooth, purple-brown. Peeling bark comes off in large papery strips across the underbark. LEAVES: Usually simple but 1–3 clustered together on spiny side shoots, narrow oval to 4 cm x 2 cm, the edge with small rounded teeth. FLOWERS: 1–3 together, very small, yellow-green-pink on cushion-like side branches. FRUIT: About 1 cm, oval to rounded with a small pointed beak, containing a stony seed.



Propagation

Seedlings, cuttings.

Seed

Treatment: No need.

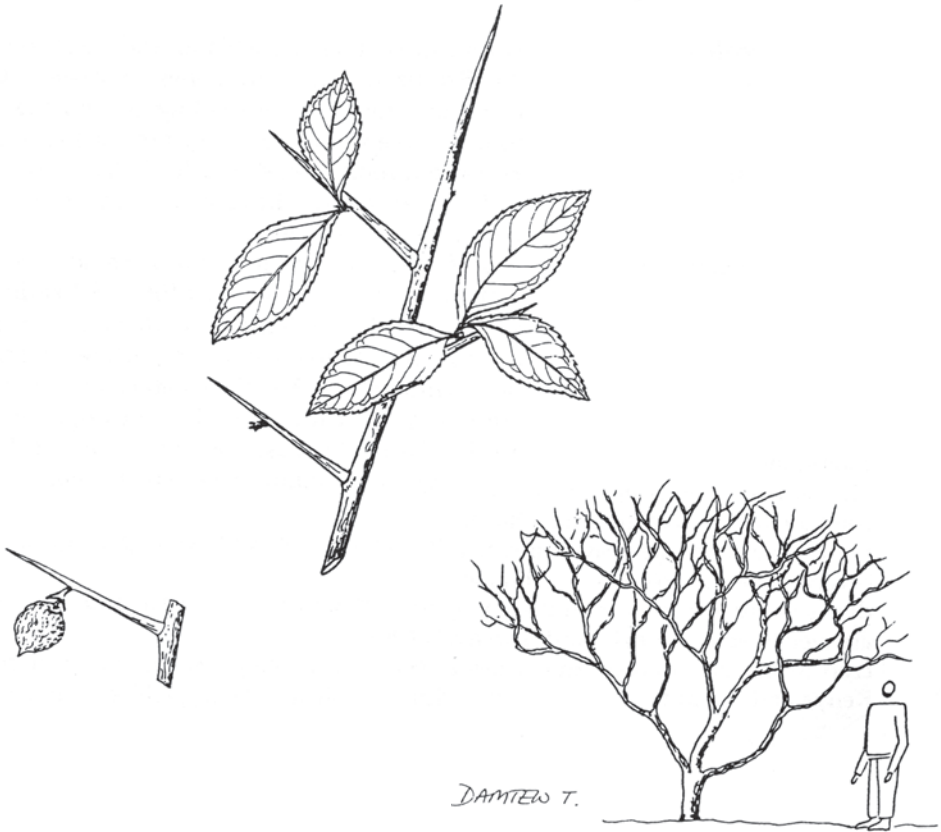
Storage: Can be stored.

Management

removing branching stems early on helps to develop leading trunk for better resin production.

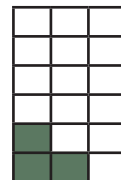
Remarks

This species, *C. erythraea* and other *Commiphora* are all used locally for their fragrant resin. Another species, *C. myrrha* produces the best-quality myrrh collected commercially in southern Ethiopia, Somalia and the Arabian peninsula.



Cordeauxia edulis

Fabaceae



Indigenous

Eng: *Yeheb nut*

Sm: *Ehb, Qud, Quda*

Ecology

Found naturally in semi-arid bushland and scrub in sandy soils of the Bereha agroclimatic zones in eastern Ogaden in Harerge region and extending to Somalia, 0–600 m in Dry Kolla and Dry Bereha plus Moist Bereha agroclimatic zones. It has been introduced and cultivated in other countries. The roots go deep to tap underground water.

Uses

Firewood, food (seeds), fodder (foliage), bee forage, mulch, soil conservation, nitrogen fixation, live fence, dyes (red dye from leaves), tannin.

Description

A stiff erect evergreen shrub or small tree, 2 m, with red glands on stems and leaves. LEAVES: Leathery, compound, with 1–6 pairs of leaflets, each one to 3 cm long, oval-oblong, the underside covered with red glands, FLOWERS: Buds with glands, 5 yellow petals, over 1 cm long. FRUIT: Pods only 4–6 cm long with a thin upturned beak. Inside are 1–4 fat oval seeds, the “nuts”, each 2–4 cm long.

Propagation

Seedlings, self-seeding once established.

Seed

Before an age of 3 years a young plant may bear a few pods, but once 3–4 years old it will yield prolifically under good conditions. Good germination, over 80% when fresh. About 300 seed per kg.

Treatment: Not necessary.

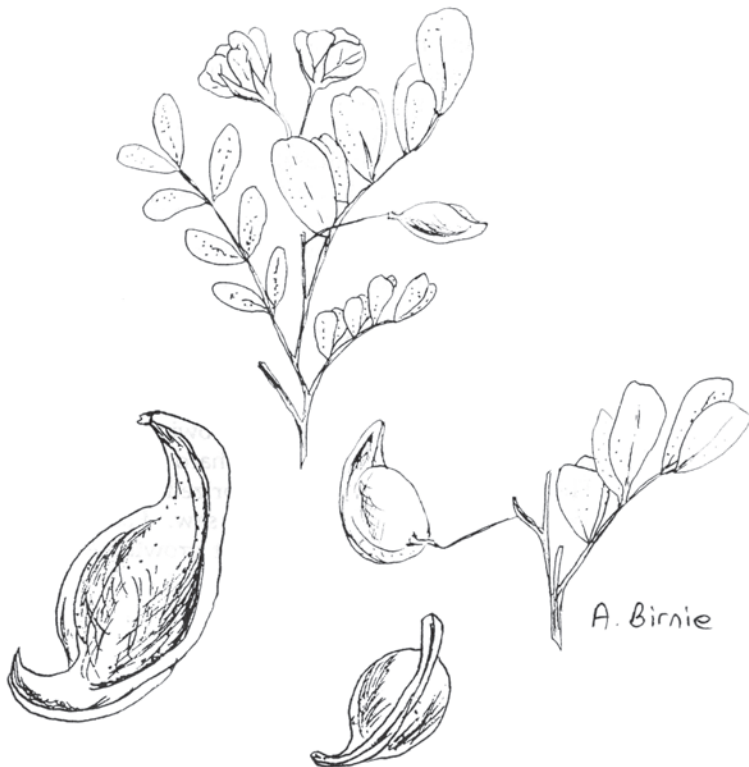
Storage: Seeds are susceptible to insect attack so should not be stored for long.

Management

Slow growing during the initial stages while establishing its massive root system; young seedlings develop a strong tap root before shoots. Coppicing.

Remarks

The leaves have a high tannin content. It used to be a common tree in Somalia where the nuts are used as food by pastoralists and the leaves as tea. Now it has become rare due to over-exploitation during famine. A red dye is easily extracted from the young stems. As the seeds are well liked and nutritious, the tree has potential as a food crop in the driest areas, and it has already been tried in Kenya and Tanzania.



Cordia africana

Boraginaceae

Indigenous

Ag: *Bugitsi*
Am: *Wanza; Anu: Urogu*
Brt: *Abanga*
Eng: *Large-leaved cordia*
Gim: *Giku*
Gmz: *Banja*
Gr: *Odesha*
Mjr: *Dampaeu, Dampae*
Nur: *Urogu*
Or: *Diho, Wodesa*
Sm: *Wadicho*
Tg: *Auhi, Ekhi*

Ecology

From Guinea in West Africa east to Ethiopia and south to South Africa; also in the Arabian Peninsula. A tree common in Polyscias and Podocarpus forest, as a forest remnant in cultivated areas, and is used as a shade tree in coffee plantations. It grows well in Dry, Moist and Wet Weyna Dega agroclimatic zones in almost all regions, 900–2,500 m.

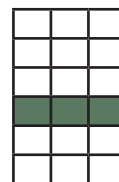
Uses

Firewood, timber (furniture, beehives, boxes, mortars), food (fruit), medicine (juice from bark, roots), fodder (leaves), bee forage, shade, ornamental, mulch, soil conservation.

Description

A much-branched deciduous tree with rounded crown and often crooked trunk, to 25 m, from a short bole. BARK: Grey or pale brown, finely grooved but rough with age. LEAVES: Large, oval, 20 x 15 cm, base rounded, veins prominent below; young shoots, leaf stalks, underside

of leaves covered with soft brown hairs. FLOWERS: Showy, funnel shaped, thin white petals, sweet scented and attractive to bees. FRUIT: Yellowish, 1 cm in hairy cups. Flesh sticky and edible, each fruit containing 4–6 seeds embedded in one stone.



Propagation

Wildings, seedlings. Sow in seed bed, separate carefully the germinants coming from one stone and prick out into pots.

Seed

Germination rate is 50–80% in 40–60 days, slow and uneven germination. Fruits should be de-pulped immediately after collection by rubbing over a wire mesh under flowing water. Sand can be added to facilitate the process. Pulp and stones can then be separated by floating in water. 2,500–4,500 stones per kg; each stone contains several seed (multi-germ).

Treatment: None required.

Storage: De-pulped fruit can be stored for some time.

Management

Requires 5–7 months in a nursery before planting out. Easy to raise and reasonably fast growing. Pollarding, lopping, coppicing.

Remarks

The heartwood is hard and durable and takes a good polish, so the timber is prized for furniture, but can be twisted and difficult to saw. Plantations should be dense to encourage straight growth. The tree tends to branch heavily if planted in full sunlight. Provides good mulch. A useful tree for homesteads and in crop land.



Croton macrostachyus

Euphorbiaceae

Indigenous

Am: *Bisana*

Eng: *Broad-leaved croton*

Gmz: *Beroha*

Gr: *Bekenissa, Mekenissa*

Or: *Ankowa, Bakanissa, Bakano, Dogoma, Makanissa*

Sh: *Beroha*

Sm: *Masincho, Wush*

Tg: *Islami, Tambush*

Ecology

Found more or less throughout tropical Africa from Guinea eastwards to Ethiopia and south to Angola, Zambia, Malawi and Mozambique. Widespread on forest margins, along roadsides, and in *Juniperus-Podocarpus* habitats. It grows mostly in soils of volcanic origin in Dry, Moist and Wet Weyna Dega, and Dega, as well as in upper altitudes of Dry Kolla agroclimatic zones in all regions, 1,100–2,500 m.

Uses

Firewood, charcoal, timber, poles, tool handles, medicine (sap, leaves, roots, bark), fodder (young leaves), bee forage, mulch, soil conservation.

Description

A deciduous tree, crown rounded, light and open with slender trunk and spreading branches, reaching 25 m. BARK: Pale grey, fairly smooth when young and longitudinally fissured when old. LEAVES: Large and heart-shaped, to 15 x 10 cm, crowded at the end of branchlets on long stalks to 10 cm, veins prominent, and 2-stalked glands just visible at the leaf base. Leaf edge with a few widely spaced teeth,

paler below due to soft hairs. FLOWERS: Creamy yellow, sweet scented in erect spikes to 25 cm, all over the tree. Flowers appear only briefly, the flower spike turning down as fruits mature. FRUIT: Pea-sized capsules on drooping spikes to 30 cm, split open to release 3 shiny grey seeds with a cream aril.



Propagation

Seedlings, wildings.

Seed

16,000–27,000 seed per kg. Seeds usually damaged by insects while on the tree. Damaged seeds are black inside. Before collecting, check that inside of seeds are white-cream coloured. Collect the fruit and sun-dry to get seeds released.

Treatment: Not necessary; check that the inside is white-cream coloured.

Storage: Seeds store for a short period only since they are oily.

Management

Fairly fast growing on good sites, slow on drier sites. Lopping, pollarding, coppicing.

Remarks

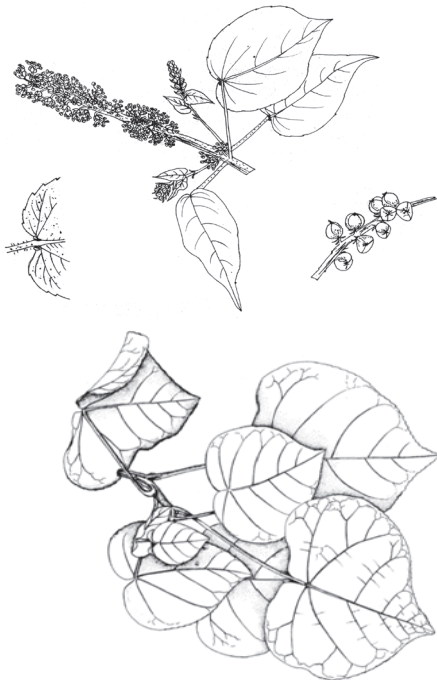
Seed and resin are poisonous. When cut for firewood it has an unpleasant spicy odour and is not always popular for that purpose. It is a good tree for inter-cropping. The fruit and decoctions of the roots are used as a medicine for venereal diseases. Pulverized bark together with dried *Hagenia* flowers is an effective purgative. The soft lightwood is very perishable; not a good timber tree.



Photo: Patrick Maundu



Photo: Patrick Maundu



Cupressus lusitanica

Cupressaceae



Mexico, Guatemala

Am: *Yeferenji-tid*

Eng: *Mexican cypress*

Ecology

The Mexican cypress originates from the moist mountain forests of Mexico and Central America. After the eucalypts it is one of the commonest plantation trees in Ethiopia. It grows best in Dry, Moist, and Wet Weyna Dega and Dega agroclimatic zones. The tree is only moderately drought resistant and requires deep moist soils.

Cypress aphid in Ethiopia

Uses

Firewood, timber (furniture, construction), poles, posts, shade, ornamental, windbreak, live fence.

Description

A large evergreen conifer to 35 m with a straight trunk, generally conical but not regular in shape, branches wide spreading. The branchlets grow in many planes and branches hang down. BARK: Red-brown with vertical grooves, grey with age.

LEAVES: Dull blue-green, in 4 ranks, with spreading pointed tips. CONES: Male cones like fat tips on branchlets, produce clouds of yellow pollen; female cones round, 1.5 cm across, waxy-grey colour when young. Cones ripen in 2 years becoming brown, scales open to release many winged seeds. Scales have a central thin “peg”.

Propagation

Seedlings.

Seed

Germination rate about 30-45% in 10-20 days. 160,000–290,000 seed per kg. The right time for collection is when the cones start to turn brown. After collection the cones are dried in the sun until they open. The seeds can then be separated from the cones by shaking on a sieve. Sow in a seedbed and prick out in pots.

Treatment: Not necessary.

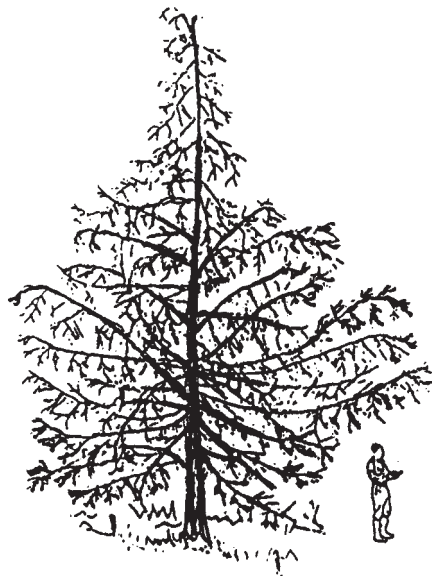
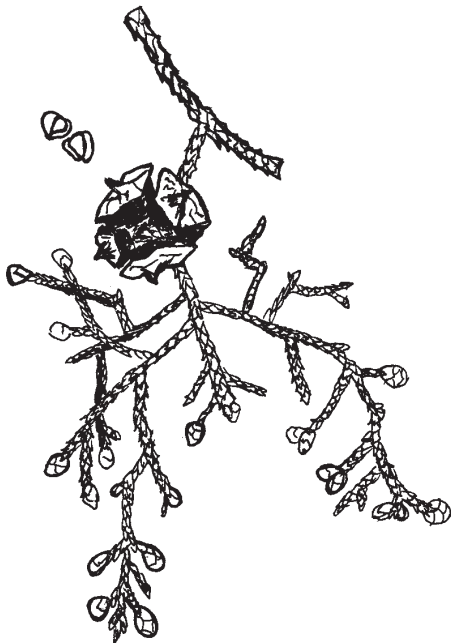
Storage: Seed can be stored for some months but the viability is gradually reduced.

Management

Fast-growing on good sites, moderate on poorer sites. Weeding during early establishment. Pruning and thinning of trees in woodlots managed for timber production, trimming if grown as a live fence.

Remarks

Cypress can produce poles after 10 years and general-purpose timber in as little as 20 years. The tree is susceptible to *Monochaetia unicornis* (canker) pathogen and *Oemida gabani* woodborer. From Ethiopia and Kenya and south to Malawi, cypress plantations have been badly affected by a cypress aphid and many thousands of trees have died in recent years.



Cyathea manniana

Cyatheaceae

Indigenous

Eng: *Spiny tree fern*

Kf: *Sesno*

Ecology

Usually found in wet shady forests in the river valleys of Wet Kolla and Weyna Dega agroclimatic zones. Commonly found along the road from Tepi to Mizan in Ilubabor region. It is a lower-storey tree in humid rain forest, often with *Podocarpus* and *Albizia*.

Uses

Construction material (woody stems).

Description

This tree fern is usually up to about 6 m but can reach 10 m with a trunk 15 cm in diameter. It tends to lean over. The trunk is covered with brown scales and the spiny bases of old leaves. Mosses and small ferns fill the spaces in between. **LEAVES:** Arching fronds 2–3 m long crowning the stem, leaf blade divided, leaf edges deeply lobed. The lower parts of the leaf stalk, the leaves and stem all have sharp spiny thorns. The fruiting bodies (sori) lie along the veins on the underside of the leaflets.

Propagation

Vegetative propagation from underground stems (rhizomes).

Seed

Propagation is not from seed.

Treatment: Seed is not used.

Storage: Not applicable.

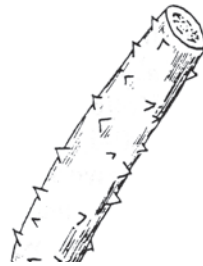
Management

Prefers humid and shaded environment. Do not grow it in the open. Pruning the lower branches improves the base quality.

Remarks

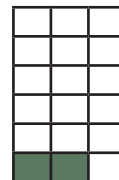
Strongly shade demanding. The woody stems are used for house construction as they resist both termites and decay. It is strong wood.





Dalbergia melanoxylon

Fabaceae



Indigenous

Am: *Zobbi*

Eng: *African blackwood, African ebony*

Or: *Moghano*

Ecology

A small tree native to tropical Africa and India. Widely spread from northern Ethiopia, south to Angola and the northern part of South Africa and west to Senegal. The tree prefers areas with a high water table. In Ethiopia, found in lower Dry Kolla agroclimatic zones associated with *Entada abyssinica* and *Combretum* spp. and also in Moist and Wet Kolla and Weyna Dega zones of Tigray and Gonder, 600–1,900 m in Ethiopia but to the coast in East Africa.

Uses

Firewood, timber (construction), carving, walking sticks, medicine (decoctions from bark and from roots, boiled leaves), fodder (fruit, leaves), bee forage, nitrogen fixation.

Description

A spiny shrub or tree much branched from the base, 5–12 m, the bole diameter no more than 20–30 cm, often twisted. Branchlets, grey-white some becoming thorns and bearing the leaves. **BARK:** Smooth, pale grey becoming rough, flaky and darker with age. **LEAVES:** Compound, on stalks to 20 cm long, leaflets 9–13, each leaflet small, 1–2 cm, the tip rounded or notched. **FLOWERS:** Very small and white in sweet-scented branched sprays, to 12 cm long. **FRUIT:** Bunches of thin flat pods, 3 to 7 cm long, papery and pointed both ends with 1–2 seeds inside.

Propagation

Seedlings, wildings, cuttings.

Seed

Pods left on the tree are soon attacked by insects, so collection of ripe grey pods should be done quickly. With pods, 6,000–16,000 seeds per kg; about 42,000 clean seeds extracted from pods. Good germination rates: 50–60% in 8–20 days. Water sparingly so seed does not rot.

Treatment: Break pods into short pieces, each with one seed, soak in cold water for 6 hours and then sow. Complete extraction of seed from the pod is difficult, but if done, there is no need for soaking.

Storage: Seed will store well if kept free from insects.

Management

Slow growing. Coppices and produces root suckers. Side prune to get a clear bole.

Remarks

The very hard, durable, termite-resistant, purple-black heartwood is very valuable for special uses such as musical instruments and carvings.



Photo: Patrick Maundu



Photo: Patrick Maundu



Dalbergia sissoo

Fabaceae



India, S.E. Asia

Eng: *Sissoo*

Ecology

Cultivated in Shoa. Grows in high-rainfall areas, tolerating a variety of soils. It performs well in Moist and Wet Kolla agroclimatic zones, 700–1,600 m; can also grow at lower altitudes provided there is ground water. In India, it grows up to 300m.

Uses

Firewood, charcoal, timber (construction, furniture), poles, posts, tool handles, carvings, fodder (pods, leaves), bee forage, shade, ornamental, nitrogen fixation, soil conservation, soil improvement, windbreak, oil (seeds), tannin (bark).

Description

A medium to large tree, 10–15 m in dry areas but up to 30 m on good sites, with a light crown, the bole often crooked. LEAVES: Compound, about 5 leaflets alternate on a stalk to 15 cm, each leaflet widest at the base, to 6 cm long with a fine pointed tip, clear veins raised above, on a flexible 0.5 cm stalk. FLOWERS: In dense clusters on stalks to 10 cm, pink-white, “pea-flower” shaped. FRUIT: Very many oblong pods, flat, thin and papery, to 7 cm, pale brown when dry, the 1–3 seeds visible within.

Propagation

Seedlings, direct sowing at site, stump cuttings prepared by cutting the shoot at

5–10 cm height and a 10 cm long portion of the root from bare root cuttings. These stumps can be planted with good results. This is the common method used in India and Nepal.

Seed

Germination rate $\pm 70\%$. About 55,000 seed per kg.

Treatment: Not necessary to extract seeds from the pod. Break pod and soak in cold water for 48 hours.

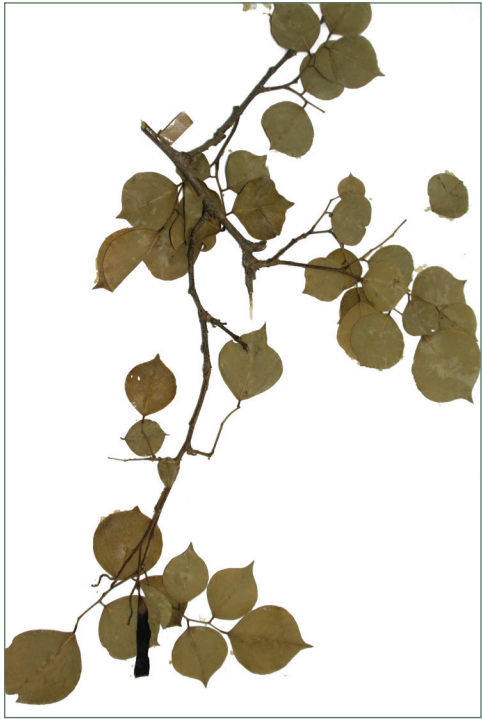
Storage: Can be stored for up to a year if kept free from insects.

Management

Lopping, pollarding and coppicing. Produces root suckers. Thorough weeding is necessary for saplings.

Remarks

Fresh leaves may cause digestive disorders when fed to livestock during the dry season. This problem is eliminated if leaves are converted into silage. A taproot develops quickly in the seedling and will penetrate stony soils to the water table becoming deeply rooted. Long surface roots hold soil together and so help prevent erosion. The dark brown heartwood is a durable timber and makes excellent firewood and charcoal.



Delonix regia

Fabaceae



Madagascar

Am: *Dire Dawa zaf, Gorade*

Eng: *Flamboyant*

Ecology

Now very rare in the wild of its native Madagascar, this deciduous tree is grown throughout the lowland tropics. Prefers sandy soil. Widely planted in Bereha and Dry and Moist Kolla agroclimatic zones, especially at Dire Dawa, 200–1,600 m.

Uses

Bee forage, ornamental, shade, ornamental, avenue tree, beads (seeds).

Description

A medium-sized deciduous tree with an umbrella crown, reaching a maximum 15 m. BARK: Grey, smooth. LEAVES: Compound, up to 45 cm long, light green and feathery, leaflets numerous, each less than 1 cm long. FLOWERS: Brilliant scarlet-red-orange in clusters, others appearing on the bare tree, each flower to 10 cm across with 5 petals, one cream and heavily spotted. FRUIT: Heavy flat pods to 75 cm long remaining many months on the tree. When dry they break open to release oblong seeds.

Propagation

Seedlings (sow seeds in pots), direct sowing at site.

Seed

Seeds prolifically. High germination rate. About 2,000 seed per kg.

Treatment: Immerse seed in boiling water for 5 minutes and allow to cool, or nick the seed coat.

Storage: Seed can be stored for long periods, as it is not damaged by insects.

Management

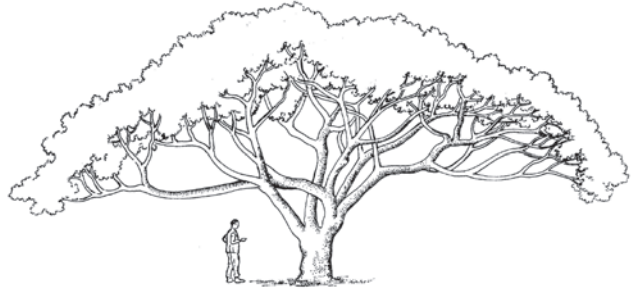
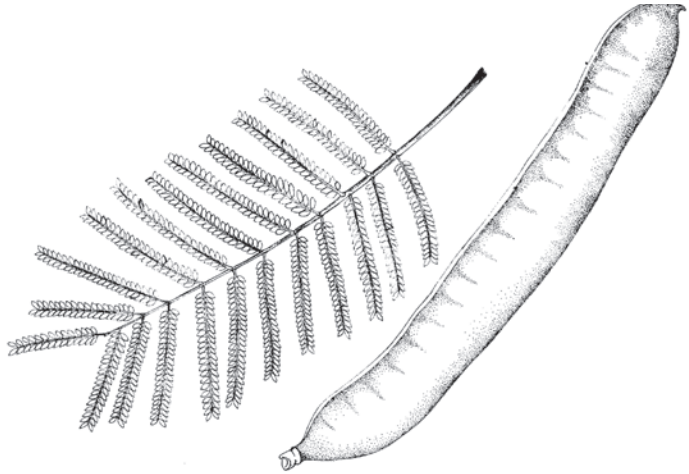
Fast growing; pollarding. May grow well but take a long time to flower in cooler climates (>1,500 m), and when it finally does, flowering is poor.

Remarks

A fast-growing species which has a shallow root system, making it unsuitable to grow near buildings. The dense canopy prevents its use for intercropping. It is a popular avenue tree.



Photo: Patrick Maundu



Dichrostachys cinerea

Fabaceae



Indigenous

Am: *Ader, Ergett-dimmo*

Sm: *Dhigdar, Galool-sur*

Or: *Adesa, Hatte, Jirme, Worsamesa*

Tg: *Gonnok*

Ecology

A species widely distributed in tropical Africa with numerous subspecies. In Ethiopia it is found in a variety of habitats: open grassland, river banks, rocky hillsides, coastal plains, often in Dry and Moist Kolla agroclimatic zones of nearly all regions, 400-2,000 m.

Uses

Firewood, charcoal, poles, posts, tool handles, medicine (leaves, roots), fodder (leaves, pods), bee forage, nitrogen fixation, soil conservation, fibre (bark), live fence, fencing material (cut branches).

Description

A small shrubby tree, although it can reach 6 m. The feathery leaves show it is close to the genus *Acacia*. BARK: Grey, thick and fibrous. Thorns short and single, alternate and slightly hooked. LEAVES: Compound, leaflets narrow, slightly hairy, to 1 cm. FLOWERS: In two-coloured heads, upper half pink, lower half yellow. They hang on a thin stalk 2–5 cm long. FRUIT: Brown to black, twisted cluster of thin flattened pods. Each spiral pod contains 4 seeds. The pods fall to the ground and rot to set free the seed.

Propagation

Seedlings, wildings, direct sowing at site.

Seed

The tree seeds prolifically when in open land.

Treatment: Immerse seed in hot water, allow to cool and soak for 24 hours.

Storage: Can be stored for several years at room temperature if kept dry and free from insects. Add ash to reduce insect damage.

Management

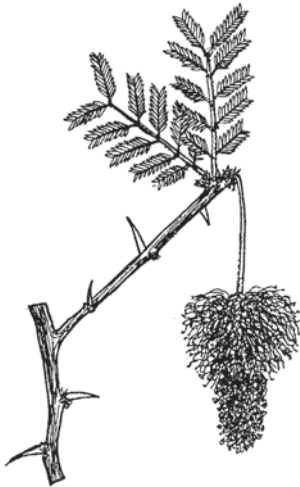
Coppicing, lopping and pollarding. Produces root suckers.

Remarks

The tree can be an aggressive weed, has vigorous root suckers and can form a dense thicket. The timber is very heavy and hard, but of small dimensions. This species probably has the most beautiful flower in the family but its use as an ornamental is limited because of its thorns.

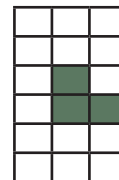


Photo: Patrick Maundu



Diospyros abyssinica

Ebenaceae



Indigenous

Am: *Selechegn*
Eng: *Giant diospyros*
Or: *Lokko*
Tg: *Aira, Zellimo*

Ecology

A widespread African forest tree found in West Africa as well as East Africa, generally in rainforest, lower montane forests, especially in drier sites and upper slopes, often in shallow soils underlain by murram. In Ethiopia, it occurs in dry evergreen woodland, humid and semi-humid lowland woodland, semi-humid and humid highland forests in Moist and Wet Weyna Dega, and Moist Dega agroclimatic zones in nearly all regions, 500–2,400 m.

Uses

Firewood, charcoal, timber (furniture, local construction), implements, walking sticks, tool handles, shade.

Description

A tall evergreen tree with a straight, slender trunk about 20 m but reaching 40 m in forests. It has a small mushroom-shaped crown. LEAVES: Shiny dark green, long oval to 16 cm, narrowing to the tip, the edge wavy, midrib clear below. The short stalk is grooved. Dry black leaves can be seen below a tree. FLOWERS: Small, white and fragrant in clusters beside the leaves. FRUIT: Round to 1.5 cm across held in a cup-shaped calyx, about 1 cm long, the tip pointed, red-yellow then black when ripe. Sometimes in dense clusters.

Propagation

Seedlings.

Seed

2,500–3,000 seed per kg.

Treatment: Not necessary.

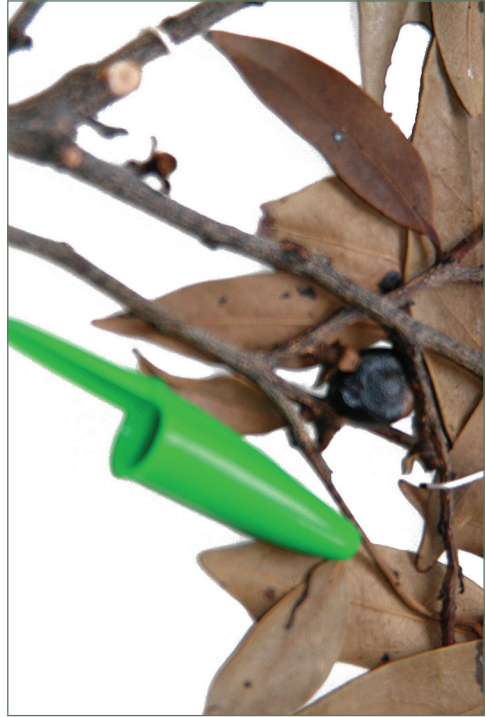
Storage: Seeds store for several years. Add ash to reduce insect damage.

Management

Generally slow growing in its natural habitat. Pruning, pollarding, coppicing.

Remarks

The wood is pale, hard and tough, difficult to plane and not durable. The heartwood is darker. Though a mixed-forest species, it grows fairly fast when planted in farmland, thus quickly yielding good firewood and low-quality building poles.



Diospyros mespiliformis

Ebenaceae



Indigenous

Agn: *Adew*

Am: *Ayeb*

Eng: *African ebony*

Mjr: *Dimmin*

Tg: *Ayeb*

Ecology

An evergreen tree of medium to low altitudes found in West, East and southern Africa in woodland, savanna and along river banks. In Ethiopia, it occurs mostly on rocky hillsides in lowland savannah, Euphorbia thickets and along river banks in Bereha, Dry, Moist, and Wet Kolla and Weyna Dega agroclimatic zones in most regions, 300-2,000 m.

Uses

Firewood, timber (construction, furniture), carving, walking sticks, food (fruit: fresh, fermented drink), medicine (bark, roots, fruit), bee forage, shade.

Description

A medium to large tree, to 25 m. There may be a tall clear bole from a buttressed base to the dense rounded crown. Young parts have silvery hairs. **BARK:** Grey-black, rough and squared, grooved. **LEAVES:** Alternate, shiny dark green, to 14 x 3 cm, the midrib raised below, edge wavy, tip rounded. **FLOWERS:** Fragrant, male clustered, female solitary, cream-white petals, 1 cm long. **FRUIT:** Rounded to 2.5 cm in a calyx cup, the 5 segments curling back, fruit yellow, later purplish, pulp soft and sweet with 4–6 brown, hairy seeds.

Propagation

Seedlings, cuttings.

Seed

Because of competition by birds, the collection should be immediately after the fruit start to turn yellow, and therefore from the crown. About 2,700–3,200 seeds per kg. Germination is good but fairly slow – within 50 days under ideal conditions, 2,700–3,200 seed per kg.

Treatment: Not necessary.

Storage: Depulp, clean under running water and dry in the sun if seed is to be stored. It can be stored for long periods in airtight containers.

Management

Pruning, coppicing, pollarding. Slow growing, but faster along rivers.

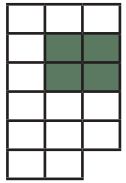
Remarks

Diospyros spp. produce valuable black heartwood, “ebony”. Only a few trees yield the black wood after felling. Pale at first, the timber gradually becomes dark brown. The wood is hard and tough with a fine grain. It is fungus and termite resistant. Sapwood cream-white, heartwood yellowish pink, darkening on drying and with age. The fruit can be eaten fresh or dried, or in the form of a fermented drink.



Discopodium penninervum

Solanaceae



Indigenous

Ag: *Alumi*
Am: *Ameraro*
Or: *Aja'a, Mararo*
Tg: *Albem*

Ecology

A shrubby species growing at the margins of evergreen cedar and *Podocarpus* forests and woodlands, usually in Dry, Moist and Wet Dega and Wurch agroclimatic zones Tigray, Welo, Gojam, Shoa, Harerge, Arsi, Sidamo and Kefa regions, 2,100-3,100 m.

Uses

Firewood, farm tools (especially 'digir'), live fence.

Description

Shrub or small tree up to 5 m high, stems slightly fleshy, branchlets brown, hairy.
BARK: Smooth, pale to dark brown.
LEAVES: Very large and oval, to 25 x 10 cm, edge wavy. FLOWERS: Yellow-green-white, very small, in bunches beside the leaves; the triangular calyx lobes bend back.
FRUIT: Orange-yellow berries, about 1 cm across.

Propagation

Cuttings, seedlings.

Seed

Treatment: No need

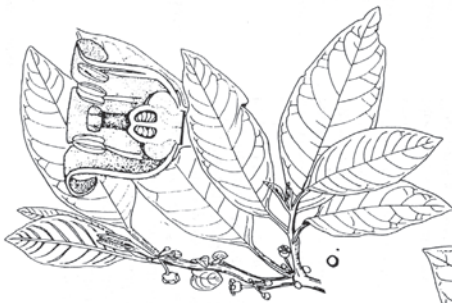
Storage: Can be stored in dry and air-tight containers

Management

Pollarding, lopping, coppicing.

Remarks

The large leaves are used locally for baking bread.



DAMTEW T

Dobera glabra

Salvadoraceae

Indigenous

Af: *Garas*

Tg: *Geresa*

Sm: *Garas, Haras*

Ecology

Distributed in north-east Africa, south to Uganda and Kenya and also in India. In Ethiopia, it occurs on rocky hillsides in dry areas and in saline, heavy, or calcareous loam soils. It does well in Dry and Moist Kolla agroclimatic zones in Shoa (Awash), Harerge, Bale and Sidamo, 400–1,300 m.

Uses

Firewood, timber (local use), utensils (containers, mortars, water troughs), food (fruit, seeds), fodder (leaves), shade, tooth brushes (stems), gum.

Description

A much-branched, evergreen shrub or tree to 8 m. **BARK:** Green to dark grey and patchy. **LEAVES:** Opposite, yellow to grey-green, thick, smooth, veins hardly seen, up to 7 cm long, tip usually notched. **FLOWERS:** White, in branched heads. **FRUIT:** Ovoid to 2 cm, with 1–2 flat seeds in soft edible pulp.



Propagation

Direct sowing at site, wildings, seedlings (sow in pots).

Seed

About 1,400 seed per kg. Germination 60—80% from fresh and carefully extracted seed within 40—60 days.

Treatment: Not necessary.

Storage: Seeds do not store well. Use fresh seed.

Management

Slow growing but very hardy once established.

Remarks

The fruits and seeds are a very important food during times of drought. It is sensitive to water logging.

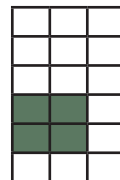


Photo: Patrick Maundu



Dodonaea viscosa

Sapindaceae



Indigenous

Ag: *Kerara*
Am: *Kitkita*
Br: *Hidesa*
Eng: *Hop bush*
Sd: *Itancha*
Or: *Etacha, Tedecha*
Sm: *Den, Hayramat*
Wt: *Geregetwa*

Ecology

This tree has a wide natural range – Australia, India, tropical and subtropical Africa. It does well in a wide range of climates and soils. A pioneer species in disturbed ground. Widespread in Ethiopia in a variety of habitats, from riverine forest to rocky soils or arid marginal areas in Dry and Moist Kolla and lower Weyna Dega agroclimatic zones in almost all regions, 1,000–2,700 m.

Uses

Firewood, charcoal, poles, tool handles, medicine (decoctions from leaves and twigs, boiled roots), bee forage, soil conservation, windbreak, live fence, tooth brushes.

Description

A thin-stemmed shrub or small evergreen tree, 3–8 m with a light crown. All parts are smooth and resinous when young. **BARK:** Dark grey, grooved, peeling. Branchlets red and sticky. **LEAVES:** Simple, up to 13 cm long, tip pointed, thin, narrow, stiffly erect, tapering to a stalk; young leaves light green, shiny and sticky. **FLOWERS:** Green-yellow, male and female separate, insignificant. **FRUIT:** Very many distinctive

capsules, each 2 cm across with 2 - 3 papery wings, sometimes inflated, green-red-pink, appearing like “blossom”, becoming light brown, small seeds inside.

Propagation

Seedlings, wildings, direct sowing at site.

Seed

Germination rate 30–70 % after bout 15 days. About 100,000 seed per kg.

Treatment: Not necessary.

Storage: Seed can be stored for up to a year.

Management

Fast growing. Little or no management required once established.

Remarks

The species is not browsed and therefore easy to establish. The wood is hard and heavy but the stem has a rather small diameter. A good live fence for dry areas, susceptible to fire but regenerates rapidly after bush fires. It is especially useful in reclaiming poor land, including marshes to sand dunes.



Dombeya torrida* subsp. *torrida

(*D. goetzenii*)

Sterculiaceae

Indigenous

Am: *Wulkeffa*

Or: *Danissa*

Tg: *Sonkuah*

Ecology

An under-storey timber tree of wetter highland forests of East Africa and Ethiopia. In Ethiopia, it is common in the semi-humid highland woodlands and forests with *Juniperus*, *Arundinaria*, *Hagenia*, *Celtis*, *Podocarpus* and *Olea capensis*. It grows in all regions in Dry, Moist and Wet Weyna Dega, Moist and Wet Dega and Moist Wurch agroclimatic zones, 1,600–3,400 m.

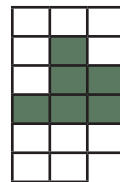
Uses

Firewood, timber (house construction, turnery), poles, farm tools, bee forage, mulch, soil improvement, string, cloth (bark).

Description

A shrub or much-branched tree, 12–15 m, with a shady umbrella crown and a trunk diameter about 50 cm. BARK: Grey and smooth, only lightly grooved with age; clear breathing pores (lenticels); inner bark thick, orange-brown, very fibrous. LEAVES: Large, hairy and heart-shaped, the leaf bases overlapping, to 30 cm long, tip pointed, edge sharply toothed, vein network very clear below with 5 or more veins radiating from the centre. Young stems and leaf stalks often red. FLOWERS: Often abundant,

pale pink or white, full of nectar, in showy clusters on branched hairy stalks to 30 cm, calyx of 5 hairy sepals, 5 petals rounded but one-sided, red-purple in centre; many stamens with orange anthers; 5 pink stigma. Petals remain around the fruit, turning yellow-brown as they dry. FRUIT: Oval capsules to 1 cm, densely hairy, about 10 small brown seeds inside.



Propagation

Seedlings.

Seed

About 235,000 seeds per kg. Under good conditions, the seed will germinate in 15–20 days. After drying the capsules in the sun for 2–3 days, the seed can be separated from the dried capsules by rubbing or by threshing the capsules lightly in a bag. The latter method is recommended because the fine hairs of the fruit may irritate the eyes.

Treatment: Not necessary.

Storage: Seed can be stored in airtight containers.

Management

Coppicing, lopping, pollarding.

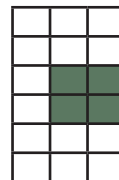
Remarks

Bark fibre may be used to make cloth or string. The tree is considered a good place for beehives because it produces some of the best nectar. High-quality soil may be found below as fallen leaves produce rich mulch. The timber is soft and lightweight but strong, and easy to saw and plane. The heartwood is dark brown but the rest of the wood is uniformly pale.



Dovyalis abyssinica

Flacourtiaceae



Indigenous

Am: *Koshim*

Or: *Anggo, Ankakute, Dugo, Kurawa*

Sm: *Ongolatz*

Tg: *Aihada*

Ecology

This shrubby tree is found from Ethiopia, Somalia and Socotra south to Malawi in upland rainforest, dry evergreen forest, on river banks and sometimes in more open woodland. In Ethiopia, usually found along river courses in humid lower highland forest and *Juniperus* and *Podocarpus* forest, of Moist and Wet Weyna Dega and Dega agroclimatic zones in most regions, 1,700-3,000 m.

Uses

Food (fruit), medicine (leaves), bee forage, live fence.

Description

An evergreen spiny shrub or tree to 8 m, crown rounded. BARK: Grey, spines to 4 cm long. Branchlets with very clear dotted breathing pores (lenticels). LEAVES: Shiny, dark green, oval, to 5 cm, tip blunt, edge unevenly rounded. FLOWERS: Green sepals, females single but male flowers in clusters with many stamens. FRUIT: A round berry about 2 cm across, surrounded by the calyx, green and hairy at first then smooth orange-yellow, with edible sweet-sour flesh around the seeds.

Propagation

Seedlings (sow in seedbed and prick out).

Seed

Collect the ripe fruits to get seed.

Treatment: After collection the fruits are soaked in water for 2–3 days. The water is then drained off and the fruits squeezed by hand to separate the seeds from the pulp. After washing, the seeds can be dried and stored for a short time.

Storage: Use fresh seed for best results.

Management

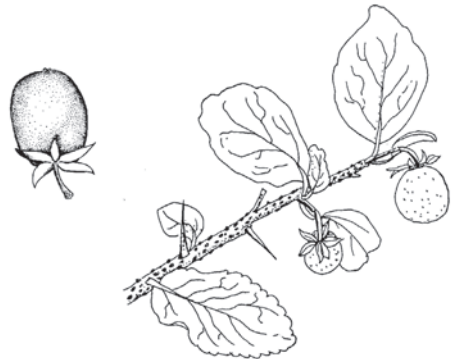
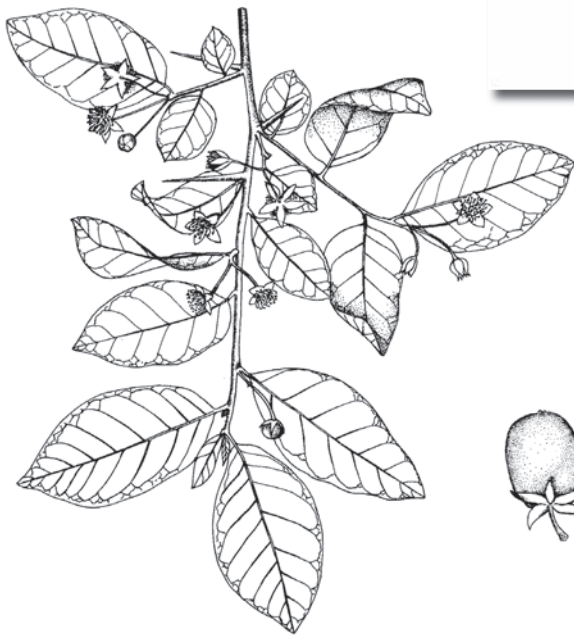
Lopping, coppicing.

Remarks

The fruit is edible but acidic; excellent for jelly.

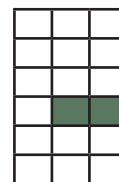


Photo: Patrick Maundu



Dracaena steudneri

Dracaenaceae



Indigenous

Am: *Itsepatos, Moata*

Eng: *Dragon tree, Steudner's dracaena*

Gr: *Areg*

Kf: *Yudo*

Or: *Lankuso, Showiye*

Sm: *Tonkich*

Ecology

A tree distributed from Ethiopia and East Africa to southern Africa in moist or drier forest. In Ethiopia, it is an under-storey tree in humid lower highlands and *Cordia* and *Olea* forests, particularly in wetter and less dense or disturbed parts; also planted as an ornamental in large gardens and parks. Prominent in Moist and Wet Weyna Dega agroclimatic zones in Tigray, Gonder, Ilubabor, Gojam, Wolega, Shoa, Harerge, Kefa and Sidamo, 1,500-2,000 m. It can be seen as a remnant of former forest in Gojam (Finote-selam) and in Shoa.

Uses

The leaves are used to wrap the dough in baking the local bread known as 'dabo' in Amharic. The tree is ornamental and is also used to mark farm boundaries.

Description

An evergreen tree, usually 15 m but up to 18 m. The trunk often branches from the base with large branches rising steeply. Near the ground the base may be swollen. **BARK:** Smooth, grey-red-brown, with horizontal leaf scars. **LEAVES:** Dark shiny green crowding the branches like palms, the leaves over 1 m long and 12 cm wide, strongly fibrous, with no clear veins

but the centre thickened, the edge wavy. **FLOWERS:** Pale white-yellow-green, 6 narrow petals joined in a tube, in tight clusters all over a big flowering head about 1 m high. **FRUIT:** Small green berries, becoming red then black and juicy, about 1 cm across; eaten by birds. The angular branchlets remain for some time and turn orange.

Propagation

Cuttings.

Seed

Spread out on a dry cement floor to dry the whole fruit.

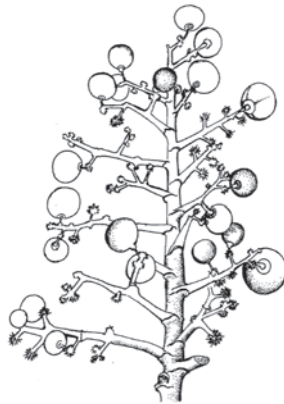
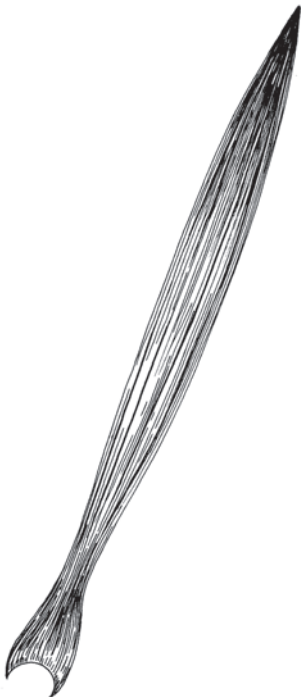
Treatment: Not necessary.

Storage: Better to use cuttings than to store seed.

Management

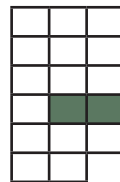
Fast growing. Little or no management required once established.

Remarks



Ehretia cymosa

Boraginaceae



Indigenous

Am: *Game*

Kf: *Wagamo; Kmb: Oolagecho*

Or: *Hulaga, Ulaga, Garmi*

Sd: *Uraga*

Tg: *Kurruak*

Ecology

An African tree distributed from West to eastern Africa and south to southern Africa, some in bushland, others in riverine forest. In Ethiopia, it commonly occurs in evergreen forest and forest patches, usually on steep mountainsides in the Weyna Dega agroclimatic zones in nearly all regions, 1,400–2,300 m.

Uses

Firewood, timber (furniture), farm tools, medicine (root juice applied externally on wounds), fodder (leaves), bee forage, mulch.

Description

A deciduous shrub or tree 2–9 m, often branching from the base, with weak drooping branches. LEAVES: Oval but wide or narrow to 20 cm x 12 cm, the tip pointed, base rounded, on a stalk 1–3 cm. The leaf is rarely flat and bubbles up between the veins. Veins are raised below and have hairs. FLOWERS: In loose large heads to 15 cm across (only), on hairy stalks, often covering the tree. The small flowers are white-yellow-pink, quite fragrant. The divided style and brown-black anthers hang out of the bell-like flowers. FRUIT: Ripen October to December in large heads. Round orange-red and berry

like, the fruit turn black. Each is pointed and breaks into 4 parts, each containing a hard, comma-shaped seed.

Propagation

Seedlings, direct sowing at site.

Seed

About 20,000–30,000 seeds per kg. Cut the fruiting head when 80% of the fruits are mature to extract the seed.

Treatment: Not necessary. Germination starts in three days but may continue for 5 weeks

Storage: Seeds can be stored for some time.

Management

Fast growing. Pruning, pollarding, lopping and coppicing.

Remarks

The light, durable wood is often used to make yokes for oxen. Roots and leaves are poisonous to people but the root juice helps heal wounds. There are two varieties in Ethiopia: var. *divariata* and var. *silvatica*. The latter occurs in rain forest and riverine forest.



Ekebergia capensis

(*E. rueppeliana*)

Meliaceae



Indigenous

Ag: *Churi*

Am: *Lol, Somb, Teselimo*

Or: *Duduna, Sombo*

Ecology

A medium-sized to large African tree, very variable and widely distributed from Senegal to Ethiopia and south to South Africa; first described in the Cape Province, thus the name 'capensis'. In Ethiopia, it is widely distributed in a variety of habitats, often used as a shady meeting place in open grassland. It occurs in Dry, Moist and Wet Weyna Dega and Dega agroclimatic zones in all regions, 1,600–3,000 m.

Uses

Firewood, timber (furniture, light construction), poles, tool handles, medicine, fodder (leaves), bee forage, shade, ornamental, soil conservation, windbreak.

Description

A tree reaching 20–30 m, occasionally higher. BARK: Grey-brown and rough with age; a cut is red with white streaks, branchlets dotted with whitish breathing pores. LEAVES: Compound, mostly crowded at the ends of branches on stalks to 30 cm long, leaflets 3–6 pairs plus one, shiny green but some hairs below, up to 15 cm long, leaf blades unequal-sided. FLOWERS: In loose sprays, up to 8 cm, each flower small and white and heavily scented. FRUIT: Rounded, 1–2 cm long, thin-skinned and orange on long stalks, drying and splitting to set free 2–4 seeds.

Propagation

Seedlings, wildings, use of cuttings said to be possible but not the recommended method.

Seed

Good germination from fresh seed. 2,900–8,600 seed per kg.

Treatment: Not necessary but soaking the seed in cold water for 24 hours may improve germination.

Storage: Seeds do not store for long. Use fresh seed.

Management

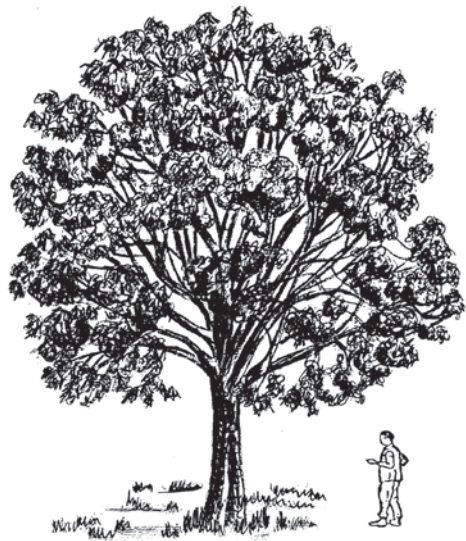
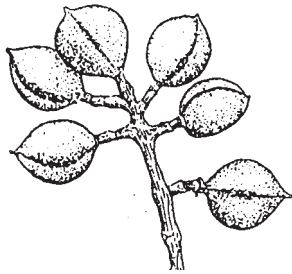
Fairly fast growing, coppicing.

Remarks

Wildings are used most commonly for propagation. The light pale wood with an even grain makes attractive furniture.

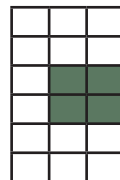


Photo: Tadesse Wolde Mariam



Embelia schimperi

Myrsinaceae



Indigenous

Ag: *Enkoki*

Am: *Enqoqo*

Gr: *Enqoqo*

Or: *Hanku*

Sd: *Kanko*

Tg: *Enqoqo*

Ecology

Widespread in West Africa from Nigeria and Cameroon, east to the Sudan and south to Angola, Zambia, Zimbabwe and Malawi. In Ethiopia, it is usually found as an under-storey tree in semi-humid highland forest with *Celtis*, *Podocarpus*, *Juniperus*, *Ekebergia* and *Pouteria* in Moist and Wet Weyna Dega and lower Dega agroclimatic zones in almost all regions, 1,700–2,800 m.

Uses

Firewood, medicine (fruit), against tapeworm.

Description

A tree to 7 m but often a shrubby climber. BARK: Smooth red-brown. Twigs without hairs but with raised pale dots, the breathing pores. LEAVES: Oval, wide or narrow to 8 cm x 4 cm, tip rounded, narrowing to the base, a red midrib and stalk to 2 cm. The midrib and 15 or more side veins are raised below. FLOWERS: Green-white-cream and tiny, on a hairy stalk from the leaf axil. FRUIT: Very many on stalks, each rounded, 6 cm across, red when ripe, tipped by the old style, one seed inside.

Propagation

Seedlings, wildings.

Seed

15,000–20,000 seed per kg.

Treatment: Not necessary.

Storage: Can be stored for several years.

Management

It should be grown with other light-demanding trees to give it support and the shady environment it requires.

Remarks

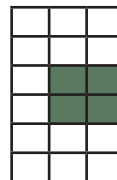
The fruits are commonly sold in shops as a medicine against tape worm. The leaves are reported to be edible and used as a mild stimulant among cattle herders in East Africa.



Ensete ventricosum

(*E. edule*)

Musaceae



Indigenous

Ag: *Gangi*

Am: *Enset, Guna-guna, Koba*

Eng: *Wild banana*

Gr: *Aset, Koba*

Hd: *Wesa*

Kf: *Kocho*

Km: *Wese*

Or: *Koba, Weke, Wese, Worke*

Wt: *Uta, Yecha*

Ecology

Like the common banana, this fleshy perennial which is tree-like is a giant herb. Outside Ethiopia it also grows in Cameroon, the Sudan, East and Central Africa and south to South Africa. In Ethiopia, it grows in wet upland valleys and ravines and along streams in the forests of lower mountain slopes, 1,000–2,700 m. In south-central Ethiopia enset is extensively cultivated for food up to 3,000 m in Moist and Wet Weyna Dega and Dega agroclimatic zones in nearly all regions.

Uses

Food (stems, rootstock), medicine (stem decoction), ornamental, soil conservation, fibres (stem, leaf, midrib), thatch (leaves), beads (seeds).

Description

A leafy herb 6–12 m, swollen below, the “false stem” formed by the leaf bases.

LEAVES: Large leaves grow in spirals, each one to 6 m long and 1 m wide, bright green with a thick pink-red midrib and a short red stalk. The leaf blades tear with

age. FLOWERS: In large hanging heads 2–3 m long, the white flowers with 1 petal protected by large dark red bracts, 5 stamens produce sticky pollen. FRUIT: Although the small yellow clusters look like normal bananas they are not edible. Each leathery fruit, about 9 cm long, contains many hard seeds, brown-black to 2 cm long with only a thin layer of pulp. The whole plant dies down after fruiting.

Propagation

Suckers are normally used, but seedlings can be raised too.

Seed

Seed are contained in the finger-like fruit and freed on ripening.

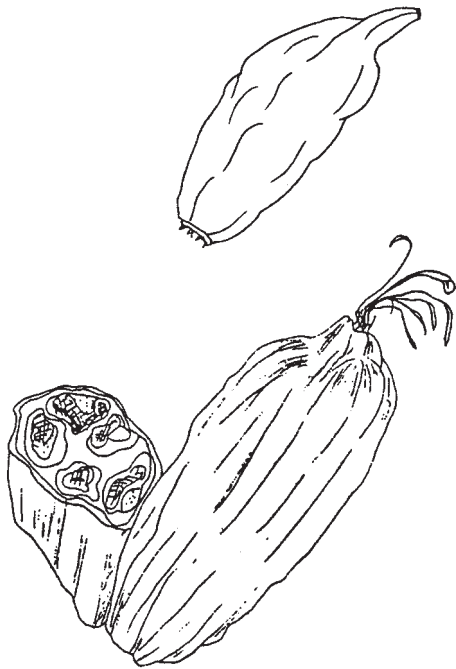
Treatment: No treatment required.

Management

Fast growing.

Remarks

Ensete differs from *Musa*, the true banana, in the terminal head of flowers, its large seed and by dying after fruiting. The leaf blades make a good durable thatch and the midrib a strong fibre for rope or sacking. A meal or flour is made from the pulp inside the stem and rootstock. Pollination is commonly brought about by bats transferring the sticky pollen.



Entada abyssinica

Fabaceae

Indigenous

Am: *Kentefa, Kontir*

Or: *Amazaze, Ambalta, Hambalta*

Ecology

A small tree of woodland and wooded grassland, widespread in Africa from Sierra Leone to Eritrea and south to Angola. In Ethiopia, it is found in Dry, Moist and Wet Kolla and Weyna Dega agroclimatic zones in almost all regions, 1,300–2,050 m.

Uses

Firewood, medicine (roots), shade, nitrogen fixation, live fence, fencing material (dry branches).

Description

A deciduous tree without thorns, 3–10 m, dense, leafy, spreading crown, flat or rounded. BARK: Grey-brown, rough or smooth. LEAVES: Compound, feathery like acacia, 4–22 pairs of pinnae on a stalk about 13 cm long, pink when young, the leaflets narrow about 1 cm, tip rounded. FLOWERS: Cream-white-yellow in upright spikes, long and narrow to 16 cm, sweet scented. FRUIT: Woody pods which are long and wide, to 39 x 8 cm, straight but wavy. The central one-seeded sections break away from the woody rim of the pod, leaving a pod skeleton on the tree. About 10 papery winged seeds are released.



Propagation

Seedlings.

Seed

Germination commonly around 70 %.
3,600–4,200 seed per kg.

Treatment: Not necessary.

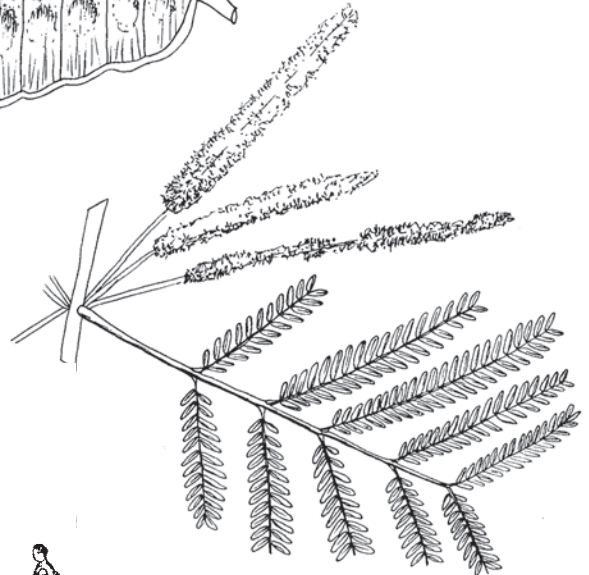
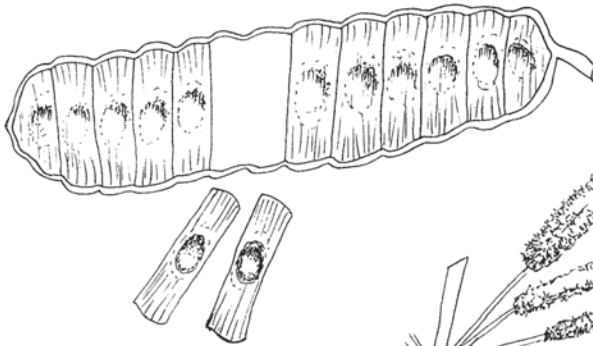
Storage: Can be stored, but best to use fresh seed.

Management

Fast growing on good sites, pollarding, coppicing.

Remark

The tree has pale brown, occasionally pink-tinged heartwood and is moderately light and easy to work but is rarely used.



Erica arborea

Ericaceae

Indigenous

Am: *Adale, Asta, Wuchena*

Eng: *Giant heath*

Gr: *Gederra*

Or: *Wadadi, Sato, Labasse*

Tg: *Shanto*

Ecology

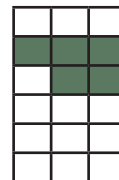
A large species for this family, typical of African highlands. It grows on dry rocky ground with thin soils in Moist and Wet Dega and Wurch agroclimatic zones, 2,500–3,300 m.

Uses

Firewood, charcoal, fodder (leaves, shoots), bee forage, live fence, fencing material (dry branches).

Description

A much-branched evergreen shrub or narrow tree to 5 m. **LEAVES:** Grow closely around the stems as in most heaths, narrow and pointed, grey-green and tough, to 1 cm long. Branchlets hairy. **FLOWERS:** Abundant, white-pink, at the ends of short side shoots. Each flower is like a tiny hanging bell, the purple stigma outside the white flower. **FRUIT:** A capsule containing many tiny seeds.



Propagation

Seedlings are less successful, wildings may do better.

Seed

40,000–50,000 seed per kg.

Treatment:

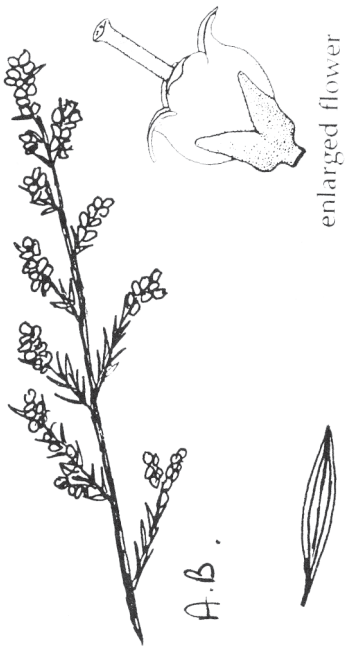
Storage:

Management

Coppicing.

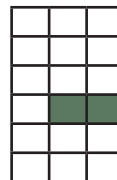
Remarks

Seeds are very tiny and difficult to harvest. Branches are burnt to smoke out new beehives. The branches make a useful fence around homesteads.



Eriobotrya japonica

Rosaceae



China, Japan

Am: *Wosbmella*

Eng: *Loquat*

Ecology

A small evergreen tree very widely planted in its native China, Japan and northern India, and also in the Mediterranean. In Ethiopia, it is mainly planted in cities and towns, 1,500–2,400 m. It grows well in Moist and Wet Weyna Dega agroclimatic zones. Requires moderate to heavy rainfall but is drought resistant once established.

Uses

Firewood, poles, posts, carving, food (fruit), jam (fruit), syrup (fruit), bee forage, shade, ornamental, mulch, windbreak.

Description

A dense evergreen shrub or small tree to 7 m, branching close to the ground. **BARK:** Grey and rough, young stems hairy. **LEAVES:** Stalkless, dark green, shiny above, woolly hairs below, about 35 cm long, the tip pointed and the edge prickly, toothed, young leaves paler, foliage in upward pointing tufts. **FLOWERS:** Cream-white, scented, in pyramidal heads at the end of branches, each flower 2 cm across, flower buds covered with golden-brown hairs. **FRUIT:** In loose clusters, yellow, egg shaped, usually 2–7 cm long, acid-sweet flesh around a few large brown-black seeds.

Propagation

Direct sowing at site, seedlings (sow seed in pots), wildings. Root development is quite fast, so its advisable to sow seed directly at site. Sow 2–3 cm deep.

Seed

About 600 seed per kg. The seeds should not be dried (recalcitrant). Fresh seeds germinate well and fast.

Treatment: Not necessary.

Storage: Seed does not store well. Use fresh seed

Management

Fairly fast growing, pruning.

Remarks

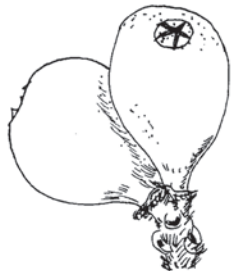
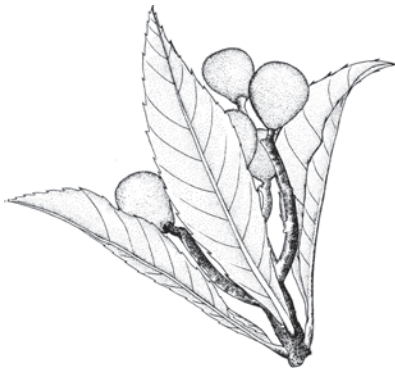
Seeds are poisonous and should be removed before cooking. Grafted trees, when available, remain smaller but make stronger growth and produce fruit faster. Such improved varieties can be multiplied by air layering as well as T-budding and grafting. Healthy loquat seedlings can be used as rootstock. Use of improved varieties is recommended.



Photo: Patrick Maundu



Photo: Patrick Maundu



Erythrina abyssinica

Fabaceae

Indigenous

- Ag:** *Buri*
Am: *Korch, Gorgo, Korra, Kuara*
Eng: *Flame tree, Lucky-bean tree, Red-hot poker tree*
Gmz: *Gelia*
Kf: *Bero*
Or: *Anka, Wolensu*
Sh: *Gelia*
Sd: *Welako, Welesku, Walensu*
Tg: *Soans, Soaueb, Soarch*

Ecology

A small thorny tree found all over Africa in warm temperate and tropical areas, as well as in Central America, Australia, southern Asia and Hawaii. Found all over the country in open woodland or grasslands of the Moist and Wet Kolla and Weyna Dega agroclimatic zones, 1,300–2,400 m. As with many trees in areas with frequent fires, young trees establish a deep root system before stem growth and old trees a thick, corky and protective bark.

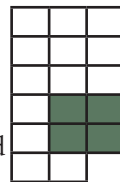
Uses

Firewood, carving, utensils (mortars, drums, bee-hives), medicine (bark, roots), veterinary medicine (leaves), bee forage, ornamental, mulch, soil conservation, nitrogen fixation, live fence, necklaces (seeds), curios (seeds), ceremonial.

Description

A deciduous tree with a short trunk and thick spreading branches, rounded crown, 6–12 m. BARK: Deeply grooved, brown, thick and corky, with or without woody spines. LEAVES: Compound with 3 leaflets, largest leaflet rounded to 15

cm; branchlets and under-leaves covered with grey-brown hairs, veins and stalks sometimes prickly. FLOWERS: Orange-red heads, often appearing on the bare tree. Both narrow calyx lobes and petals are coloured, each flower to 5 cm long. FRUIT: Woody pods, 4–16 cm long, hairy, strongly narrowed between seeds, opening to set free 1–10 shiny red seeds with a grey-black patch.



Propagation

Seedlings, direct sowing at site. Also grow from cuttings, but raising seedlings is easy. Propagation from cuttings is successful if done immediately after the rainy season but not while the land is very wet.

Seed

Low germination rate. About 6,800 seed per kg.

Treatment: Not necessary.

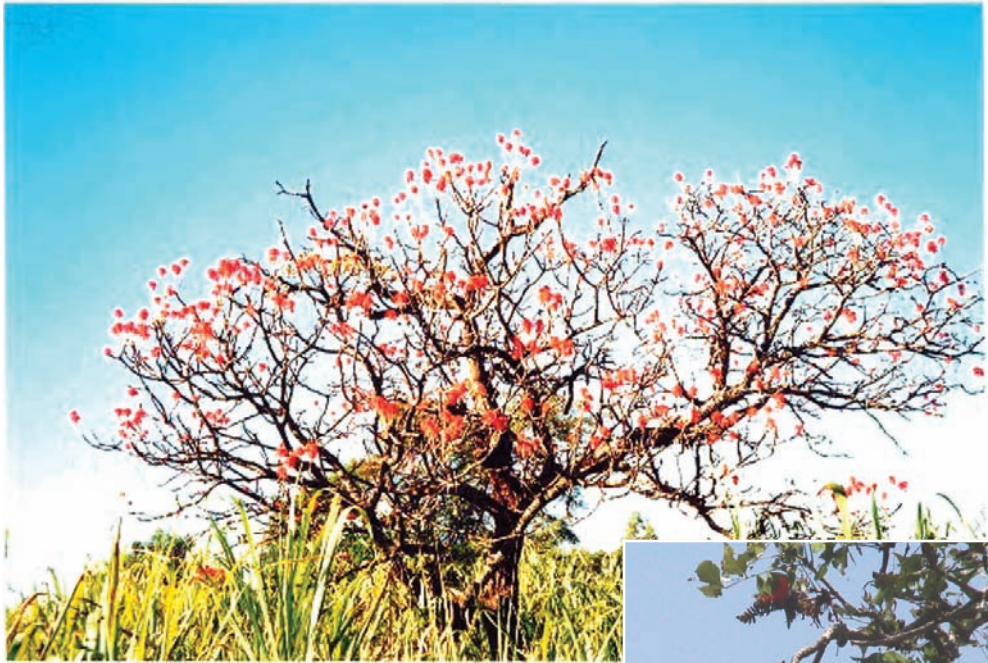
Storage: Seed stores for long periods if kept cool, dry and insect free.

Management

Pollarding, coppicing. Slow growing.

Remarks

The tree is resistant to fire and termites. The soft white wood is a poor timber but can be carved fairly easily. The tree is used on stream banks and for soil-conservation terraces. The seeds contain a poison but it is only released if they are crushed. Leaves have been used to treat skin diseases in cattle.



Photos: Patrick Maundu



Photos: Patrick Maundu



Erythrina brucei

Fabaceae



Indigenous, endemic in Ethiopia

Ag: *Buri*
Am: *Ergofit, Kermo ayederk, Korcb*
Brt: *Embelish*
Kf: *Colacho*
Or: *Wolensu*

Ecology

A tree found only in Ethiopia. It is widespread in open woodland, upland forest edges or grasslands of the Moist and Wet Kolla and Weyna Dega agroclimatic zones in nearly all regions, 1,400-2,600 m.

Uses

Firewood, carving (bee-hives, mortars, drums), medicine (bark, roots), fodder (leaves), bee forage, ornamental, mulch, nitrogen fixation, soil conservation, live fence, necklaces and curios (seeds), ceremonial.

Description

A small usually deciduous tree, usually 5–10 m, with a single trunk but thick spreading branches to a rounded crown. **BARK:** Thick and corky, branches prickly. **LEAVES:** Compound, with 3 oval leaflets, not hairy, the middle one stalked and largest to 23 x 16 cm, nerves below and leaf stalks prickly. **FLOWERS:** In big heads on the bare tree, orange-red, occasionally pale yellow, each flower with a brown hairy calyx to 3 cm, split on one side and a red petal to 5 cm. **FRUIT:** Long leathery pods to 15 cm split open along both sides, 2–4 red seeds with white patches lie in soft white tissue.

Propagation

Seedlings, cuttings.

Seed

Low germination rate. About 6,800 seed per kg.

Treatment: Not necessary.

Storage: Seed can be stored for long periods if it is kept cool, dry and free from insects.

Management

Pollarding, coppicing.

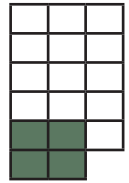
Remarks

The tree is grown easily from large cuttings, 5–10 cm in diameter. It is traditionally used for live fences. It stands heavy pollarding and leaves are fed to cattle, though the leaf crop is not heavy. Along river courses, the tree may not shed its leaves any time of the year as opposed to trees growing in areas that have seasonal moisture stress. The tree is recommended for live fencing, stream-bank and boundary planting and for soil conservation. It is moderately fire and termite resistant.



Erythroxylum fischeri

Erythroxylaceae



Indigenous

Agn: *Jemmoh, Jemma*

Am: *Moke*

Mes: *Gegem*

Sh: *Siga*

Ecology

Growing in Dry and Moist Bereha and Kolla agroclimatic zones in Gambella and Ilubabor regions, 300-600 m, annual rainfall 1,100-2,000 mm.

Uses

Timber (construction), utensils (stirrers), fodder (leaves for goats), gum.

Description

Evergreen much branched shrub, under-shrub or small tree up to 9 m tall with straight bole, hanging branches and regular conical crown or sometimes up to 18 m tall with spreading crown and trunk to 60 cm in diameter at its base. BARK: Grey or brown, soft and flaky, has warts. LEAVES: Elliptic, 5-18 cm in length and 2.5-7.7 cm in width, acute to acuminate at the apex, cuneate at the base, dark green and shining above; petiole 5-13 mm long. FLOWERS: Fragrant, 1-4 in the axils of leaves, white or pinkish white. FRUIT: Drupe, red or orange red, ovoid, 1.5-1.9 cm in length.

Propagation

Seedlings

Seed

Treatment: Macerate the fruit after soaking it in water for half to whole day.

Storage:

Management

Remarks

Its gum is good as an additive to medicine.



Eucalyptus camaldulensis

Myrtaceae

Eastern Australia

Am: *Key babir zaf*

Eng: *Red river gum, Murray red gum*

Ecology

Widely distributed in its native Australia and one of the first *Eucalyptus* spp. used elsewhere, both in the Mediterranean and the tropics. Planted in Africa since around 1900, it does well in semi-arid regions and tolerates a long dry season as well as some salinity. It does well in deep silt or clay soil in Dry and Moist Kolla agroclimatic zones in Tigray, Gonder, Shoa, Harerge and Kefa, 1,200–2,800 m.

Uses

Firewood, charcoal, timber (construction), poles (power lines), posts, bee forage, ornamental, windbreak.

Description

A tall evergreen tree to 30 m, deeply branched but also with a long straight bole. BARK: White to brown, thin and peeling in long strips; when cut it exudes red gum. LEAVES: Grey-blue, long and drooping, to 30 cm, young leaves ovate to broadly lanceolate; mature leaves lanceolate, thin and pendent. FLOWERS: White clusters, short conical bud caps. FRUIT: Very small rounded capsules on thin stalks, each less than 1 cm, 4 valves.

Propagation

Seedlings (sow in seedbed and prick out in pots), seedlings ready for planting after 4–5 months. Direct sowing at site is possible but

requires careful management in the early stages. Farmers sometimes cut branches with mature fruits, spread the branches on the site and leave there for the fruit to open and disperse seed, then water to keep the soil moist to ensure germination, after some time, when the germinants are well established, remove the branches. Thinning to suitable spacing is needed when this technique is applied

Seed

1,000,000–3,000,000 seed per kg.

Germinates in one week.

Treatment: Not necessary. Mix with sand for more even sowing.

Storage: Seed can be stored for a long time.

Management

Coppicing, pollarding.

Remarks

Young trees require protection from termites. The species has been primarily introduced for quick-growing fuelwood. It is also useful for homestead plantation, woodlots and along roads. The timber is red, heavy and hard. Do not plant near crops because of root competition for water and nutrients. All gum-tree flowers have much nectar and attract bees.





Eucalyptus citriodora

Myrtaceae

Eastern Queensland (Australia)

Am: *Shito bahir zaf*

Eng: *Lemon gum, Spotted gum*

Ecology

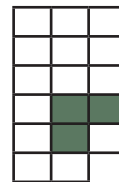
A tall tree that grows in a wide range of climates, and performs very well in Moist Kolla and in Moist and Wet Weyna Dega agroclimatic zones in Shoa and Harerge, 1,800–2,000 m.

Uses

Firewood, charcoal, timber, poles, bee forage, medicine (leaves), windbreak, essential oils (citronellal).

Description

The tree may reach 40 m, with leafy and evergreen drooping foliage, the crown rounded. BARK: Jigsaw patterned, with patches of grey, brown, yellow; older bark smooth grey-white. LEAVES: Very long and narrow, veins parallel to the edge. FLOWERS: Smooth oval buds on stalks, white flowers in groups of 4 - 8. FRUIT: Rather large, oblong cup-shaped, about 1 cm across, in clusters.



Propagation

Seedlings.

Seed

Species is not a prolific seeder like other *Eucalyptus* spp. Germination rate 60–90%. 110,000–1,200,000 seed per kg.

Treatment: Not necessary. Mix with sand for more even sowing.

Storage: Seed can be stored.

Management

Coppicing.

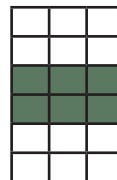
Remarks

The tree is easily identified by the strong scent of lemon oil in the leaves which perfumes the air, especially after rain. Young seedlings are susceptible to termite attack. Large branches are brittle and break off in high winds. It produces heavy wood from the straight trunk, but the timber is often attacked by borers (*Lyctus* spp.).



Eucalyptus globulus

Myrtaceae



S.W. Australia

Am: *Nech bahir zaf*

Eng: *Tasmanian blue gum*

Ecology

Grows in the cooler and wetter parts of south-west Australia. A tree suitable for high-altitude areas as it tolerates frost. It performs well in upper Dry, Moist and Wet Weyna Dega and Dega agroclimatic zones in Tigray, Gonder, Welo, Shoa, Gojam, Wolega, Kefa, Arsi and Harerge, 1,700–2,800 m.

Uses

Firewood, charcoal, timber (heavy and light construction), poles (power lines), posts, veneer, plywood, medicine, bee forage, windbreak, essential oil (young leaves).

Description

A tall tree to 55 m, rather narrow, the crown rounded and open, the main stems straight. BARK: Blue-grey, smooth, rough at base. LEAVES: Young leaves, opposite, oval, blue-grey without stalks, mature leaves deep blue-green, shiny, very long and thin to 30 cm, slightly curved, stalked, smelling of camphor if crushed, tip sharp. FLOWERS: Buds grey-green, wrinkled, 2.5 cm, usually 1, rarely 2 or 3, together, the white flowers to 4 cm across. FRUIT: Woody, half spheres, rough, 3 cm across, four-angled, no stalks. Dull black seeds escape from slits.

Propagation

Seedlings, direct sowing at site is possible but requires careful management in the early stages. Farmers sometimes cut branches with mature fruits, spread the branches on the ground and then there the fruits to open and disperse seed. The ground is then watered to keep the soil moist to ensure germination. The branches are removed when the germinants are well established. Thinning to suitable spacing is needed when this technique is used.

Seed

60,000–400,000 seed per kg.

Treatment: Not necessary. Mix with sand for more even sowing.

Storage: Seed can be stored for a long time.

Management

Coppicing.

Remarks

The young leaves of this species are used to produce an essential oil used in pharmaceutical products. The wood is hard, heavy and strong and is often used for telephone poles. In some places, the tree is liable to attack by beetles. The tree tolerates frost. It is a strong competitor for moisture and nutrients and should therefore not be planted alongside crops.



Eucalyptus grandis

Myrtaceae

Northern New South Wales,

Queensland (Australia)

Am: *Key bahir zaf*

Eng: *Flooded gum, Rose gum*

Ecology

This gum tree grows best in humid subtropical conditions, but has been widely planted all over the world (e.g. South Africa, Brazil). In Ethiopia it grows successfully in Moist and Wet Weyna Dega agroclimatic zones. It has shown excellent growth in Arsi region, but is also cultivated in Shoa, Harerge and Kefa regions. It performs well on light and medium neutral to acid soils that are free draining and moist, 1,700–2,500 m.

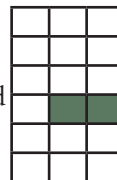
Uses

Firewood, charcoal, timber (heavy and light construction, furniture, boxes), poles (building, electricity transmission), posts, veneer, plywood, bee forage, shade, ornamental, windbreak, short-fibre pulp for paper.

Description

An evergreen tree 40–55 m, to a diameter of 2 m; with an excellent straight trunk and wide spreading thin crown, self-pruning of branches in plantations. BARK: Reddish at first, later pale grey, fibrous bark extends several metres up the trunk (more than in *E. saligna*). Upper bark is smooth, silvery white (greenish). LEAVES: Similar to those of *E. saligna*. FLOWERS: White, small. Buds (larger than in *E. saligna*) with a bluish bloom (waxy powder), lack petals.

FRUIT: Pear-shaped, gradually narrowed to an ill-defined stalk, teeth of capsule 4–6, mostly 5, pale, the blunt tips turned inward like “clutching fingers”, enclosed or partly enclosed in adherent calyx tube.



Propagation

Seedlings, direct sowing at site is possible but requires careful management in the early stages. Farmers sometimes cut branches with mature fruits, spread the branches on the ground and then there the fruits to open and disperse seed. The ground is then watered to keep the soil moist to ensure germination. The branches are removed when the germinants are well established. Thinning to suitable spacing is needed when this technique is used.

Seed

600,000–650,000 seed per kg. Germinates in 7–8 days.

Treatment: Not necessary. Mix with sand for more even sowing.

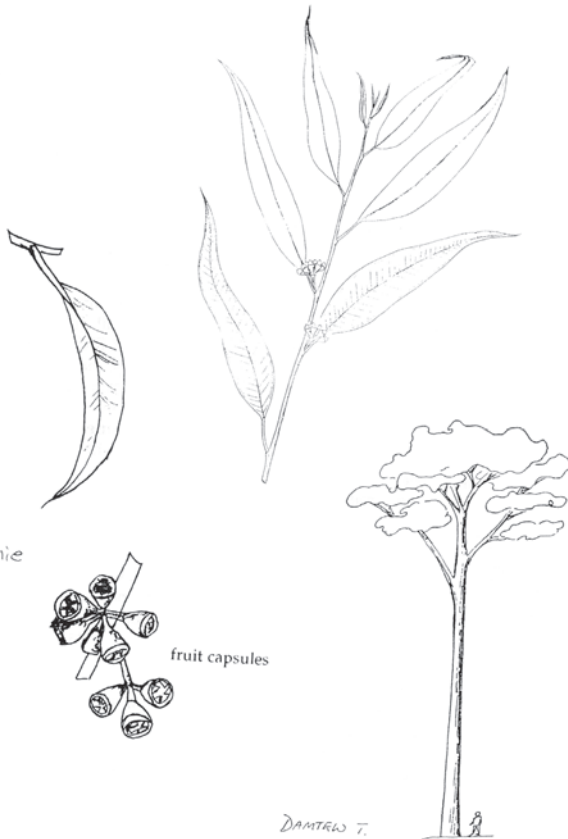
Storage: Can store for several years if kept in cool, dry and airtight containers.

Management

A fast-growing tree. Flowers in July to December, Coppicing, coppice reduction. Protect from termite attack when young.

Remarks

It is fire sensitive and tends to split when being felled. It produces flowers and seeds in 4–5 years and is moderately frost resistant as well as salt and wind tolerant. Does not do well in water-logged sites. The pink to pale red-brown timber is softer and lighter than that of many gums and more easily worked.



Eucalyptus saligna

Myrtaceae

Coastal Eastern Australia

Am: *Saligna bahir zaf*

Eng: *Sydney blue gum*

Ecology

A tree widely planted in the tropics for fuel, from Brazil, Hawaii, East and South Africa as well as in Asia and even on New Zealand. This is the dominant eucalyptus species grown in the highlands in Arsi region. It will grow in Moist and Wet Kolla and Weyna Dega agroclimatic zones in Shoa, Harerge, Arsi, Sidamo and Kefa, 1,700–2,300 m.

Uses

Firewood, charcoal, poles, timber, furniture (pulpwood, veneer, plywood, construction), medicine, bee forage, shade, windbreak.

Description

A tall tree, usually 40–50 m but may reach 60–70 m, the crown irregular to rounded, the trunk straight and up to 1.5 m across, this width continued up to $\frac{1}{3}$ of the tree's height. BARK: On old trunks grey to brown, rough with thick ridges from the base to about 9 m, and peeling in strips. Upper branches smooth bluish-white (greenish). LEAVES: Long and thin to a pointed tip, curved to 20 cm, to 3 cm across, dull green, paler below, the flat stalks 1–2 cm, yellow-pink. FLOWERS: Small and white, 3–4 buds in a group (smaller than *E. grandis*). Capsules dark brown, in groups of 4–8, each only 5–6 mm, conical, tapering suddenly at the base to a clear stalk of 5–6 mm (smaller and more delicate than *E. grandis*). Teeth of capsule usually 3–4, same colour as cup, tips sharp-pointed,

straight or spreading.

Propagation

Seedlings (seedlings require 3 - 4 months in the nursery to reach suitable size for planting), direct sowing at site is possible but requires careful management in the early stages. Farmers sometimes cut branches with mature fruits, spread the branches on the site and leave there for the fruit to open and disperse seed, then water to keep the soil moist to ensure germination, after some time, when the germinants are well established, remove the branches. Thinning to suitable spacing is needed when this technique is applied.

Seed

The tree is a prolific seeder. 1,700,000–2,000,000 seed per kg.

Treatment: Not necessary. Mix with sand for more even sowing.

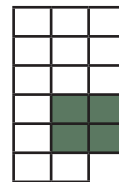
Storage: Seed can be stored for over 2 years.

Management

It is very fast growing on good sites. Coppicing, wind-throw susceptible.

Remarks

The species should not be planted near crops as it adversely affects yields. A good tree for woodlots, this species grows naturally on slopes and is most suitable for moist cool mountains (*E. grandis* thrives best in humid subtropical conditions). The roots have swellings (lignotubers) just below the soil surface (absent in *E. grandis*). The timber is light red to red-brown and moderately heavy, tough and durable; suitable for many purposes but mainly fuelwood.





fruit capsules



A. Birnie

Eucalyptus viminalis

Myrtaceae

New South Wales, Tasmania (Australia)

Am: *Key babir zaf*

Eng: *Manna gum, Ribbon gum*

Ecology

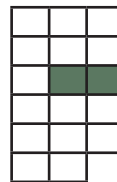
This tree grows in Moist and Wet upper Weyna-Dega, the whole Dega and lower Frost agroclimatic zones and does well in well-drained deep soils in Shoa, Harerge, Arsi and Kefa, 2,000-3,400 m. A good alternative to *E. globulus* at higher altitudes.

Uses

Firewood, poles, timber (light construction, boxes, veneer, plywood, building, flooring), bee forage, ornamental, windbreak, paper (short-fibre pulp).

Description

A slender upright tree, reaching 30–50 m. The clean white trunk bears thin, bendy branchlets and the bole may be 1.5 m in diameter. The tree is strongly light demanding. **BARK:** Often all white or rough grey at the base, long ribbons of bark shed from the upper trunk or branches, frequently hanging in branch forks. **LEAVES:** Young leaves characteristically opposite without stalks. Mature leaves stalked 10–20 cm, narrow and pointed, pale green. **FLOWERS:** Beside leaves, in threes, no stalks and bud cap conical. **FRUIT:** Stalkless, in threes, at right angles to each other, base rounded, 5–8 mm across the 3–4 valves protruding.



Propagation

Seedlings.

Seed

300,000–400,000 seed per kg.

Treatment: Not necessary, germinates in 5–6 days.

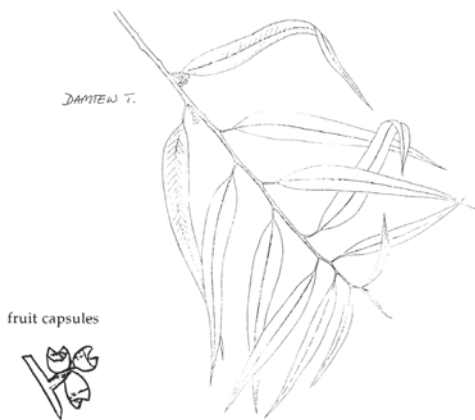
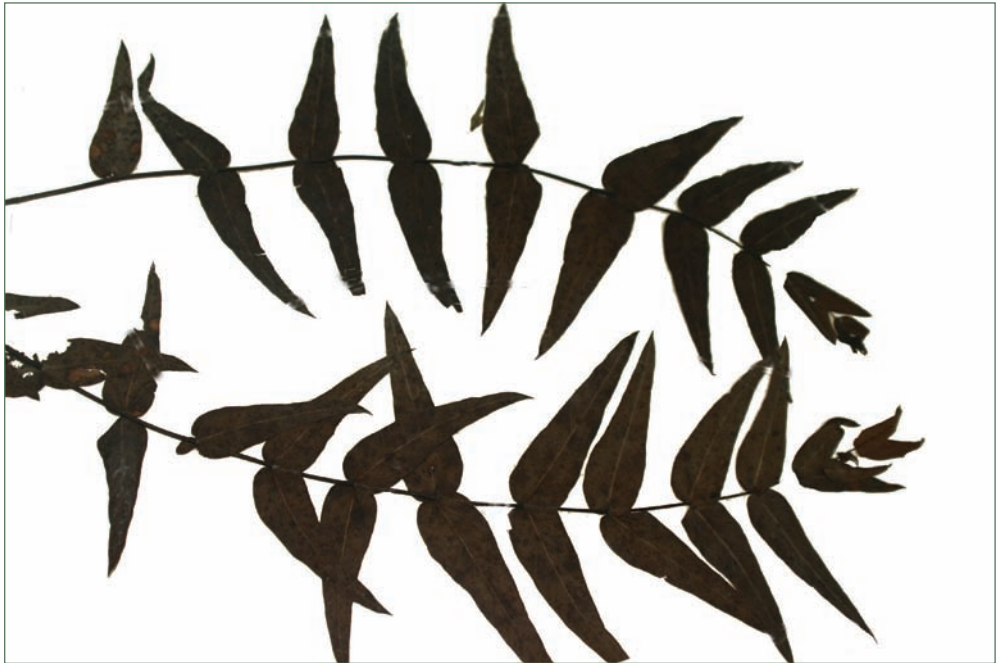
Storage: Can be stored for several years in a dry, cold and airtight container.

Management

Coppicing.

Remarks

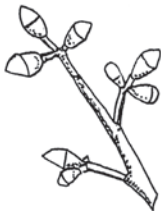
It is fire and frost resistant but the sapwood is susceptible to attack by wood borers. The pale yellow or pink wood is moderately hard, the grain is straight, but wood is not strong or durable. In Ethiopia, it is useful for poles and fuel and grown in homesteads, woodlots and along pathways. The branchlets bend easily and have been used for weaving. White, sugary sap spilling out from young shoots gives it the name ‘magna’ gum in Amharic.



fruit capsules



buds



Euclea racemosa

subsp. schimperi

Ebenaceae



Indigenous

Am: *Dedebo*

Or: *Miessa, Ghino*

Sm: *Dobobos, Mayer*

Tg: *Kellau, Gum*

Ecology

A small tree or shrub that grows in dry woodland, bushland, riverine forest and marginal arid areas in Dry, Moist and Wet Kolla and Weyna Dega agroclimatic zones in most regions, 1,000-2,400 m.

Uses

Firewood, farm tools, food (fruit), ornamental, dye, live fence, boundary marking.

Description

A shrub or small tree 3–4 m. BARK: Grey-black, rather smooth. LEAVES: Usually opposite, shiny and leathery, dark green above but dull and pale below, long, oval, about 5 cm, the tip rounded, narrowing to the base. The thick edge often curls right under. FLOWERS: Small, cream-white and sweet-scented, in short sprays to 8 cm, beside leaves, male flowers with many stamens. FRUIT: Round and very small, less than 1 cm, green at first, ripening purple-black with thin edible flesh around the seeds, two seeds per fruit.

Propagation

Seedlings, layering, cuttings.

Seed

18,000—20,000 per kg.

Treatment: Not necessary.

Storage: Can be stored.

Management

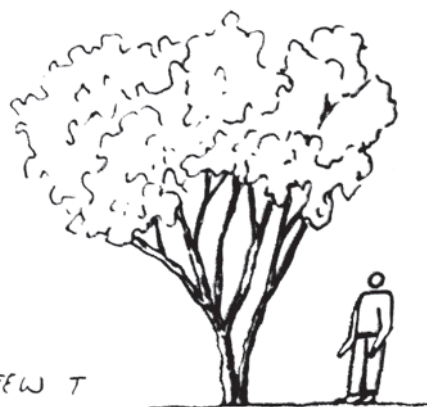
Coppicing. Produces root suckers.

Remarks

The wood is heavy and hard and burns very well. A black dye can be obtained from the roots.

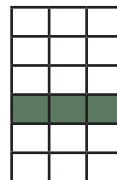


DAMIEW T



Euphorbia abyssinica

Euphorbiaceae



Indigenous

Am: *Kulkual*

Or: *Adami*

Ecology

A spiny tree euphorbia which grows in moist montane forest, humid woodlands and scrub savannah only in Somalia, the Sudan, Eritrea and Ethiopia. In Ethiopia, it usually grows in steep rocky hillsides, and sometimes used for live fencing at high altitudes. It performs well in Dry, Moist and Wet Weyna Dega agroclimatic zones in Tigray, Gonder, Gojam, Shoa, Harerge and Sidamo, 1,400–2,400 m, usually above 1,900 m.

Uses

Firewood, timber (roofing, matches, boxes, local tables, wooden saddles).

Description

A succulent, leafless tree up to 10 m high, the crown almost flattened. The thick main trunk, woody with age, usually has more than 5 angles or ribs, often 8-sided. The mass of upturned green branches has taken over the function of leaves. The 3–8 thick ribs may be winged and the stems are narrowed or constricted at intervals making segments. Along the ribs are small rounded shields from which grow pairs of straight spines, to 1 cm, leaves and flowers. LEAVES: Develop only on seedlings, soon falling, later only scales. FLOWERS: In crowded groups at the tips of branches, each with 5 bright yellow glands. FRUIT: Capsules, large and rounded when fresh,

to 2 cm across, about 1 cm high, stalked, green at first then deep red with white lines (*E. candelabrum* smaller, more deeply lobed). The 3-part capsule dries to release small plain grey seeds.

Propagation

Cuttings.

Seed

Treatment: Not applicable

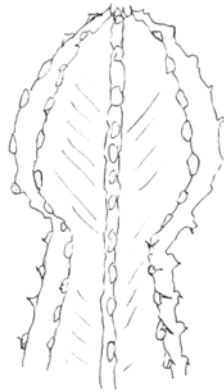
Storage: Not applicable

Management

Plant the cuttings when the rain is about to stop. It does not prefer wet conditions during establishment.

Remarks

The soft yellow wood is perishable and very light but durable. It is suitable for roofing as well as matches, etc. There is considerable variation between northern and southern populations of *E. abyssinica*. This species closely resembles *E. candelabrum* but the latter normally grows below 1,700 m. The white latex can be used to kill ticks on cattle.



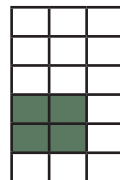
A.B.



DAMTEW T.

Euphorbia candelabrum

Euphorbiaceae



Indigenous

Am: *Kulkual*

Eng: *Candelabra euphorbia, Tree euphorbia*

Or: *Adami*

Ecology

Grows in both dry deciduous and evergreen woodlands in Dry and Moist Kolla and Weyna Dega agroclimatic zones in Shoa, Harerge, Bale and Sidamo, 1,200–1,700 m.

Uses

Firewood, timber (roofing, tables, matches, boxes, saddles), fence (cut branches), live fence.

Description

A tree up to 15 m, the trunk thick, to 3 m, where the lower branches have fallen away. Erect branches have 3–5 spiny ribs or wings and branches go on dividing to make a large round crown. The green-grey stems have many narrow “waists” and have taken over the leaf function to make food. LEAVES: No true leaves, just scales. FLOWERS: Small, green-yellow and fleshy in groups of 4–6 next to the paired spines. FRUIT: Green-red pea-size capsules, seeds spotted with dirty white.

Propagation

Cuttings.

Seed

Treatment: Not applicable

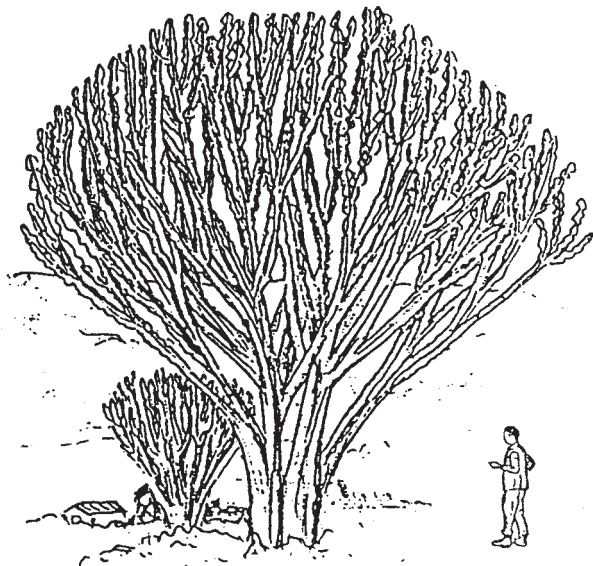
Storage: Not applicable

Management

Continuous reinforcement planting if grown as a fence. Do planting when the rain is about to stop. Prefers well drained soil or site.

Remarks

All parts of the plant produce copious milky latex which is poisonous; even one drop in the eye may cause blindness. When dry the light durable wood has many local uses and is good for roofing.



Euphorbia tirucalli

Euphorbiaceae



Indigenous

Am: *Kinchib*

Br: *Anno*

Eng: *Finger euphorbia*

Or: *Anno*

Ecology

Naturalized throughout tropical Africa and commonly planted both in the tropics and subtropics of Africa and Asia (India and the Far East). Frequently planted in Ethiopia as a fence around livestock kraals in dry areas but also found as a tree. Naturalized or possibly indigenous to some areas of Sidamo and Gamo Gofa. It is common in many areas of Welo, Tigray, Gojam, Shoa and Harerge in Dry and Moist, Kolla, Weyna Dega and Dega agroclimatic zones in Ilubabor, Gamo Gofa, Sidamo and Bale, 1,100–2,500 m.

Uses

Medicine (young branches, boiled roots), fish poison (latex), boundary marker, live fence.

Description

A dense straight-stemmed tree to 6 m or more, the branchlets smooth green, cylindrical in dense masses. BARK: dense, straight-stemmed, the branches smooth, green and cylindrical in dense masses. LEAVES: Small, up to 6 mm long, present on young stems, soon dropping. FLOWERS: cream or yellow-green, occur in small and dense terminal clusters. FRUIT: 3-part capsules, 6 mm across, hard, purple-green.

Propagation

Cuttings strike easily.

Seed

Treatment:

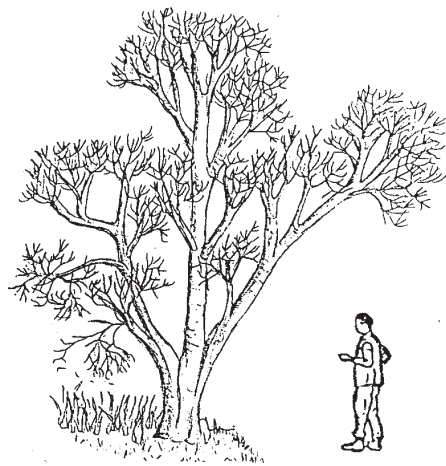
Storage:

Management

Fast growing. Coppicing, trimming, reinforcement planting and top pruning to make a good fence.

Remarks

Medicine from the plant must be used with extreme care due to its high toxicity. The latex is very poisonous and harmful to the eyes. Human milk has been reported as a remedy if one gets latex in the eyes.



Fagaropsis angolensis

Rutaceae

Indigenous

Or: *Dergi, Dero, Muke, Shapindi*

Sd: *Sighilu*

Ecology

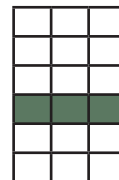
Found from Ethiopia and the Democratic Republic of Congo and south to Angola and Malawi. In Ethiopia, it is common in the upper storey of the humid highland forests, usually with *Podocarpus* spp., in Dry, Moist and Wet Weyna Dega agroclimatic zones in Ilubabor, Wolega, Sidamo and Bale regions, 1,300–1,900 m.

Uses

Firewood, timber (flooring, furniture).

Description

A deciduous tree 7–25 m, nearly 2 m in diameter at base height in a good specimen, with a straight cylindrical bole. **BARK:** Light grey. When freshly cut, bright orange with a white layer deeper inside. This helps identification. **LEAVES:** Compound, on a stalk 13–40 cm, leaflets shiny and oval, usually 7 (5–13) each to 9 cm, the tip pointed. Lateral leaves are unequal sided. **FLOWERS:** Yellow-white, in heads 6–12 cm, flowering on the bare tree. **FRUIT:** Round, red-black, about 1 cm, roughly dotted with glands.



Propagation

Seedlings, wildings.

Seed

About 4,000–4,500 seeds per kg. The germination is very good and fast.

Treatment: Not necessary.

Storage: Use fresh seed for best result.

Management

Produces root suckers.

Remarks

A moderately hard timber but not durable. It is easy to saw, finishes well and makes beautiful furniture and panelling.



Ficus carica

Moraceae

N.W. Turkey, common eastern

Mediterranean

Am: *Beles*

Eng: *Adriatic fig, Common fig, Smyrna fig*

Km: *Odeko*

Ecology

Figs originate from dry areas with a marked seasonal climate and perform best in areas with a long, hot growing season. They can withstand dry periods and need a cold period of 100–300 hours below 7 °C. In spite of this requirement for chilling, they are sensitive to frost. They do not perform well in humid areas. Fig trees grow from sea level to over 2,000 m in different parts of the world. The tree grows in a variety of soils, ranging from sandy loams to clay loams. It even tolerates soils high in lime and poor soils, but not those that are too acidic. In Ethiopia, fig trees grow in Dry and Moist Kolla and Weyna Dega agroclimatic zones in Shoa and Harerge, 1,000–2,400 m.

Uses

Fruit (fresh, dried), medicine (sap).

Description

A markedly deciduous shrub or small tree 4–10 m tall. **BARK:** Brown. White latex in all parts irritates the skin. **LEAVES:** Simple but with 3–5 rounded lobes to 18 x 20 cm, heart-shaped at the base, leaf edges slightly toothed at lobe tips, 3–5 veins from the base, a leaf stalk to 10 cm. **FRUIT:** Figs from female flowers, green-brown and swollen, to 7 cm, wider at the tip. The pulp around the seeds has a high sugar content and is very tasty.

Propagation

Figs grow easily from cuttings. Plants raised from seed vary in fruit quality and are thus not recommended. Use hardwood

cuttings of one-year-old wood from selected cultivars. Plant cuttings 25–30 cm long almost completely buried in well-drained soil and keep moist. Plant at a distance of 6 m x 6 m. Figs may also be propagated from rooted suckers severed from the parent tree and transplanted. Water the newly planted figs if necessary during hot, dry seasons.



Seed

Not used.

Treatment: Not applicable.

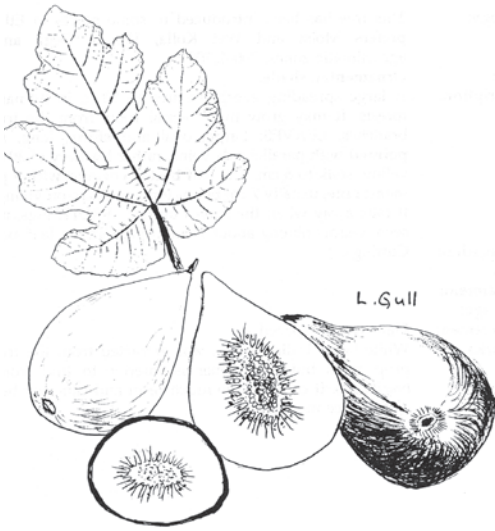
Storage: Not applicable.

Management

Heavy root pruning may sometimes induce fruiting. Prune branches to reduce size of trees for easier picking. Mulch with well-rotted manure once a year. If introducing figs into a new area, use Adriatic figs or other modern cultivars that do not require pollination by the fig wasp. These varieties have seedless figs that develop without pollination (parthenocarpically).

Remarks

Figs in the open are usually problem free, but birds may attack the fruit. Fruit flies may also damage the figs. *Nectria canker* causes small areas of bark, often close to a bud or wound, to darken and sink inward; the bark cracks form loose, flaky, concentric rings. Death of tissue under the surface bark (phloem) restricts the flow of water and nutrients, resulting in stem and leaf deterioration. A whole branch may die. The fungus *Nectria galligena* causes this problem. Ripe (soft) figs are harvested and consumed fresh. A small crop may be produced only a year after planting. Later there are two crops a year. Fruits ripen gradually at different times, so picking should be done daily during the fruiting season. The fruits are perishable unless sun dried. Figs are a good source of calcium and are high in fibre. They are also rich in natural sugars (83% of weight of dried figs) and contain vitamins A, B and C. Figs are popularly known for their laxative and digestive properties. In Ethiopia, the sap is used to encourage regrowth of hair in baldness due to 'lash' (Am.), a skin disease.



DAMTEW T.



Ficus elastica

Moraceae

Native to Southeast Asia

Am: *Yegoma zaf*

Eng: *Indian rubber tree, Rubber plant*

Ecology

This large-leaved tree has been introduced to many places in the world, including some places in Ethiopia. It grows in Moist and Wet Kolla, Weyna Dega and Dega agroclimatic zones, 800–2,700 m.

Uses

Shade, ornamental.

Description

A large, spreading evergreen tree to 30 m in its native rain forests. It may grow many aerial roots from the trunk and branches. LEAVES: Large, oval and shiny, long, abruptly pointed with parallel side veins, rather leathery to 30 cm, on a yellow stalk to 6 cm. The leaf bud is covered with a pink-red membranous stipule, usually 7 cm but as long as 30 cm on young plants. It falls away when the leaves unfold. FRUIT: Figs, not often seen, yellow oblong about 1 cm in pairs in the leaf axils.



Propagation

Cuttings strike easily.

Seed

Not used.

Treatment: Not applicable

Storage: Not applicable

Management

Plant widely spaced.

Remarks

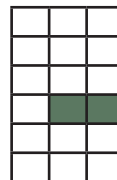
White latex, India rubber, was extracted from the trunk and prop roots, but the rubber is inferior to that from *Hevea brasiliensis*. It contains too much resin and can only be tapped every three months.



Ficus sur

(*F. capensis*)

Moraceae



Indigenous

Ag: *Emwi*

Agn: *Olam*

Am: *Shola*

Brt: *Mensha*

Eng: *Cape fig*

Nur: *Mop*

Or: *Habru, Harbu*

Ecology

A widespread African fig tree occurring in eastern Africa, extending east to Yemen and south to Angola and South Africa. In Ethiopia, it is found along river banks, in upland rain forest, mountain grassland or secondary scrub in Moist and Wet Weyna Dega agroclimatic zones in nearly all regions, 1,400–2,500 m.

Uses

Timber (local furniture, boxes), food (fruit), medicine (bark, milky sap, roots), shade, ceremonial.

Description

A large tree often strongly buttressed to 30 m and up to 150 cm in diameter. **BARK:** Smooth, grey, darker grey-brown with age. **LEAVES:** Large, broadly oval, to 20 x 13 cm, usually smooth, edge often widely toothed, sometimes wavy, veins clear below, stalk grooved and flexible to 6 cm. **FRUIT:** Figs in heavy clusters on branches to 70 cm long from trunk or older wood, figs round, usually 2 cm across but can be larger, on stalks, orange-red, often hairy, soft and edible, having many seeds and often insects too.

Propagation

Cuttings, wildings and seedlings.

Seed

Tiny seed are contained in figs. Slice the fig, dry it in the sun and shake out the seed.

Treatment: Not necessary.

Storage: Should be sown soon after extraction.

Management

Lopping, pollarding.

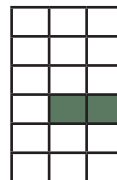
Remarks

Farmers have now focused on this tree due to unavailability of *Cordia* trees for making boxes, chairs and tables locally. Fruits often full of insects.



Ficus sycomorus

Moraceae



Indigenous

- Ag:** *Emwi*
Am: *Bamba, Shola*
Br: *Oda*
Eng: *Sycamore fig, Farob's tree*
Hd: *Odoo*
Or: *Akuku, Hagile, Harbu, Huda farda, Lugo, Oda*
Sm: *Dare, Dure, Mokko, Mukoy*
Tg: *Sagla, Shegla*
Wt: *Wola*

Ecology

Occurs from the Middle East west to Cape Verde Islands and south to South Africa, Namibia and the Comoro Islands. Found in Ethiopia along rivers and lake margins, in woodlands and wooded grasslands, evergreen bushlands, forest edges and forest clearings in Moist and Wet Weyna Dega agroclimatic zones in most regions, 500–2,000 m.

Uses

Firewood, carvings, beehives, food (fruit), medicine (latex), shade, ornamental, mulch, soil conservation, soil improvement.

Description

A large semi-deciduous spreading tree to 25 m, sometimes with stem buttresses and the base commonly spreading over the ground. BARK: Distinctive yellow to cream-brown, smooth. LEAVES: Oval to almost circular, to 15 cm, upper surface rough to touch, margin wavy, roughly toothed, base heart shaped, a hairy stalk to 3 cm. FRUIT: In leaf axils or in dense clusters on main branches and trunk, each rounded, usually to 2.5 cm long, wider at the tip, yellow-red when ripe, edible.

Propagation

Cuttings strike readily.

Seed

Not used.

Treatment:

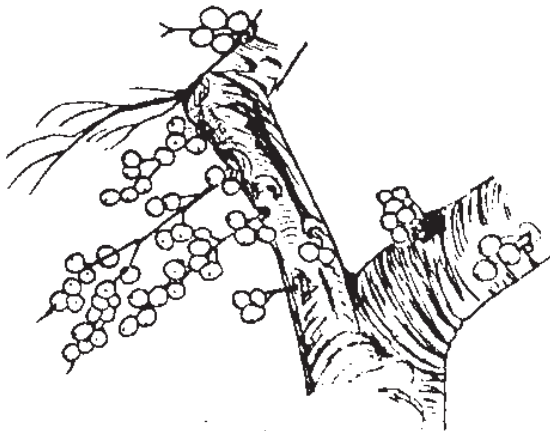
Storage:

Management

Fairly fast growing. Pruning, lopping to reduce shade.

Remarks

A sacred tree for various communities. Figs are eaten by livestock, birds and wild animals. They can also be dried and have a good flavour and high food value. The tree grows well with crops if shade is controlled. The wood is pale and easy to work.



Flacourtia indica

Flacourtiaceae

Indigenous

Eng: *Indian plum*

Ecology

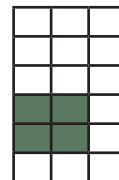
Widespread in tropical and subtropical Africa, Madagascar, Seychelles, Malaysia as well as other parts of Asia. Cultivated for its fruit it can be grown in a variety of climates and soils, but prefers sandy soil, a high water table and full sun. In Ethiopia it grows from the coastal plains to the highlands in a variety of climates and soils but is never very common. It does well in Dry and Moist Kolla and Weyna Dega agroclimatic zones in almost all regions, 400–2,100 m. It prefers sandy soils, a high water table and full sun.

Uses

Firewood, timber (tools), farm tools, fodder (leaves), food (fruit), medicine (leaves, bark, roots), live fence.

Description

A deciduous spiny shrub usually 3–5 m; spines on the trunk sometimes branched, up to 12 cm long. **BARK:** Rough, pale yellow-grey, branches may have a yellow powder at first. **LEAVES:** Variable in size, oval, to 12 cm, edge toothed, 4–7 pairs of veins clear on both surfaces, stalk to 2 cm. **FLOWERS:** Small, cream, fragrant; male flowers with very many yellow stamens, female flowers with a divided spreading style. **FRUIT:** Red-purple-black, round and juicy but acid, to 2.5 cm across, persisting on the tree. They contain up to 10 small seeds, hard and flat.



Propagation

Seedlings, wildings.

Seed

Treatment: Cracking or piercing the hard seed coat may improve germination.

Storage:

Management

Coppicing, pruning, pollarding. Trim if planted as a fence.

Remarks

Sometimes cultivated for its edible fruit.



Photo: Patrick Maundu



Flueggea virosa

(*Securinea virosa*, *Phyllanthus virosus*)

Euphorbiaceae



Indigenous

Am: *Kechachilo*

Br: *Awagino*

Eng: *Snowberry tree*

Ecology

A widely distributed species in Africa, from Senegal to Somalia and south to Namibia, and in the southern Arabian peninsular, Madagascar, Pakistan and east to Japan and Timor. In Ethiopia, this shrub is found mostly in open Acacia-Combretum woodlands or riverine forests on alluvial flats, on black-cotton soil and well drained rocky slopes. It is widespread in Dry and Moist Bereha and Dry, Moist and Wet Kolla and Weyna Dega agroclimatic zones, 120–2,000 m.

Uses

Firewood, fish traps (branchlets), medicine (roots, bark), food (fruit).

Description

A deciduous much-branched shrub usually 1–2 m, occasionally a tree to 7 m. BARK: Red-brown, smooth, later rough. Branchlets and leaf stalks purple-red. LEAVES: Simple and alternate, very variable to 6 cm, wider at the tip which may be notched, grey below. FLOWERS: Male and female trees. Small, green-yellow, sweet-scented in leaf axils; male flowers in clusters but only one or two female flowers. FRUIT: Small white berries, only 5 m across but edible and sweet.

Propagation

Seedlings, wildings and cuttings.

Seed

Treatment: Not necessary but seed that has passed an animal gut has better germination than other seed.

Storage:

Management

A fast-growing shrub.

Remarks

In Ethiopia, an infusion of the roots is taken with meat soup as a cure for malaria. The bark contains tannin and is used to treat diarrhoea and pneumonia. The slender branchlets are used to make fish traps.



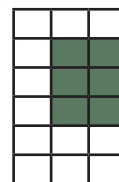
Photo: Patrick Maundu



Galiniera saxifraga

(*G. coffeoides*)

Rubiaceae



Indigenous

Am: *Solie, Yetota Buna*

Or: *Adamo, Didu, Mito, Sarbandai*

Sd: *Daujicho, Segbede*

Ecology

A very common small tree growing in a wide range of habitats in semi-humid and humid highland *Celtis*, *Juniperus*, *Polyscias* and *Podocarpus* forests as well as in mountain woodlands. It performs well in Moist and Wet Weyna Dega, Dega and Wurch agroclimatic zones in most regions, 1,500—3,000 m.

Uses

Firewood, timber (construction), mulch.

Description

A shrub or tree to 12 m, the crown thin but rounded. Branches grow out in whorls from the trunk. They are long and thin, hanging down with regular rows of large opposite leaves. Where leaves arise there are typical triangular leafy growths 1 cm long—the stipules. LEAVES: Shiny oval to 6 x 20 cm, the tip clearly pointed, on a hairy stalk about 2 cm long. More than 10 pairs of veins curve to the leaf edge and they are clearly hairy below. FLOWERS: Small, white and fragrant, like coffee flowers, on branched hairy stalks about 3 cm long in leaf axils. FRUIT: Bunches of green berries ripen to red, each 5–10 mm, containing 2–4 seeds.

Propagation

Seedlings, wildings.

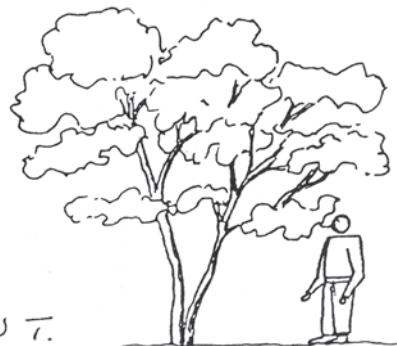
Seed

Treatment:

Storage:

Management

Pruning, lopping.



DAMTEW T.

Gardenia ternifolia

Rubiaceae



Indigenous

Agn: *Dowa*;

Eng: *Large-leaved common gardenia, large-leaved Transvaal gardenia*

Gmz: *Kota*

Mjr: *Tangnang*

Ecology

Growing in Moist Bereha and Moist to Wet Kolla agroclimatic zones in wooded grasslands, along streams and valleys in Gambella, Gonder, Wello, Gojam, Shoa, Wolega, Kefa, Ilubabor, Sidamo and Harerge regions. Sometimes it is associated with termite mounds, 300—2,250 m, annual rainfall 1,400—2,000 mm.

Uses

Tool handles (branch wood), food (fruit), bee forage, tooth brushes.

Description

It is a small tree or large shrub to a height of 3-6 m. Wood is difficult to cut. Branches originate from a distinct node in 90° to the main stem and grow in almost 60° to one another. BARK: grayish white, smooth. LEAVES in whorls of three, 10-18 cm in length, 7-11 cm in width, margin entire, cuneate at base, rounded at tip, obovate in shape, midrib grayish white, protruding on both sides, lateral veins slightly alternate; leaf petiole only 2-3 mm long and 3 mm in diameter. FLOWER: white or creamy, aging to yellow, about 4 cm in diameter with a tube up to 4-5 cm long and spreading corolla lobes, sweetly scented. FRUIT in single at the tip of a 4-5 cm long fruit stalk, 3-5 cm

in diameter and 5-7 cm in length, oval in shape, finely velvety and pointed at both sides. SEEDS many.

Propagation

Seedlings and wildings.

Seed

Treatment: Need to soak fruit in cold water and macerate when soft.

Storage: Can be stored for few months after drying it very well.

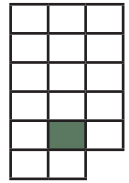
Management

A decoction from fruit is used to treat malaria and as a remedy for eye complaints. The branches make good toothbrushes. Children eat raw fruits.



Gardenia volkensii

Rubiaceae



Indigenous

Am: *Gambello*

Eng: *Common gardenia, Transvaal gardenia*

Shn: *Gaba*

Ecology

A common tree in most of tropical Africa, from Ethiopia south to northern Namibia, northern Botswana, Zimbabwe, northern Natal and Swaziland. It occurs in a wide variety of soils, ranging from well-drained sand to poorly drained clayey soil, as well as in rocky areas. In Ethiopia, it grows in Moist Kolla agroclimatic zone, mostly in well-drained soils, 500—1,300 m in Gamo Gofa and Sidamo.

Uses

Carvings, medicine (fruits and roots), ornamental.

Description

A small twiggy tree rarely reaching 8 m with a relatively dense crown and a short thick and often fluted trunk. The twigs are borne in whorls of three and are very hard and stiff. BARK: Pale grey, smooth on young branches. In older parts, flaking in small, fairly thick sections, resulting in a mottled appearance. LEAVES: Spoon-shaped, widest and truncated at the tip and borne in whorls of three, usually less than 5 cm long. FLOWERS: Large, borne singly. Corolla large, showy white, turning yellow after a few days, then brown before dropping, tube up to 10 cm long or more. FRUIT: Large, round or oval, grey with prominent longitudinal ribs, remaining

on the tree for a long time and falling unopened.

Propagation

Can be propagated from cuttings. Raising seedlings and using wildings are other options.

Seed

Seed can remain dormant for a long time.

Treatment: Need to soak fruit in water and macerate when soft.

Storage: can be stored for few months after drying well.

Management

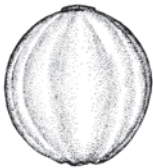
Remark

The showy large flowers of *Gardenia* species make them excellent ornamental plants.

The wood of most species is yellowish, very hard, heavy and fine-grained, but the small size limits its use. An infusion from the fruits and roots is used to stop vomiting.



Photos: Patrick Maundu



Gmelina arborea

Verbenaceae

South Asia

Eng: *White teak*

Ecology

Found naturally in moist forests of South Asia to China. Now a useful tree planted worldwide, 0–1,200 m. Grows in Moist and Wet Kolla agroclimatic zones especially in the western part of Ethiopia, 400–1,400 m. It prefers a hot and humid climate.

Uses

Firewood, charcoal, timber (furniture, tools), poles, fodder (leaves, fruit), bee forage, shade, ornamental, windbreak.

Description

A deciduous tree which may reach 18 m, but usually smaller; the crown fairly open. **BARK:** Pale cream when young, grey-yellow-brown with age, corky and rough. **LEAVES:** Large, heart-shaped to 20 cm, tip pointed, shiny above, pale and hairy below, on a stalk to 12 cm. **FLOWERS:** In clusters to 30 cm long, orange-yellow, each flower bell-shaped. Abundant nectar attracts bees. **FRUIT:** Orange-yellow, egg shaped to 2.5 cm, containing a stone with 1–4 seeds inside.

Propagation

Seedlings, direct sowing at site, cuttings.

Seed

Germination 40–80 % in 20–50 days under good conditions. 2,500–3,000 seed per kg.

Treatment: Soak in cold water for 24 hours.

Storage: Seed can be stored for a year without loss of viability.

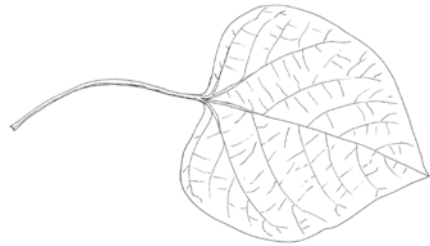
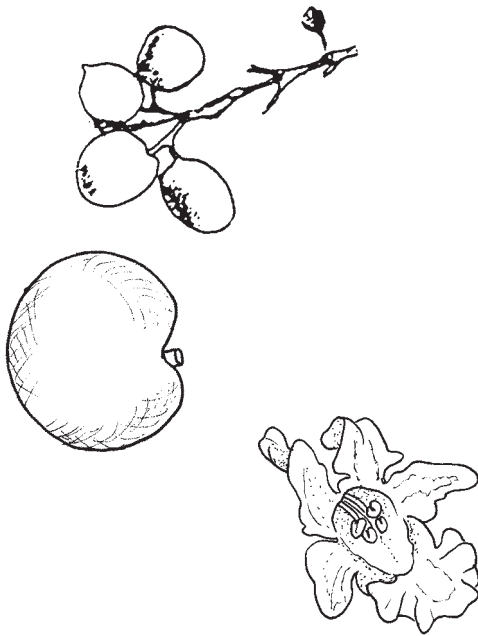
Management

It is fast growing and moderately drought resistant once established. Protect young trees from livestock. Pruning, lopping, coppicing. Coppices well when young but older stumps less so.

Remarks

Young trees do not compete well with weeds. Established trees compete with crops and should not be grown near farms.





Grevillea robusta

Proteaceae



Eastern Australia

Am: *Grevila*;

Eng: *Silky oak, Grevillea*

Ecology

A very successful Australian tree planted and widely used in Africa, 0–3,000 m. Grows on fairly well drained and neutral to acidic soils but does not tolerate water logging or heavy clays. In Ethiopia, it does well in Dry, Moist and Wet Weyna Dega and Dega agroclimatic zones, 1,500–2,700 m.

Uses

Firewood, charcoal, timber (furniture), poles, fodder (leaves), bee forage, shade, ornamental, soil conservation, windbreak.

Description

A semi-deciduous tree to 20 m or more with a straight trunk and angular branches. An oval leafy crown. BARK: Dark grey, rough, vertically grooved. LEAVES: Compound, fern-like, very divided, leathery pale green above, silver-grey below. FLOWERS: Very many, in one-sided golden-orange spikes, much nectar which attracts bees and sunbirds. FRUIT: Dark brown capsule, about 1 cm, with a slender beak, splitting to set free 2 winged seeds.

Propagation

Wildings, seedlings.

Seed

The species is a prolific seeder. Collection of large amounts of seed is time consuming.

Each capsule contains only two seeds that are dispersed by wind soon after the capsule splits open. Capsules can be collected when they are brown and mature but just before they split and then be kept for drying, splitting and extraction of seeds. Germination rate 30–90 %. 70,000–110,000 seed per kg.

Treatment: Not necessary for fresh seed.

Storage: Seed can be stored for up to three months, but this period can be extended if it is refrigerated. It is better to avoid storage.

Management

Moderate to fast growing. Pollarding, lopping, coppicing and pruning. Only young trees coppice well.

Remarks

It can be an important dry-season fodder although not top-quality. The leaf litter can be used as bedding material in livestock zero-grazing units. A mixture of manure and *Grevillea* leaves make a very good addition to the soil. The tree grows well with food crops if managed to reduce shade. The timber is hard and has an attractive grain — the red-brown colour and silky surface like that of the true oak, *Quercus*.



Photo: Patrick Maundu



Photos: Patrick Maundu



Grewia bicolor

Tiliaceae

Indigenous

Am: *Sefa, Somaya, Teye*

Or: *Haroresa*

Sm: *Kobesh, Komesh*

Tg: *Aba, Dawa, Leshem*

Ecology

A common tree of the semi-arid tropics of Africa and India. A shrubby tree that occurs in nearly all regions of Ethiopia in Acacia woodland, wooded grassland, along rivers and streams, on sandy soils and exposed rocky ground. It grows well in Moist and Wet Kolla and Weyna Dega agroclimatic zones, 500–1,800 m.

Uses

Firewood, timber, poles, tool handles, bows, arrows, walking sticks, food (ripe fruit), medicine (roots, bark), fodder (leaves, fruit).

Description

A low shrub or tree, 2–10 m, in dry deciduous woodland, produces branches from the base of the main trunk. **BARK:** Smooth when young, dotted with breathing pores; later dark, rough and scaly. **LEAVES:** Oval to oblong, pointed, 1–8 cm, the edge finely toothed, shiny green above but pale grey-white below, drooping in heat. **FLOWERS:** Bright golden yellow, sweet smelling, small petals bent back over larger sepals. **FRUIT:** 2-lobed or unlobed and rounded, soft, 5 mm, orange then black, hairy at first, edible, sweet but sharp on the tongue.



Propagation

Seedlings. *Grewias* generally reproduce well naturally if protected from grazing and fire.

Seed

9,000–15,000 seed per kg. Germination is good but sporadic, completed after 6 weeks.

Treatment: Not necessary but soaking in cold water for 12 hours may hasten germination.

Storage: Seeds can be stored for a year at room temperature if kept dry.

Management

Slow growing; coppicing, pruning and thinning in pastures.

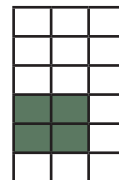
Remarks

The wood is hard and strong and young branches are bendable, therefore suitable for making bows, etc.



Grewia ferruginea

Tiliaceae



Indigenous

Af: Fo

Am: Alenqoza, Lenkoata

Ga: Gingino

Gm: Sakeho

Or: Bururi, Dokenu, Lanqisa, Lensa, Ogomdi

Sm: Lato

Tg: Sankwah, Tsimkuya

Ecology

A widespread shrub, growing in riverine forest, near lakes and along rivers in open *Acacia-Combretum* woodland in Dry and Moist Weyna Dega as well as Moist and Dry Kolla agroclimatic zones, 1,300–2,700 m.

Uses

Firewood, timber (local construction), farm tools, food (fruit), fodder (leaves), rope (bark).

Description

A shrub or small tree to 7 m, young shoots, leaf and flower stalks covered with red-brown hairs (ferruginea = rusty). **LEAVES:** Long oval to 13 cm, the tip pointed or rounded, base often rounded to a short stalk, edge toothed, 3 veins from the base, vein network very clear below. **FLOWERS:** Yellow, purple or white, solitary or in twos or fours, in a terminal head about 5 cm long, the central flowers opening first, many stamens in the centre, **FRUIT:** In 4 parts, each rounded and fleshy about 5 mm across.

Propagation

Seedlings.

Seed

15,000 - 20,000

Treatment: No treatment needed.

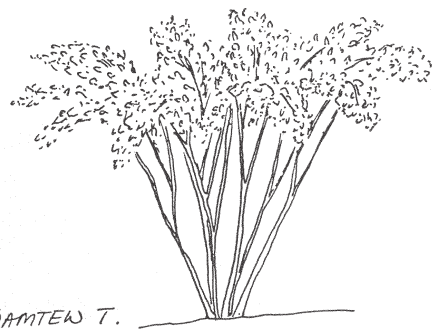
Storage:

Management

Seeds germinate well. Coppice reduction, pruning and - for the desired shape.

Remarks

Most species of *Grewia* have edible fruit. The seeds may, however, cause constipation if eaten in large amounts. *Grewia* species are good sources of fibre. Their stems are often tough and durable and thus have many uses in the household. The hard, strong wood is used for clubs, walking sticks, head rests as well spears shafts and handles of farm implements.



JAMTEW T.

Grewia villosa

Tiliaceae



Indigenous

Am: *Lenquata*

Br: *Ogumdi, Morudo, Moorodah*

Or: *Ogomdi*

Ecology

A shrub of the arid areas in Africa and India. In Africa, it is found from the Cape Verde Islands and Senegal in West Africa to the Sudan, Eritrea and Ethiopia, further east to India and south to South Africa, often on river banks liable to flooding, or on stony ground, in the shade of larger trees. Performs well in Moist and Wet Kolla and Weyna Dega agroclimatic zones in nearly all regions, 400–1,800 m.

Uses

Firewood, poles, tool handles, walking sticks, bows, arrows, food (fruit), medicine (roots, bark), fodder (leaves), fibre (bark).

Description

A deciduous shrub about 3 m with very distinctive leaves, young parts covered with pale silky hairs, branches purple-brown. LEAVES: Almost round to 12 cm across, on stalks to 4 cm; paler below and more hairy, 5 veins clearly seen. FLOWERS: Pink, turning yellow with age, in small clusters without stalks opposite leaves. FRUIT: Usually single, soft and hairy when ripe, red-brown, about 1 cm across, 1–2 hard seeds within each nut.

Propagation

Seedlings, direct sowing at site. *Grewias* generally reproduce well naturally if protected from grazing and fire.

Seed

16,000–17,000 seed per kg.

Treatment: Soak in cold water for 12 hours. Germination is good and completed after 6 weeks.

Storage: Can be stored for a year if kept cool in airtight containers.

Management

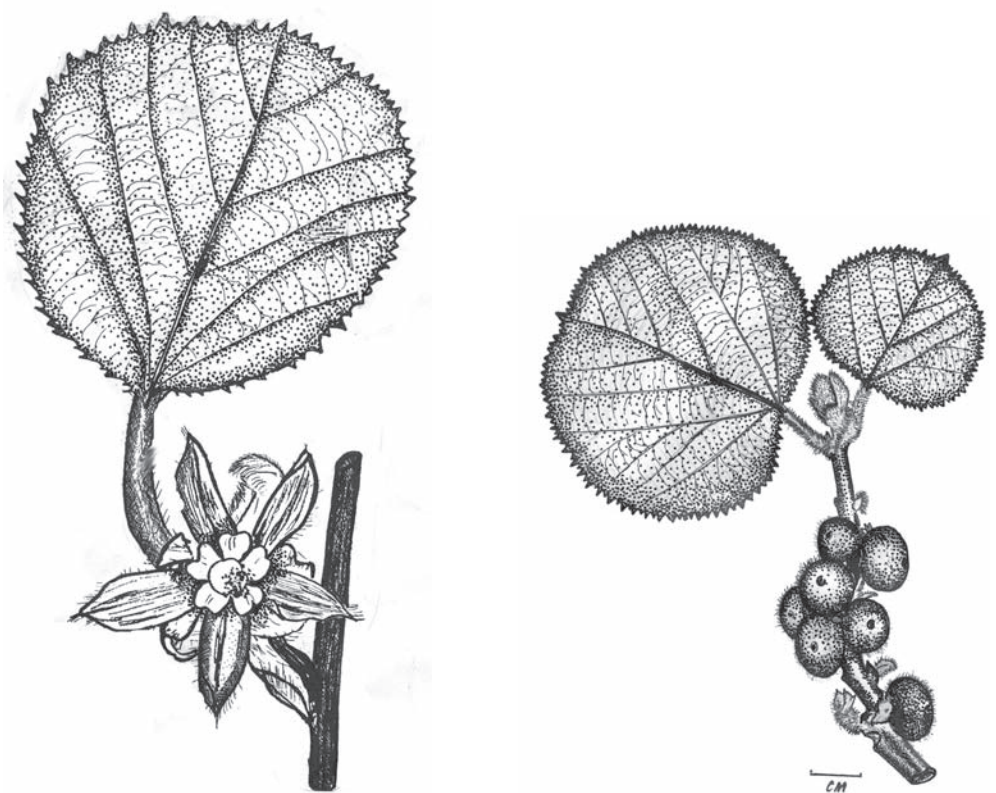
Slow growing.

Remarks

A much-liked sweet fruit.

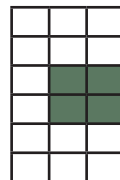


Photo: Patrick Maundu



Hagenia abyssinica

Rosaceae



Indigenous

Ag: *Gora-gora, Shinchi*

Am: *Kosso*

Or: *Hucha, Heto*

Ecology

A tree confined to Africa, from Ethiopia to Malawi. It is found in upland rainforest at even higher altitudes than bamboo and may be the last tree before moorland; naturally often the dominant tree of the woodland zone just above the mountain bamboo. Occasionally found also at lower altitudes. Formerly one of the commonest high-altitude rain forest trees in Ethiopia. Now usually only scattered trees remain in Moist and Wet Weyna Dega and Dega agroclimatic zones. Spread in nearly all regions, 2,300–3,300 m.

Uses

Firewood, timber (furniture, flooring), carvings, poles, medicine (bark, roots), ornamental, mulch, green manure, soil conservation, firebreak.

Description

A tree to 20 m with a short trunk and thick branches, the crown leafy and rounded. BARK: Red-brown, thick, flaking irregularly, branchlets covered in silky brown hairs and ringed with leaf scars. LEAVES: Compound to 40 cm in large terminal tufts, 5–8 leaflets on each side, leaflets bright green above, covered with silvery hairs below, red and sticky when young, leaf edge toothed and fringed with hairs, stalk winged and hairy. FLOWERS:

In large attractive masses to 60 cm, female heads pink-red, male heads more feathery, orange-white. The sexes are on different trees. FRUIT: Small and dry, one-sided.

Propagation

Seedlings, wildings.

Seed

The fruit should be collected just after they have turned brown. Later than that the fruit will remain on the tree but is attacked by insects. After collection, dry the fruit in the sun but protect from wind. Germination 40–60 % in 14–21 days. 200,000–500,000 seed per kg.

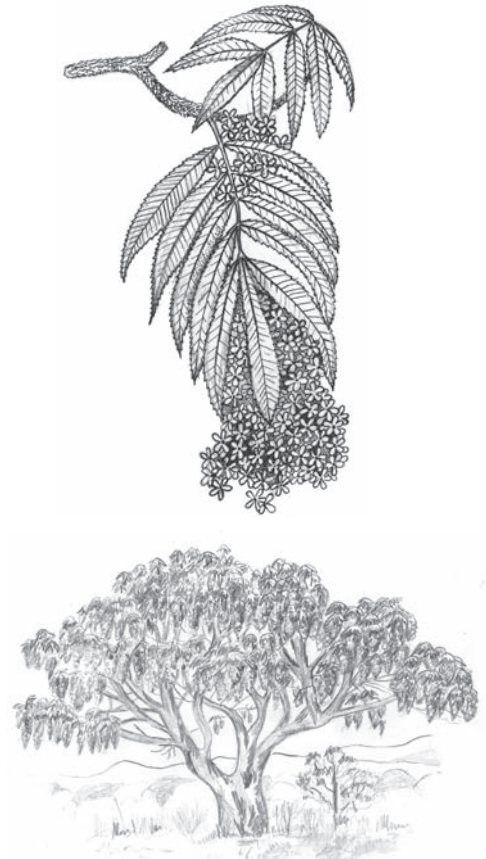
Treatment: Not necessary.

Storage: Seed stores for 6–12 months.

Management

Remarks

The wood is dark red, hard and used for furniture but attacked by borers. Used locally for its medicinal qualities, kosso from the female flowers is used as a dewormer. Not competitive against crops if managed to prevent shading. It is recommended for homesteads because of its good timber. It constantly sheds leaves forming a carpet of dried leaves.



Hevea brasiliensis

Euphorbiaceae



The Amazon Region, South America

Am: *Yegoma zaf*

Eng: *Hevea*

Ecology

A tree of moist and hot lowlands, widely cultivated in the tropics and commercially most valuable in Malaysia, Indonesia and Thailand. There is production on a commercial scale also in West Africa and South America. In Ethiopia, it grows well in Wet Kolla agroclimatic zone. Because of the extended root system, the soil should be deep. The optimal pH is 5 to 6. *Hevea* stands brief waterlogging but it will only produce well on well-drained soil.

Uses

Latex (white sap is tapped to obtain rubber).

Description

A large tree that grows up to 20 m, all parts producing white latex when cut. **BARK:** Smooth, light grey. **LEAVES:** Compound with three oval leaflets on a long stalk, each leaflet smooth and sharp tipped. **FLOWERS:** Small, in branched heads by leaves, female flowers at the tip, male at the base. **FRUIT:** Woody three-part capsules, about 4 cm long. The dry capsule splits explosively to set free the seeds, each grey and patterned, to 3 cm long.

Propagation

Seedlings, budding for good varieties. Germinate seed in seed beds and then transplant into pots. Bud after 3-6 months

(green budding) or after 1-2 years (brown budding).

Seed

About 300 seed per kg.

Treatment: None.

Storage: Fresh seeds are recommended, the viability decreases rapidly after 1 month.

Management

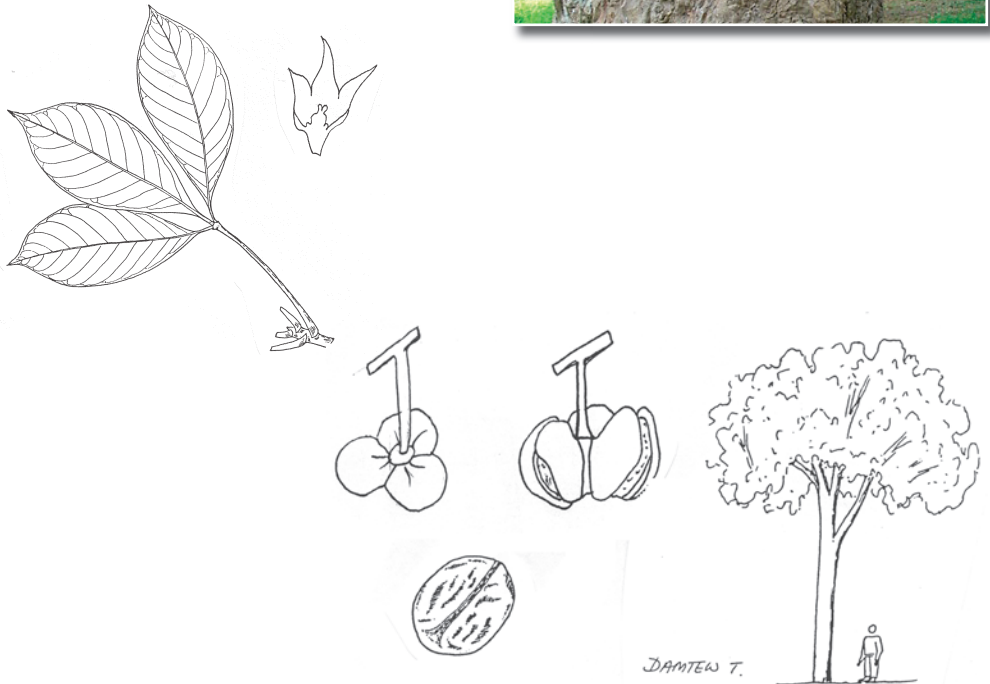
In commercial production, planting densities in the stand vary between 150 and 400 trees per ha. Other crops can be grown between rows of trees. Weeding and use of leguminous and shade-tolerant cover crops also recommended. Under favourable conditions, tapping can begin 4 years after planting but often only after 6-9 years. Expert advice is recommended for any larger-scale planting.

Remarks

Several botanical varieties have been described. The cultivated forms belong to var. *brasiliensis*. Latex can be tapped every few days and may continue from the same trees for many years. Fertilisers containing phosphorous may be essential for good growth of leguminous cover crops.

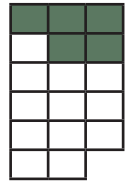


Photo: Patrick Maundu



Hypericum quartinianum

Hypericaceae



Indigenous

Am: *Amija*

Or: *Riga ganzi*

Ecology

This species is found in semi-humid mountain savannah or shrub savannah in Moist, Wet and High Wurch agroclimatic zones in nearly all regions, 1,500–3,000 m.

Uses

Firewood, charcoal, bee forage.

Description

A shrub or small tree, 3–4 m. **LEAVES:** Long, oval and simple, grey-green, to 7 cm long in opposite pairs, clasping the stem at the base, the tip pointed. Side veins are only seen towards the leaf base. **FLOWERS:** Bright yellow, rather few in terminal bunches, each to 6 cm across, with many central stamens around styles, all yellow. **FRUIT:** A dry brown capsule, breaking open to set free seed when ripe.

Propagation

Seedlings. *Hypericum* are readily propagated from seed, cuttings and rooted runners for species that provide them and, in vigorous and quickly spreading kinds, by simple division.

Seed

Treatment: No treatment needed.

Storage: Dried seed can be stored well in air-tight and moisture-free container.

Management

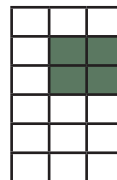
Often natural, not cultivated and managed.



Hypericum revolutum

(*H. lanceolatum*)

Hypericaceae



Indigenous

Ag: *Awidi*

Am: *Amija*

Eng: *Curry bush, Giant St. John's wort*

Or: *Edera, Garamba, Hendi, Ule foni, Muka foni, Gorgora*

Ecology

A tall shrub of open forest, forest margins and montane woodland and grassland often with *Erica arborea* and/or *Hagenia abyssinica* in Moist and Wet Dega and Wurch agroclimatic zones in almost all regions, 2200–3700 m.

Uses

Firewood, timber (local construction), medicine (powdered dry leaves and stems, oily extracts), bee forage, soil conservation.

Description

A shrub or tree which can reach 10 m, usually smaller. BARK: Red-brown and scaly. Young stems are 4-angled. LEAVES: Small and narrow to 4 cm long, in opposite pairs crowded along stems, green or blue-green, the tip pointed and base clasping the stem, the leaf edges sometimes rolled under (“*revolutum*”). FLOWERS: Single at stem tips, bright yellow to 5 cm across, 5 petals to 3 cm long around a central mass of stamens, sepals edged with black dots. FRUIT: A ellipsoid, five-part capsule, 11 – 15 mm long, red-brown, 1 cm across, 5 parts containing tiny seeds.

Propagation

Root suckers, cuttings. *Hypericums* are readily propagated from seed, cuttings, rooted runners for species which provide them, and, in vigorous and quickly spreading kinds by simple division.

Seed

Treatment: Often natural, not cultivated.

Storage:

Management

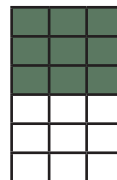
Remarks

Used in gardens elsewhere. The English name, curry bush, comes from its distinctive smell.



Hypericum roeperianum

Hypericaceae



Indigenous

Am: *Amija*

Eng: *Large-leaved St. John's wort*

Ecology

Found in dry evergreen forest margins, bushland, grassland and beside streams and rivers with bamboo or in high-altitude woodlands of Dry, Moist and Wet Dega, Frost and Alpine-frost agroclimatic zones of Tigray, Gonder, Gojam, Welo and Shoa, 3,000–3,800 m.

Uses

Firewood, charcoal, bee forage.

Description

A thickly branched shrub or small tree to 3–5 m. LEAVES: Without stalks, long oval, in opposite pairs, widely spaced along the stem, 2–8 cm long, dull green, paler below, tip pointed. Midrib clear below, veins from the leaf base curve right to the tip. Veins below divide leaving gland dots outlined — seen against the sky. FLOWERS: Bright orange-yellow in stalked groups, few to many, beside leaves or terminal, each 5 cm across. FRUIT: Dry capsules as in other *Hypericum* spp.

Propagation

Seedlings. *Hypericum* are readily propagated from seed, cuttings, rooted runners for species which provide them, and, in vigorous and quickly spreading kinds by simple division.

Seed

Treatment:

Storage:

Management

Coppicing, lopping. Lopping



DAMTEW T.

Hyphaene thebaica

Arecaceae



Indigenous

Am: *Zembaba*

Br: *Kone*

Eng: *Doum palm, Egyptian doum palm*

Or: *Meti*

Sm: *Bar*

Tg: *Kambash*

Ecology

One of 10 African *Hyphaene*, this is the common doum palm of Ethiopia, Egypt and the Sudan, growing also in West Africa. It is usually found on lowland plains mainly in river valleys and around oasis, also often in damp places in woodland and at hot springs in Dry and Moist Bereha and Dry and Moist Kolla agroclimatic zones from 100 m below sea level at Dallol Afar in the Danakil Depression to 1,000 m in Gonder, Gojam and Ilubabor. It resists bush fires.

Uses

Timber, food (nuts), baskets and mats (leaves).

Description

A tree 10–15 m, easily recognized by the regular branching which may form up to 16 leafy heads. LEAVES: Fan-shaped, nearly 2 m x 1 m across on long spiny stalks. FLOWERS: Male and female trees. Male flowers in a leafy sheath over 1 m long. Female spike fatter, producing the fruit. FRUIT: Smooth, shiny orange-brown when ripe, like rounded cubes with 2 flat faces, 6–8 cm long. Edible pulp surrounds 1 white seed.

Propagation

Seedlings.

Seed

Treatment:

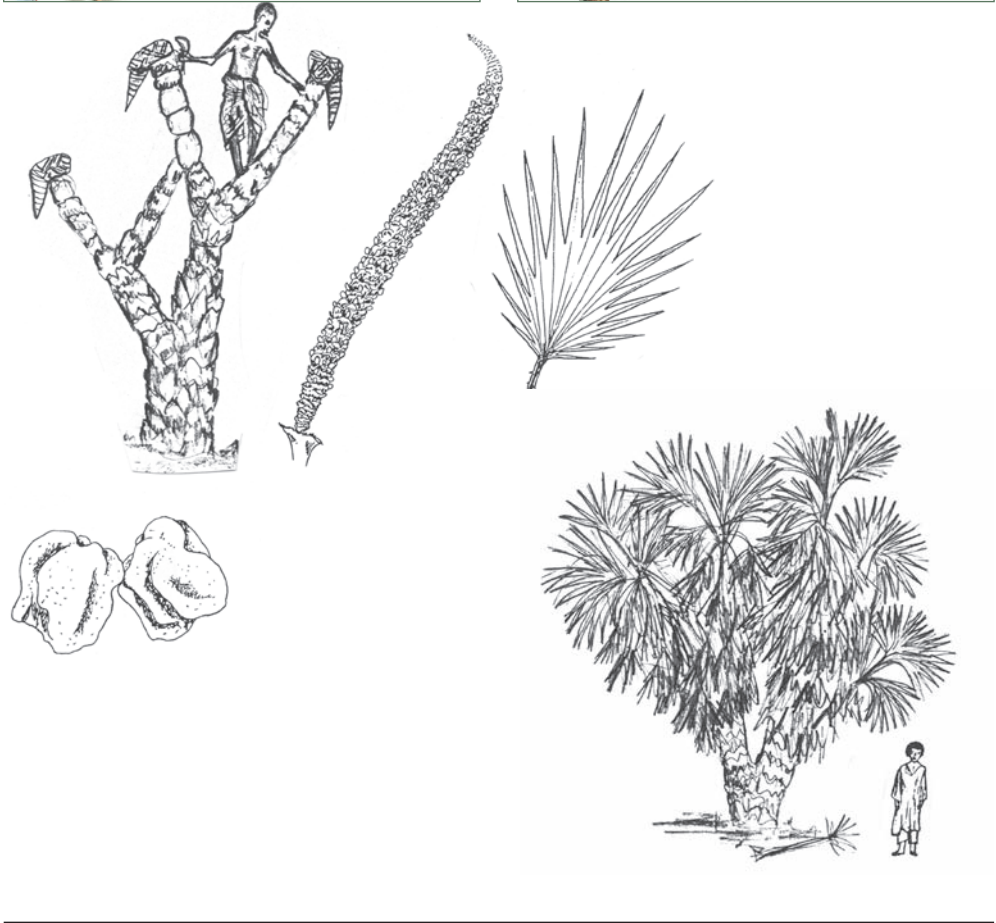
Storage:

Management

Coppicing, lopping.

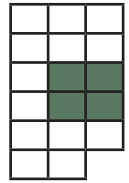
Remarks

This palm is widely used in Sudan and elsewhere and often indicates an area of good soil with shallow ground water. A mature tree can produce 50 kg of fruit a year.



Ilex mitis

Aquifoliaceae



Indigenous

Am: *Misir gemfo*

Eng: *African holly*

Kf: *Keto*

Or: *Hamsika, Miesa, Tulto, Wolkite*

Sd: *Mikichio*

Wt: *Misira shendirra*

Ecology

The genus *Ilex* is widespread but there are few in Africa. This species extends from Ethiopia to South Africa being widely distributed but extremely variable. In Ethiopia it frequently occurs along river banks and stream beds, in moist evergreen forests, in semi-humid highland forests and highland woodlands. It is particularly associated with *Erica*, *Croton*, *Schefflera*, *Maesa*, *Podocarpus* and *Juniperus*. It grows well in Moist and Wet Weyna Dega and Dega agroclimatic zones in Wolega, Ilubabor, Shoa, Harerge, Arsi, Bale and Kefa, 1,500–3,000 m.

Uses

Firewood, charcoal, timber (local construction), tool handles, farm tools, medicine (bark).

Description

An evergreen shrub or tree, 4–24 m, very variable. The trunk usually short but up to 1 m across. **BARK:** Pale grey-brown, smooth; branchlets with a purple colour. **LEAVES:** Dark green and shiny, long oval to 14 cm, tip pointed, narrowing to a short stalk. The middle deeply channelled into the thick leaf. The edge may have a few sharp spines. **FLOWERS:** Small, white

and fragrant, on hairy stalks beside leaves.

FRUIT: Small, berry-like, yellow-green ripening shiny red. Soft and edible with 4–6 seeds inside.

Propagation

Seedlings.

Seed

Treatment: Not necessary.

Storage:

Management

Pruning, lopping, pollarding.

Remarks

The hard, white wood is used as timber, but the trunk is normally short. This genus includes several hundred members of mainly trees and shrubs

Found mostly in Asia and America.



Jacaranda mimosifolia

Bignoniaceae



Brazil

Am: *Yetebmenja zaf*

Eng: *Jacaranda, Brazilian rosewood*

Ecology

A popular tree widely grown as an ornamental throughout the highland tropics. It grows in most soils except waterlogged ones, and is deep rooted. In Ethiopia, it is most common in highland areas but can also grow in some drier ones. It grows well in Moist and Wet upper Kolla and Weyna Dega agroclimatic zones, 1,300–2,400 m.

Uses

Firewood, tool handles, carvings, poles, bee forage, shade, ornamental, windbreak.

Description

A deciduous tree up to 20 m with spreading branches making a light crown. **BARK:** Pale grey and smooth, rough and peeling with age. **LEAVES:** Compound and feathery on a stalk to 40 cm, up to 30 pairs of pinnae bearing the little pointed leaflets. **FLOWERS:** Striking blue-violet, in clusters, each flower bell shaped to 4 cm, usually on the bare tree before leaf growth. **FRUIT:** Rounded, woody capsules to 7 cm across with a wavy edge, brown-black when mature, splitting on the tree to set free many light winged seeds. Capsules may hang on the tree for 2 years.

Propagation

Seedlings, wildings.

Seed

Seeds profusely. Germination rate 50–85%. 63,000–80,000 seed per kg.

Treatment: Not necessary.

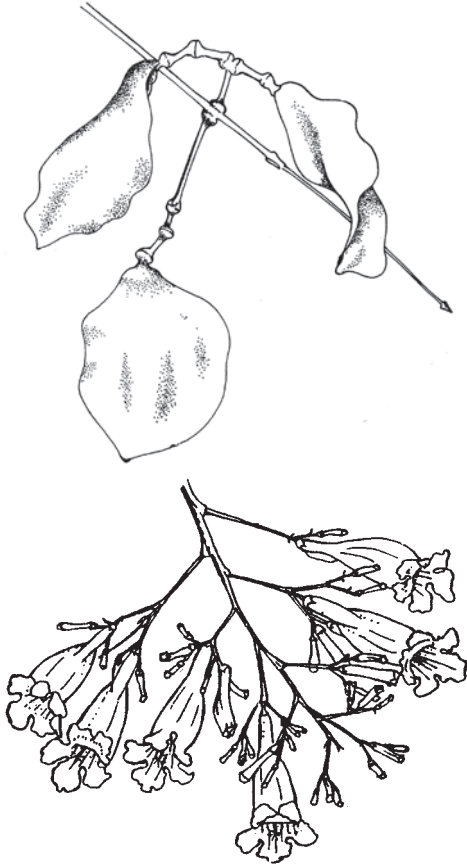
Storage: Seed does not store well. Sow fresh seed for best results.

Management

Very fast growing on good sites. Lopping, pollarding, coppicing, pruning (young trees).

Remarks

A greedy feeder with an aggressive root system. Few plants or crops can grow below this tree and it is unsuitable for intercropping. *Jacaranda* is a genus of a few dozen members, mainly trees and shrubs of tropical American origin.



Jatropha curcas

Euphorbiaceae

Tropical America

Eng: *Physic nut, Purging nut*

Description

An erect, stiffly branched succulent shrub or small tree 3-4m. **BARK:** Thin and yellow-grey with a papery peel; an unpleasant milky sap when cut. **LEAVES:** Alternate and simple with 3-5 shallow lobes, to 15 cm long, widely rounded at the base on a stalk to 16 cm. **FLOWERS:** Small, yellow-green, shortly stalked on branched heads with a shorter stalk than the leaves. **FRUIT:** Ovoid capsules, slightly three-angled 2.5-4 cm long, yellow when ripe dark when hardening, contain 3 mottled blackish thin-shelled oblong seeds that measure 20 mm by 12mm. When crushed the seeds produce 35 – 37 % yellow oil.

Ecology

Mainly occurring in tropical America and Africa. This species was introduced to Africa centuries ago and is now naturalized in drier areas in many countries. In it naturalized in western and southwestern lowlands of Ethiopia frequently planted as a live fence around homesteads or used as a boundary marker. It can grow well in well drained soils of Dry and Moist Bereha and Dry, Moist and Wet Kolla agroclimatic zones of Ethiopia.

Uses

Oil from seeds is used for making soap and lighting lamps. Latex contains Jatrophine which has anti-microbial and anti-fungal properties; also used an ointment against skin disease, rheumatism and for sores

in livestock. Bark yields dark blue dye. Twigs are used for brushing teeth. Leaf from juice used for treating external piles. Decoction of leaves used against cough and as an antiseptic at birth. Sap is used to treat wounds and bleeding and roots are reported to be used as an antidote for snakebites. The whole plant is used as live fence, boundary marking, ornamental.



Propagation

Seedlings, cuttings.

Seed

Collect when capsules split open. About 2,400 seeds per kg; germination rate 70-100%. Dried seeds are soaked in cold water overnight and then sown directly onto seedbed. Germination takes place in 12-15 days.

Treatment: Do not dry fruits on roasting surfaces if for planting. Store them for 3 months before use to break primary dormancy; but use them before 15 months. Store seeds in low moisture.

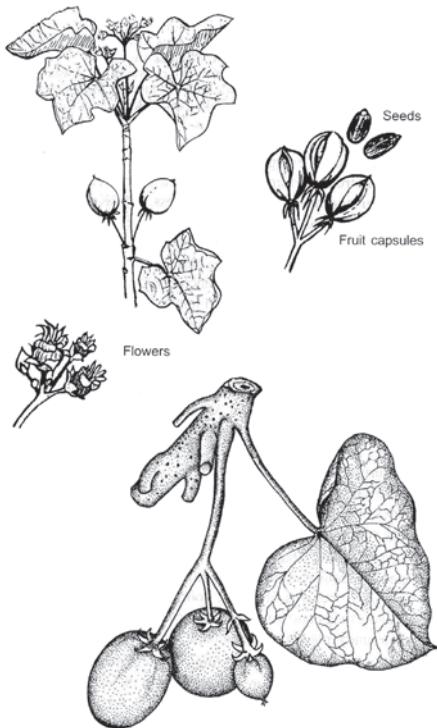
Storage: Seeds are oily and do not store for long. Storage in dry-air condition with moisture content <5% is preferred.

Management

Fast growing; pruning, trimming as a fence.

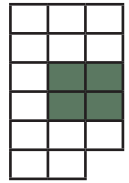
Remarks

There are 15 species of the *Jatropha* genus in Ethiopia. The oil has purgative properties; seeds are toxic and should not be swallowed. Even the remains pressed from seeds can be fatal.



Juniperus procera

Cupressaceae



Indigenous

Am: *Tid*

Eng: *African pencil cedar*

Or: *Gatira, Hindessa*

Ecology

A valuable timber tree indigenous to Ethiopia and eastern Africa highland forests, 1,500–3,300 m. It does best in high-rainfall areas but can survive quite dry conditions once established. It is the largest juniper in the world. It performs well in Moist and Wet Weyna Dega and Dega agroclimatic zones.

Uses

Firewood, timber (floors, roof shingles, pencils, joinery), poles, posts, medicine (bark, leaves, twigs, buds), shade, ornamental, windbreak.

Description

An evergreen tree about 40 m with a straight trunk, although often fluted. A pyramidal shape when young. The foliage is finer and more open than cypress. **BARK:** Thin grey-brown, grooved and peeling with age. **LEAVES:** Prickly, young leaves to 1 cm, soon replaced by scale-like mature leaves, blue-green, triangular and closely overlapping on the branchlets. **FRUIT:** Male cones small and yellow with pollen, female purple-blue fleshy “berries” about 8 mm, the pulp containing 1-4 hard seeds.

Propagation

Seedlings, wildings — often numerous.

Seed

Mature brown to purplish black fruit collected from the crown. Spread fruit in a thin layer on a floor for drying. Then crush the fruit with a mortar and pestle. Sieve and winnow to separate seeds from the rest of the cone. Germination rate 20–70% within 25–80 days. 40,000–50,000 seed per kg.

Treatment: Not necessary.

Storage: Seed can be stored in airtight containers for some time if dried properly.

Management

Fairly fast growing in the open but otherwise slow. Prune and thin trees for timber and poles. The tree takes at least 30 years to grow to maturity.

Remarks

Does not grow well alongside crops. It regenerates well and deserves high priority in reforestation. The wood is termite resistant. The tree is now rare due to over-exploitation. Although belonging to the cypress family, this subgroup has no dry cones like *Cupressus*.



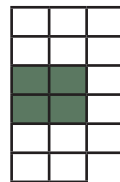
Photo: Patrick Maundu



Justicia schimperiana

(*Adhatoda schimperiana*)

Acanthaceae



Indigenous

Ag: *Lili*
Am: *Sensel*
Gmz: *Achir*
Gr: *Sensel*
Km: *Gilbana*
Or: *Dumuga, Tumuga*
Sh: *Simiza*
Sd: *Choke*
Tg: *Suda*

Ecology

A common shrub growing in moist montane forest, usually near streams and rivers, in evergreen scrub on hill slopes, forest clearings, coffee plantations, waste ground or planted as hedges around homesteads in Dry and Moist Weyna Dega and Moist Dega agroclimatic zones in Tigray, Gonder, Gojam, Ilubabor, Kefa, Sidamo, Shoa and Harerge, 1,300–2,800 m.

Uses

Firewood, live fence.

Description

A leafy shrub up to 4 m, the stem brittle and breaks easily. LEAVES: Simple and opposite, long oval to 13 x 4 cm, tip pointed, narrowed to a short stalk. FLOWERS: In conspicuous terminal heads on long stalks seen clearly above the leaves, each small flower lies inside a green-yellow leafy bract 1.5 cm long, its edge clear and membranous, flowers white or yellow-white, tubular to 3 cm long, two-lipped with dark purple throat or lines on the lip.

FRUIT: A capsule, narrowed at the base, containing 4 seeds, surface rough.

Propagation

Usually propagated by cuttings. Seedlings can also be raised.

Seed

Treatment: Not necessary.

Storage:

Management

Firming as hedge for tight fence.

Remarks

The wood is commonly used for baking 'injera', made of the Ethiopian staple tef.



DAMTEW T.

Kigelia africana

(*K. aethiopum*, *K. pinnata*)

Bignoniaceae



Indigenous

Anu: *Ja*

Eng: *Sausage tree*

Ga: *Duduba*

Ecology

Widespread in Africa, this tree is found in wet savannah and along rivers in arid areas of Moist and Wet Kolla and Bereha agroclimatic zones in Gojam, Ilubabor, Kefa and Gamo Gofa, 500–1,850 m.

Uses

Firewood, timber (dugout canoes, yokes), local honey beer (fruit), medicine (fruit, bark), fodder (flowers), dye (boiled fruit).

Description

A semi-deciduous tree with a rounded crown, to 9 m in open woodland but 18 m beside rivers. **BARK:** Grey-brown, smooth, flaking in round patches with age. **LEAVES:** Compound, growing in threes, at the end of branches, few leaflets, each broadly oval, very rough and hard, up to 10 cm, often with a sharp tip, edge wavy. **FLOWERS:** On long rope-like stalks 2–3 m. Horizontal, reddish branches, in threes, bear upturned trumpet flowers, petals folded and wavy, dark maroon with heavy yellow veins outside, an unpleasant smell. **FRUIT:** Large grey-green “sausages”, 30–60 cm long. Hanging stalks remain on the tree. Several kilos of fibrous pulp contain the seeds—only released when fruit rots on the ground.

Propagation

Seedlings, direct sowing at site. Cut ripe fruit in half lengthwise and put cut side down on a patch of rich, moist soil. After a few weeks there will be many seedlings.

Seed

Not a prolific seeder. Poor germination rate and slow to germinate. 3,400–6,000 seed per kg.

Treatment: Not necessary.

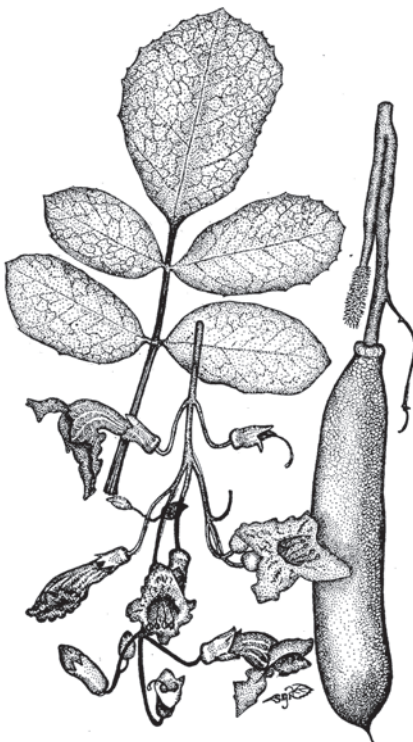
Storage: Seed should not be stored.

Management

Slow growing, Coppicing.

Remarks

The tree is most well known for its sausage-like fruit which is opened up lengthwise and used to ferment traditional honey beer. Unripe fruit is poisonous. The tree does not compete with crops.



Lannea welwitschii

Anacardiaceae



Indigenous

Agn: *Arim*;

Mjr: *Cholmi*

Ecology

In Ethiopia it grows in lowland forest in Ilubabor and Kefa, 1,100—1,250 m., in moist Bereha and wet and moist kolla.

Use

Timber (construction), food (fruit).

Description

It is a tree up to 30 m in height, crown relatively small. BARK: smooth, pale-gray, twigs stout, prominently packed with a line of loosely packed cork cells, minutely branching hairs when young and soon becoming with no hair. LEAVES: glabrous, 5-7, foliolate, axis of its compound leaf 5-22 cm long, becoming hairless; leaflets with petiolules up to 13 mm long, lanceolate, 10-17 cm in length and 4.5-8 cm in width, slightly leathery, base cuneate, often unequal sided, tip bluntly acuminate, tertiary veins impressed on both sides. FLOWER: inflorescences, produced with or slightly before leaves, paniculate, to 15 cm long, branches to 5 cm, sparsely stellate-floccose, pedicels about 1.5 mm long, petals 2-2.5 mm in length and 1.2-1.5 mm in width, pale creamy yellow. FRUIT: drupe, about 8 mm long and 6 mm wide, glabrous.

Propagation

Seedlings, wildings

Seed

Treatment: No need

Storage: Can be stored for few months if dried well and put in air-tight container.

Management

Can easily germinate in one weeks time.

Remarks

Children and the youth eat the fruit raw.



Lawsonia inermis

Lythraceae



Indigenous

Am: *Hina*

Eng: *Henna*

Ecology

A shrub widely distributed in northern, western and central Africa. It is also cultivated in many parts of the world as an ornamental and source of dye. In Ethiopia, it grows mainly along river courses and in semi-arid areas, for example in the Afar plains, and in Harerge and Bale regions, 0-1,100 m.

Uses

Medicine, dye (leaves), perfumes, thatching, carriers for donkeys, ornamental, fodder (leaves).

Description

A twiggy shrub or small tree to 4 m, with short side shoots often ending in a spine. Young stems with a square cross-section. LEAVES: Small and widest at the middle or slightly above, up to 2 x 4 cm, opposite, shiny, usually tinged reddish brown when young. FLOWERS: White to cream, small, in long branching heads to 30 cm, sweet-scented. FRUIT: Small round reddish-yellow capsules borne in dense clusters, each to 8 mm, with persistent style, splitting into 4 parts. Capsules turning brown as they dry.

Propagation

Seedlings, cuttings.

Seed

100,000–500,000 seeds per kg; germination rate up to 70%. Sow in seedbed and prick out.

Treatment: Not necessary.

Storage:

Management

Slow growing. Coppicing.

Remarks

The plant produces a volatile oil with a pleasant odour. An orange-red dye extracted from leaves and young shoots is used to colour clothes and leather, to decorate nails. Women use it to colour their skin and condition hair (henna). The dye is released by using citric or tartaric acid, lemon juice or tea. The fruit and flowers attract birds, and antelope and livestock browse the leafy branches. The plant may become a weed. The leaves and young shoots are dried and made into a powder, to which water and citric or tartaric acid from lemon juice or tamarind are added to form the dye. Oil from flowers is used in parts of Africa as a perfume in other cosmetics. This is the only species in the genus *Lawsonia*.



Photo: Patrick Maundu



Photo: Patrick Maundu



Lepidotrichilia volkensis

Meliaceae

Indigenous

Agn: *Kijang*

Ecology

Found in the under-storey vegetation of moist forests in Ilubabor, Keffa, Sidamo, Harrarghe, Shoa and Wolega regions, 1050—2,800 m.

Use

Firewood, timber (local construction), food (fruit).

Description

Tree usually up to 9 m in height, sometimes shrub. **LEAVES:** in odd number pinnate, leaflets 3-4 pairs, oblanceolate to elliptic, up to 15 in length and 6 cm in width (usually smaller), acute at the apex, markedly asymmetric at the base; underside slightly hairy. **FLOWER:** bisexual, inflorescence up to 10 cm long; calyx 0.2 cm long; petals 5, much longer than the calyx in bud, white and 0.3 to 0.4 cm long, densely covered with short hairs externally; filaments 0.3–0.4 cm long, densely covered with short hairs at base outside, sparsely long hairs in upper half inside. **FRUIT:** drupe, up to 1.5 cm in length and 1 cm in width, encrusted with star-shaped scales; seeds arising from axils.



Propagation

Seedlings, wildings.

Seed

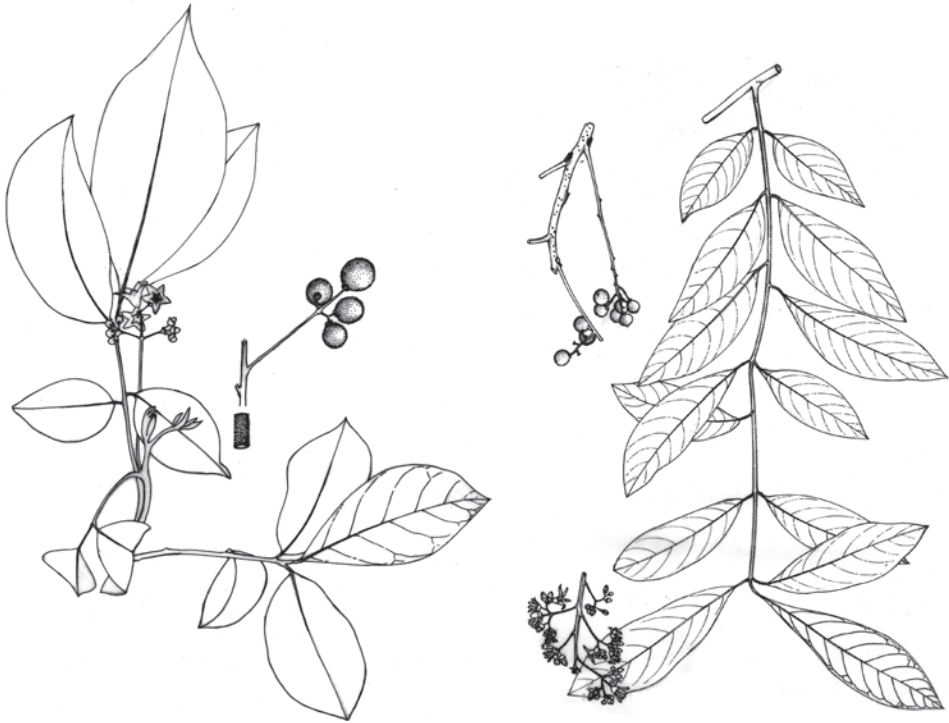
Treatment: No need.

Storage: Store for short period of time.

Management

Remarks

Young and elderly people eat the fruit raw. The bark is used for fermentation.



Leucaena leucocephala

Fabaceae

Central America

Am: *Lukina*

Eng: *Leucaena, Pink leucaena, Lead tree*

Or: *Lukina*

Tg: *Lukina*

Ecology

Widely introduced in the tropics over the past 100 years, reaching Africa in 1950. It grows best in humid Bereha and Moist and Wet Kolla agroclimatic zones in full sunlight on well-drained neutral or calcareous soils, 0-1,600 m. It does not tolerate acidic soils or very dry places. It is recognized as an invasive species and has been invasive in the coastal areas of East Africa. It is replacing indigenous forests in the Hawaiian Islands. A psyllid insect pest, *Heteropsylla cubana*, causes defoliation. The insect spread by chance from Central America to Hawaii in 1984, and has more recently spread through Asia and into East Africa.

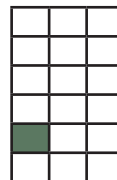
Uses

Firewood, charcoal, timber (from giant types), poles, fodder (leaves, shoots), bee forage, ornamental, green manure, nitrogen fixation, soil conservation, soil improvement, live fence.

Description

An evergreen shrub or tree 5–20 m, depending on the variety, medium leafy canopy, develops a deep tap-root even as a seedling. **LEAVES:** Compound alternate with many leaflets, each thin and pointed to 1.5 cm. Leaves and leaflets fold up with heat, cold or lack of water. There is a

conspicuous round mark on the leaf stalk just before the leaflets. **FLOWERS:** White, round heads about 2 cm across on a long stalk from the leaf axil. **FRUIT:** Numerous bunches of thin, dry pods 10–15 cm, persisting on the tree, releasing 12–25 hard, shiny brown seeds.



Propagation

Seedlings, direct sowing at site.

Seed

The species is a prolific seeder. Germination rate 50–85%. 13,000–34,000 seed per kg, most often around 20,000.

Treatment: Soak in hot water for two minutes.

Storage: Seed can be stored for long periods if kept dry and insect free.

Management

Very fast growing. Lopping. It coppices well.

Remarks

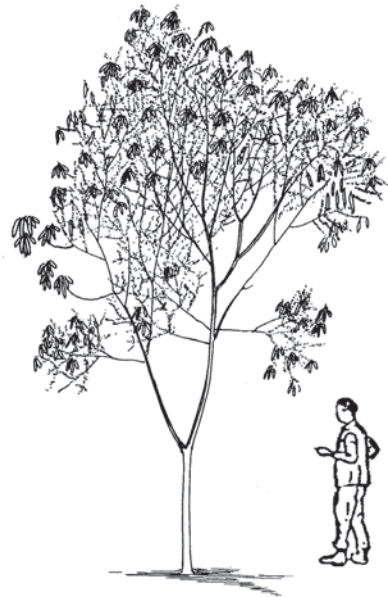
The many varieties have been classified into three types; the giant types preferred. The tree is a potential weed due to prolific seed production and aggressive root system, especially in hot, humid conditions.

Mimosine in the leaves can cause hair loss and stomach problems in livestock. Total feed should not contain more than 20% of *Leucaena*. Root nodules are very active in fixing nitrogen under suitable conditions.

In Kenya, the psyllid defoliates the leucaena, resulting in severely reduced production of fodder as well as wood, but without killing the leucaena.

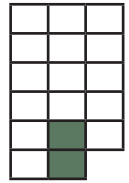


Photo: Patrick Maundu



Lonchocarpus laxiflorus

Fabaceae



Indigenous

Agn: *Lero, Alwaro*

Mjr: *Oleme*

Nur: *Riak*

Or: *Amera, Orora, Marchessa*

Tg: *Tsengwerefya*

Ecology

A tree distributed in savannah areas from senegal and Cape Verde Islands through West and Central Africa to Uganda, the Sudan and Ethiopia. In Ethiopia, it is the only *Lonchocarpus* species and it grows in Moist Bereha, Kolla and Weyna-Dega agroclimatic zones in Gambella, Gonder, Wolega, Ilubabor, Kefa, Shoa and Bale areas, 450-2,150 m.

Uses

Firewood, fodder (leaves for goats and cattle), bee forage.

Description

Deciduous tree 3-12 m in height. BARK: dark when old, full of gray scales and easily peeling-off when young. LEAVES: rough feeling, simple, pubescent on both sides, pale green when young and dark green when mature; leaf tip obtuse and cuneate at the base, margin entire, leaf veins radiating from the base in four and branching towards the leaf tip; Leaf base asymmetric, petiole 4-7mm long; FLOWER: inflorescence in panicles erect at first, ultimately pendulous, 18-40(-60) cm long; individual flowers pinkish-mauve to deep lilac, excellent bee feed. FRUIT: pod, edible, 6-14 cm in length and 1.3-2 cm in width, green when young and reddish when ripe, with few seeds.

Propagation

Seedling and wildings

Seed

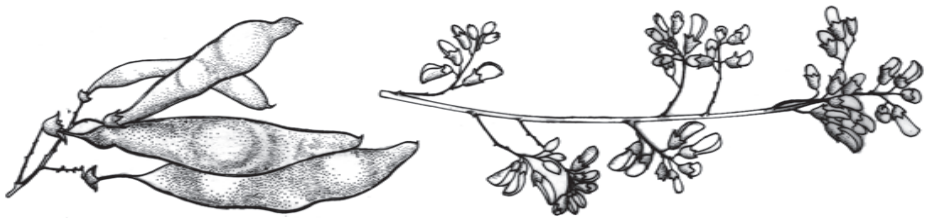
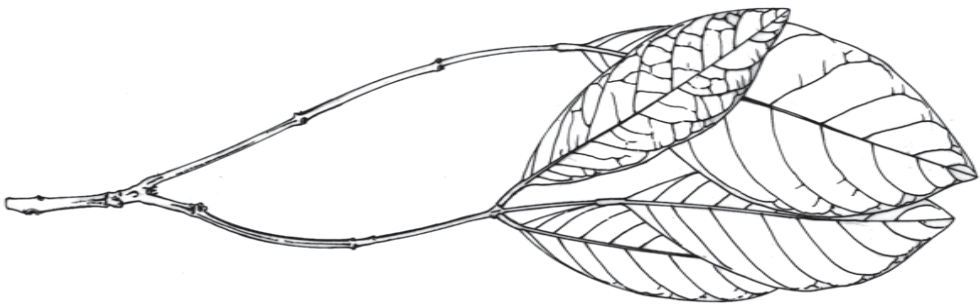
Treatment: Not necessary

Storage:

Management

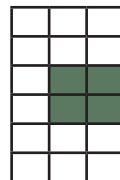
Manage it short for easy harvest of leaves and pods.

Remarks



Maesa lanceolata

Myrsinaceae



Indigenous

Am: *Kelawa, Yeregna qolo*

Gr: *Abeyi*

Kf: *Chago*

Or: *Abayi*

Tg: *Saoria*

Wt: *Gergecho*

Ecology

A straggling shrub or tree in woodlands with distribution extending to southern Africa. In Ethiopia, it occurs in gallery forest, dry evergreen forest margins, woodlands and on mountain slopes with *Acacia*, *Carissa*, and *Euclea*. It has, for example, been recorded in Debre Marks and Yogof State Forests. It grows well in Moist and Wet Weyna Dega and Dega agroclimatic zones in nearly all regions, 1,500-3,000 m.

Uses

Firewood, baking bread (leaves), medicine against Tapeworm (fruit), live fence.

Description

A shrub or small tree about 5 m. **BARK:** Grey-brown, rough. Pale dots of breathing pores on branchlets. **LEAVES:** Simple, wide oval, usually up to 10 cm long, shiny green above, pale below, thick and leathery, the edge well toothed, tip pointed, a leaf stalk 2–3 cm, often yellow. **FLOWERS:** Tiny cream-white, in fragrant branched heads to 10 cm beside leaves; stalks and calyx hairy. **FRUIT:** Very small, round, white and fleshy, topped by the flower remains. Small black seeds inside.

Propagation

Seedlings.

Seed

500,000 seeds per kg, prolific seeder and fruiting all year round.

Treatment: Not necessary, germination is high within 7 – 13 days.

Storage: Mature and properly dried seed can be stored in air-tight containers at room temperature.

Management

Lopping, coppicing.

Remarks

The leaves are used for covering the dough while baking bread ‘injera’, a local bread made from tef. Fruits are used against tapeworm.



Malus domestica

Rosaceae

Am: *Pom*

Eng: *Apple*

Ecology

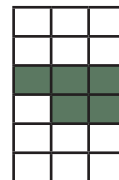
Although a fruit tree for temperate regions, apples are grown above 1,300 m in many tropical and subtropical regions. In Ethiopia, apples are grown in Moist and Wet Weyna Dega and Dega agroclimatic zones in Debre-sina, Chench, Addis Ababa and Fiche areas.

Uses

Food (fresh fruit), drink (apple juice), ingredient in jams, jellies, cakes and deserts in western cuisine (fruit).

Description

Apples are deciduous fruit trees which grow up to 3—4 m. Certain types grow upright whereas others are more spreading. The root system usually consists of a relatively short tapering taproot and several large, spreading lateral roots which branch into a network of smaller, thread-like roots. **BARK:** Smooth when young, grey-green. **LEAVES:** Simple, alternate and toothed or lobed, vary in size, shape, colour, thickness, hairiness and texture. **FLOWERS:** Perfect with a five-lobed calyx, five moderately large petals, numerous distinct stamens and a five-celled, five-styled ovary. **FRUIT:** Spherical with cavities at the basal and apical ends. Skin is green, yellow or red or may develop two or all three of these pigments.



Propagation

Use grafted seedlings.

Seed

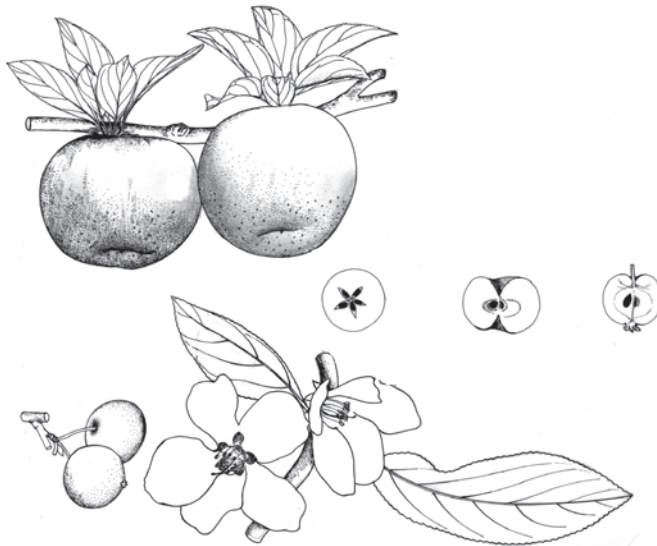
Normally not used since the rootstock also is propagated vegetatively from specifically bred lines with particular characteristics. Apple can also be grafted onto seedlings of another species, for example *Malus baccata*.

Management

Under tropical conditions, it is necessary to periodically remove the leaves to initiate dormancy and stimulate extensive flowering then after. If less than 2 years old, remove both fruits and leaves periodically to initiate massive fruiting. Two harvests annually can be achieved.

Remark

It needs plenty of sunshine and thrives best in rich well-drained soil. Apple is the fourth most important fruit species globally and by far the most important in temperate zones. One of its assets is that the fruit stores well and can withstand long-distance transportation, making it an important fruit in international trade. Apple canning produces pectin as a by-product.



Mangifera indica

Anacardiaceae

Northern India, Myanmar

Am: *Mango*

Eng: *Mango*

Mgr: *Manga*

Or: *Mango*

Tg: *Mangus*

Ecology

One of the most important fruit trees from Asia and introduced to many tropical and sub-tropical areas on all continents. It was brought very early to Africa, about 1,000 years ago. It does not tolerate flooding and prefers sandy-loamy soil which is well drained, but it can do quite well in dry areas. A dry period of several months encourages flowering and fruit setting. Roots penetrate deeply so rocky subsoil should be avoided. The extensive shallow roots collect water and nutrients in upper soil levels. Does well in a hot humid climate, usually below 1,500 m. Growth and reproduction is adversely affected above 1,800 m. In Ethiopia it is widely cultivated in warmer areas of Dry, Moist and Wet Kolla agroclimatic zones, 500—1,800 m.

Uses

Firewood, food (fruit), fodder (leaves for goats, fruits for pigs), bee forage, shade, ornamental, soil conservation, windbreak, gum.

Description

A densely leafy evergreen tree with a trunk soon branching to a rounded crown, usually 10–15 m. BARK: Dark brown, cracking with age. LEAVES: Dark green, crowded at the ends of branches, to 30 cm long,

smelling of turpentine when crushed. Young leaves soft, copper-coloured and hanging limply. FLOWERS: Numerous and small in pink-brown pyramidal heads. Pollination by flies and other insects. FRUIT: Fleshy, 8–15 cm, the skin green-red-yellow, the flattened “stone” is fibrous and woody around the large seed.



Propagation

Seedlings, direct sowing at site, grafting. Grafted material is strongly recommended for good-quality fruit.

Seed

Germination rate 60–90 %. About 50 seed per kg.

Treatment: Not necessary, but nicking the hard seed coat helps germination.

Storage: For best results, fresh seed should be used.

Management

Lopping, grafting. For quicker growth and early production of fruits, grafted material should be used. Some cultivars bear fruit in their third year, but most only from their fifth year onwards. Full yields can be expected in the 12th-15th year. A plantation of mango may produce 10-25 tons of fruit per hectare annually.

Remarks

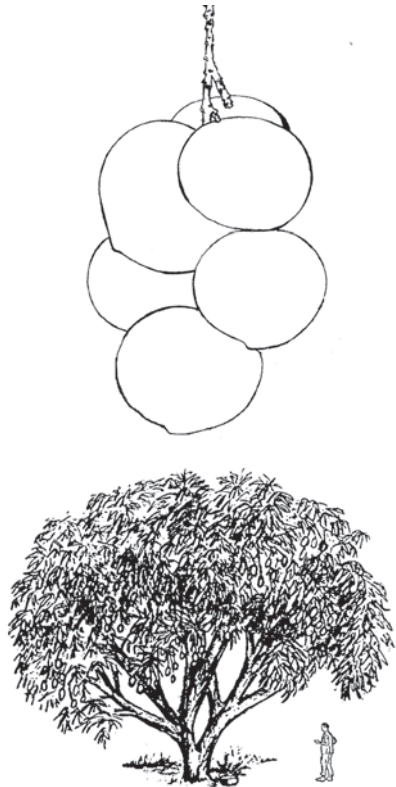
Good varieties have fruits with a good flavour and little fibre. Relatively few flowers are pollinated but even so up to 1,000 fruit develop on a mature tree. Each one has a large seed surrounded by golden juicy flesh, rich in vitamins A and C.



Photo: Patrick Maundu



Photo: Patrick Maundu



Manilkara butugi

Sapotaceae



Indigenous

Am: *Butigi*

Or: *Butugi, Gajo*

Ecology

A tree that grows in lower forest with *Olea* spp. and in humid highland forest with *Pouteria* spp. in the top storey. Found in all Weyna Dega and lower altitude Dry, Moist and Wet Dega agroclimatic zones in Wolega, Ilubabor, Kefa and Sidamo regions, 1,200-2,200 m.

Uses

Firewood, timber (local use, heavy construction), farm tools, tool handles, food (fruit).

Description

A tall forest tree that grows to 35 m, the bole straight and slender, buttressed at the base, the crown dense and spreading. BARK: Rough, grey-brown, grooved. A cut shows bright red fibres and white latex slowly drips out, becoming sticky. LEAVES: At the end of branchlets, ovate, narrow or wide 7–20 cm long, leathery, dull above and grey below where the midrib alone stands out, tip rounded or notched, edge wavy, narrowed to a stalk 2–3 cm long. FLOWERS: White and fragrant, quite small, in groups beside leaves, calyx and stalks with white hairs. Petals and sepals appear numerous, in whorls of 3 (typical *Manilkara*). FRUIT: Round, yellow-brown berry to 2 cm across, 4–5 brown seeds inside, edible flesh.

Propagation

Seedlings.

Seed

3,000–4,000 seed per kg.

Treatment: Not necessary but soaking in cold water for 12 hours may hasten germination.

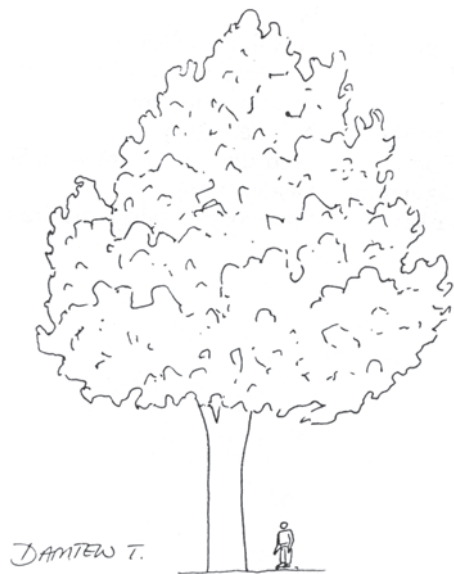
Storage: Stores well.

Management

Pruning. Slow growing when mature, fast when young.

Remarks

The wood is difficult to saw. It often has rot in the heartwood and tends to split with nailing, but its very strong and durable. It has been used for flooring, spear shafts, building and electric poles. As the tree's wood does not rot in water, it has also been used to build boats and bridges.



Markhamia lutea

Bignoniaceae



Indigenous

Am: *Botoro*

Or: *Buturu*

Ecology

A tree of the African high-rainfall tropical areas, at forest edges and in river valleys.

It will stand acid heavy clay soil but not water logging. It prefers red loam and has deep roots. In Ethiopia, it occurs in Moist and Wet Kolla and the lower Weyna Dega agroclimatic zone, up to 2,000 m.

Uses

Firewood, charcoal, timber, poles, posts, tool handles, medicine (leaves), bee forage, shade, ornamental, mulch, soil conservation.

Description

An upright evergreen tree with a narrow irregular crown, usually 10–15 m. **BARK:** Light brown, finely cracked. **LEAVES:** Compound, often in bunches, thin and wavy, each leaflet to 10 cm, wider at the tip. Often round leafy outgrowths at the base. **FLOWERS:** Bright yellow clusters, each trumpet shaped, orange-red stripes in the throat, buds furry, splitting on one side. **FRUIT:** Long thin capsules, to 75 cm, hang in spiralling clusters, split on the tree to release many flat winged seeds. Mature seed is yellow-white, prematurely collected seed turns black.

Propagation

Seedlings, wildings.

Seed

The tree is a prolific seeder throughout the year. High seed germination rate. About 75,000 seed per kg. Timing is important for collection. Pods must be mature, indicated by the pale yellow colour turning grey.

Once the pods split the seeds are dispersed by wind. The pods are collected and dried in the sun to facilitate the opening and release of seed.

Treatment: Not necessary.

Storage: Seed does not store well. Sow fresh seed.

Management

Fast growing, pollarding, coppicing.

Remarks

The wood is fairly termite resistant.



Photo: Patrick Maundu



Maytenus arbutifolia

Celastraceae



Indigenous

Am: *Atat*

Gr: *Atat*

Or: *Kombolcha, Hachacha*

Tg: *Atat*

Ecology

A shrub that occurs in forests and on forest edges, grasslands and river banks. It is widespread in Ethiopia and also occurs in Kenya and Eritrea. It performs well in Dry, Moist and Wet Kolla, Dega and Weyna Dega agroclimatic zones in nearly all regions, 1,200–3,000 m.

Uses

Firewood, farm tools, fodder (leaves), live fence, fencing (thorny branches).

Description

A shrub usually 1–3 m or a small tree to 12 m. Sharp spines 4–7 cm long. The grey to dark brown branches may be hairy and dotted with white breathing pores. LEAVES: Alternate, sometimes growing out of spines, quite variable, hard or leathery, oval to round, usually to 6 cm long, shortly stalked, the edge with small rounded teeth. FLOWERS: White, very small in heads on hairy stalks, 5 petals in each flower. FRUIT: A dry three-part capsule, only 8 mm across, green-purple, but red when mature, opening to set free 1–4 seeds, each shiny orange-brown with a small aril at the base, soft and folded, white-pink, ripening purple.

Propagation

Seedlings.

Seed

A prolific seeder.

Treatment: Not necessary.

Storage: Mature and dry seed can be stored for some time.

Management

Remarks

Planted as a fence on farms. Should be trimmed when planted as a fence.



seed with aril



fruit capsule enlarged

Maytenus senegalensis

Celastraceae



Indigenous

Am: *Gogoba, Gulo, Nech atat, Qoqoba, Yedega atat*

Eng: *Confetti tree*

Or: *Jima hare, Kombolcha*

Tg: *Argti, Argwidi, Qebqes, Tsililo*

Ecology

A tropical African shrub or tree from North Africa, Somalia to Senegal, south to South Africa, in Madagascar and east to Bangladesh with a wide altitude range from sea level to highlands. In Ethiopia it is common in open woodlands and bushlands, usually in Dry, Moist and Wet Kolla and Weyna Dega agroclimatic zones in nearly all regions, 400–2,400 m.

Uses

Firewood, medicine (roots, leaves, bark), fodder (leaves), bee forage, live fence, fence (spiny branches).

Description

Usually a shrub, but can be a tree to 8 m high, the trunk straight with drooping branches and many sucker shoots, either with or without spines. BARK: Trunk grey, rough and thick, vertical grooves; spines to 1–5 cm, often bunched together, on smooth red or grey-green branches which have no hairs or dots. LEAVES: Alternate or in clusters, smooth, often fleshy, variable in shape, oval, the tip often wider than the base, 3–12 cm long, the edge finely round toothed, the short stalk and midrib often pink. FLOWERS: White-cream-green in dense stalked clusters about 4 cm across, sweet scented, often covering the tree.

FRUIT: A 2- or 3-part capsule, green then red, round, to 6 mm, 1–2 shiny red-brown seeds, more than half covered by a soft white aril.

Propagation

Seedlings.

Seed

Prolific seeder; seeds usually dispersed by birds.

Treatment: Not necessary.

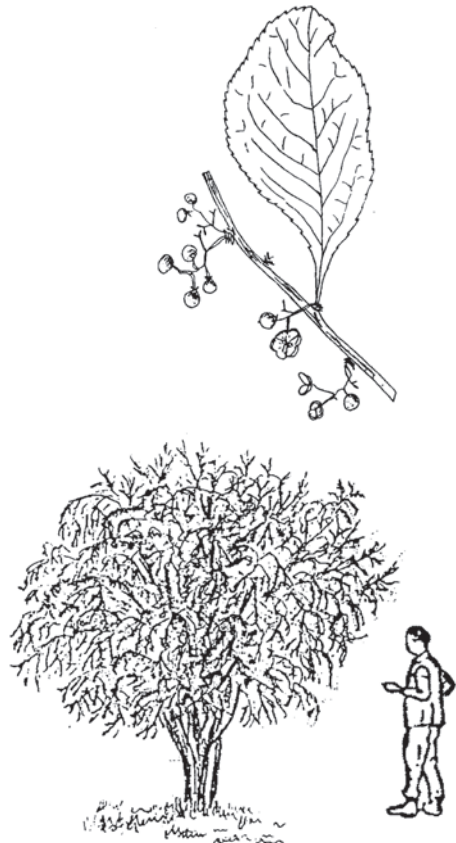
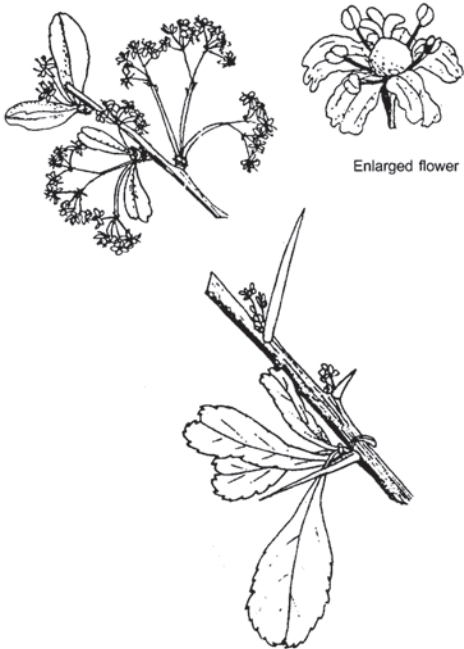
Storage: Mature and dry seed can be stored for some time.

Management

Lopping, trimming tops and sides to produce a good live fence.

Remarks

This is a common shrub that has many uses as a local medicine. The wood is yellow-white, hard and durable. When in flower it becomes a beautiful bush with the very many small cream-green sweetly scented flowers that attract pollinators, especially bees.



Maytenus undata

Celastraceae

Indigenous

Am: *Geram atat*

Or: *Chucho, Ilka, Kombolcha*

Sm: *Degemut, Sarad, Tseligniya*

Tg: *Tselimo*

Ecology

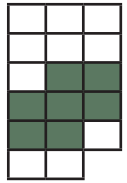
A shrub that occurs in forests, forest margins, woodlands and stony areas of Tigray, Gonder, Gojam, Wolega, Shoa, Harerge, Arsi, Bale, Kefa, Gamo Gofa, and Sidamo regions. Performs well in Dry and Moist Kolla and Weyna Dega as well as Moist and Wet Dega agroclimatic zones, 1,400–3,100 m.

Uses

Firewood, timber (local construction), farm tools, medicine (roots), live fence, ornamental.

Description

Usually a spineless shrub 2–3 m, but may be a well-branched tree to 10 m. **BARK:** Grey-brown, smooth, finely grooved. The branches have no hairs or spines. **LEAVES:** Thinly leathery and shiny, oval to circular, 3–13 cm long, the edge toothed, narrowing to a short stalk. Alternate, rarely grouped together. **FLOWERS:** Yellow-green in small heads of 2–10 flowers, only 1 cm long. **FRUIT:** Small red capsules, in 3 parts. Shiny orange-brown seeds half covered by a thin aril, orange and soft.



Propagation

Seedlings, cuttings.

Seed

Treatment: Not necessary.

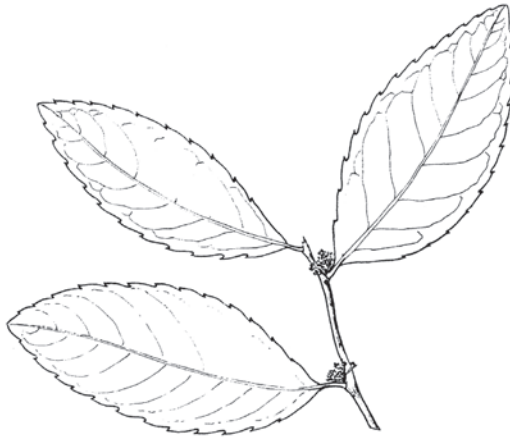
Storage:

Management

Reduce multiple stems. Removing lower branches can help in developing good stems.

Remarks

The wood is red and heavy. The species grows easily from seed or cuttings and makes a good evergreen hedge.



seed with aril



DAMTEW T.

Melia azedarach

Meliaceae

Western Asia, Himalayas

Eng: *Persian lilac*

Ecology

A popular exotic long planted in the tropics and sub-tropics. It is fairly drought-tolerant but may suffer attack from termites in dry areas. In Ethiopia it grows in most soils, both acidic and saline, in Bereha and Dry, Moist and Wet Kolla and Weyna Dega agroclimatic zones, 0–2,400 m.

Uses

Firewood, timber, tool handles, poles, posts, medicine (bark), bee forage, shade, ornamental, windbreak.

Description

A small tree 5–6 m, but can reach 10 m, usually deciduous, with a thin trunk. BARK: Grey, smooth, later rough and brown, branchlets dotted with breathing pores. LEAVES: Compound, on branched stalks, to 40 cm long, up to 6 pairs of pinnae and 3–9 leaflets, each one bright shiny green, narrow to 8 cm, the edge irregularly toothed, the tip long and pointed. FLOWERS: Fragrant in large rounded clusters to 25 cm, each flower with 5 pale purple-white petals and a dark purple centre. FRUIT: Fleshy yellow-orange, oval to 1.5 cm, persisting on the bare tree. Each fruit contains a stone with 4–6 dark brown seeds inside.

Propagation

Seedlings, wildings, direct sowing at site.

Seed

The species is a prolific seeder. With a high germination rate; 500–3,000 stones per kg (average around 2,000), each stone with 4–6 seeds (multigerm). Pulp should be removed from the stones and the seed cleaned, but with minimal human exposure due to seed toxicity. The stones are sown intact since it is difficult to separate the seed. Sow in seed bed, after germination the several young seedlings from each stone can be separated and pricked out in pots. Alternatively, sow in pots and remove excess young seedlings, leaving only the strongest one.

Treatment: Not necessary but soaking in cold water for up to three days may hasten germination, peak germination in 20 – 23 days.

Storage: Seed can be kept for some time but fresh seed gives best result.

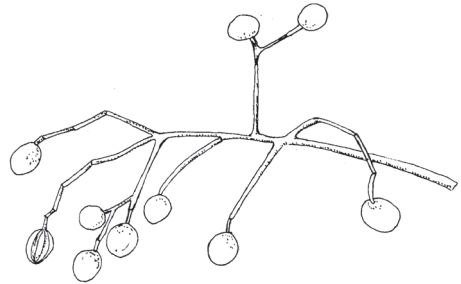
Management

Fairly fast growing. Pollarding, lopping, coppicing, pruning.

Remarks

The berries are extremely poisonous to human beings, livestock and poultry. Leaves are not browsed by livestock. In good conditions it has been reported to become a weedy nuisance in some countries.





Milicia excelsa

(*Chlorophora excelsa*)

Moraceae

Indigenous

Kf: *Gonji*

Ecology

A giant deciduous tree of lowland forest with *Pouteria altissima* and sometimes left in fields or villages. It is logged commercially throughout its range. Widespread throughout tropical Africa, Ivory Coast to Angola, Sudan and Ethiopia to Mozambique. It can grow well with mean annual rainfall as low as 700 mm provided it has access to extra water from a perennial stream or underground, but does not tolerate waterlogging and the soils must be well drained and relatively fertile. It is a forest pioneer and coppices and regenerates well. In Ethiopia, it grows in Moist and Wet Kolla agroclimatic zones of Gambella, Ilubabor and Kefa, 500–1,000 m.

Uses

Firewood, charcoal, timber (furniture), shade, ornamental, mulch.

Description

Old trees may have a straight trunk clear to 21 m and 2 m in diameter, reaching up to 50 m, the small umbrella crown growing from a few thick branches. **BARK:** Thick, pale grey then brown, with milky latex, as in all parts. **LEAVES:** Long, oval to 18 cm, rather thin to a well-pointed tip, 10–18 pairs of clear side veins, the base somewhat rounded, often unequal sided, stalk to 4 cm, leaf edge finely toothed and wavy. **FLOWERS:** Male and female trees, both with small flowers in green spikes,

male flowers in drooping catkins to 15 cm, female shorter and thicker. **FRUIT:** Like a long green mulberry 6–7 cm, the loose fleshy pulp attracting birds and bats. Small hard seeds lie in the pulp. Fruits ferment rapidly on the ground.



Propagation

Seedlings, wildings, direct sowing at site.

Seed

The tree is not a prolific seeder. Germination is slow and poor. Collect fruit (caterpillar-like syncarps) by cutting small twigs from the crown. Normally, the seeds are mature before the syncarp is fully ripe. If the syncarps are not totally ripe, they should be spread out in the shade for ripening. When ripe, they are soaked in water overnight and the seed are squeezed off the fruit. Seed can be separated from the pulp by floating; the seeds will sink. Dry seeds in the shade for a few days before sowing. 250,000–1,000,000 seed per kg; germination rate up to 45%.

Treatment: Not necessary.

Storage: Seed loses viability quickly.

Management

Fast growing compared with other hardwoods; pruning, coppicing. Regeneration rates are low in most areas. Produces root suckers.

Remarks

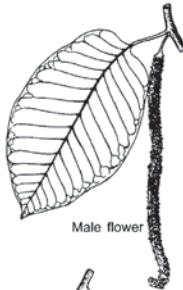
The wood is termite resistant. The valuable timber has been used for houses, flooring, boats, etc., but especially for quality furniture. The heartwood is brown to yellow and easy to work. The wood resists termite attack almost as well as teak.



Photo: Patrick Maundu



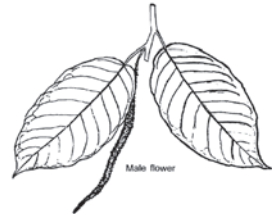
Female flowers



Male flower



Female flower



Male flower



Millettia ferruginea

Fabaceae



Indigenous, endemic in Ethiopia

Ag: *Waggaru*
Am: *Birbira*
Gr: *Birbiraso*
Kf: *Bibero, Yago*
Or: *Asra, Dedatu, Ingidicho, Sotellu*
Sd: *Engidicho Engbe diksho*
Sm: *Aladu*
Tg: *Birbira*
Wt: *Zagie, Zagiya*

Ecology

A tree confined to Ethiopia (endemic), found in upland forests, rain forests and forest remnants in Shoa, Tigray, Kefa, Sidamo, Ilubabor, Gojam, Wolega, Bale, Harerge and Gonder regions. It performs well in Moist and Wet Kolla as well as Dry, Moist and Wet Weyna Dega agroclimatic zones, 1,000–2,500 m.

Uses

Firewood, timber (local construction), tool handles, household utensils, shade, fish poison (ground-up seeds).

Description

A large shady tree to 35 m. LEAVES: Compound, up to 13 pairs of leaflets plus one at the tip, each leaflet to 9 cm long, pointed, hairy below. FLOWERS: Large and violet, on stalks to 30 cm long, calyx with golden-brown to black hairs, the flower 2–3 cm long and the upright standard petal silky hairy outside. FRUIT: Large flat pods to 27 cm long and 3 cm across, curved, with brown hairs when young, less hairy when mature. Pods break open when dry to set free 5–10 seeds.

Propagation

Seedlings, direct sowing at site.

Seed

A prolific seeder, about 500/kg unclean

Treatment: Not necessary, germination starts in 8 days and culminates 11 days after sowing.

Storage: Can be stored for 2 months

Management

Coppicing, pollarding.

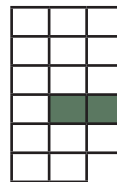
Remarks

There are two subspecies, one confined to the north of the country and the other in Sidamo. Trees from central and western Ethiopia show a mixture of the characters of these two species. This is an important shade tree for peasant farmers growing coffee.



Mimusops kummel

Sapotaceae



Indigenous

Am: *Isbe, Shiye*

Gmz: *Gugurandija*

Kf: *Gayu*

Or: *Bururi, Qoladi, Mito*

Sd: *Aununa*

Sm: *Anjel*

Tg: *Kummel, Lelle*

Wt: *Danga*

Ecology

A widespread tree extending to East Africa and Eritrea, the Sudan and into West Africa in riverine vegetation and also in dry evergreen forest, in wooded grassland and on rocky hills in dry areas. In Ethiopia, it occurs in drier montane forest and humid highland forest. Performs well in Moist and Wet Weyna Dega agroclimatic zones in all regions, mainly along rivers and forest fringes, 1,000-2,500 m.

Uses

Firewood, charcoal, timber (heavy and local construction), tool handles, local utensils, food (fruit).

Description

An evergreen tree which can reach 30 m and have a diameter of more than 1 m, the crown leafy and oval. BARK: Dark gray, rough and deeply grooved, branchlets covered with red-brown hairs. LEAVES: Oval to 10 cm, the tip blunt, the midrib below hairy and also the leaf stalk to 2 cm. FLOWERS: monocious, Fragrant, cream-white, 1-4 in leaf axils, on stalks to 4 cm. Flower parts in fours, rather flat star-shaped stalks and outer calyx with brown hairs,

central ovary with silky pale hairs. FRUIT: A hard drupe to 2 cm, pointed and orange-yellow, contains one red-brown seed.

Propagation

Seedlings (sow seed in pots), wildings.

Seed

About 2,500 seeds per kg.

Treatment: Soak in cold water to soften the pulp and extract and clean the seed and sow. Germination in 30 – 35 days if seed coat is broken.

Storage: Can be stored for some time but susceptible to insect attack. Use of fresh seed results in best germination.

Management

Pruning.

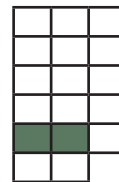
Remarks

The tree fruits in December – March, fruits are sold in local market. The wood is hard and heavy.



Moringa oleifera

Moringaceae



India

Am: *Shiferaw*

Eng: *Ben-oil tree, Drumstick tree, Cabbage tree, Horse-radish tree*

Ecology

A species native to northern India but now cultivated throughout the tropics, especially in arid areas. It is a drought-resistant and valuable tree, introduced to Ethiopia long ago and now naturalized in many parts of Gamo Gofa, Harerge and in the Rift Valley and tried elsewhere. Requires well-drained soils with a high water table, but is drought resistant. Occurs at low altitudes in Dry and Moist Kolla agroclimatic zones, 500–1,600 m.

Uses

Food (young leaves, young fruit), spice (young roots substitute for horse-radish or mustard), medicine, fodder (leaves, fruit), bee forage, shade, soil conservation, windbreak, fibres, live fence, boundary marker, oil (ben oil from seeds for industrial use), water purification (powder from seeds).

Description

A deciduous tree to 10 m, usually smaller, pale feathery foliage. **BARK:** Grey, thick and corky, peeling in patches. **LEAVES:** Pale green, thrice compound, the whole leaf 30–60 cm, leaflets usually oval, tip rounded 1–2 cm long. **FLOWERS:** Cream, fading yellow, in long sprays, each flower with 5 petals, one erect and 4 bent back, sweet-scented, attracting insects. **FRUIT:** Long capsules, to 45 cm, bluntly triangular in section, splitting when dry to release 9 dark

brown 3-winged seeds from the pith.

Propagation

Large stem cuttings (truncheons, more than 1 m long), root cuttings, direct sowing at site, seedlings.

Seed

Pick mature (brown) capsules from the tree, dry in the sun, put in a bag and thresh with a stick. Separate seed and chaff by hand or by winnowing. Dry further in the sun for 3–5 days. Germination rate 60–70%. 4,000–5,000 seed per kg. Germination time ranges from a few days to more than 2 months, but usually quite fast.

Treatment: Not necessary.

Storage: Seed can be stored for long periods.

Management

Fast growing; pollarding, coppicing, lopping.

Remarks

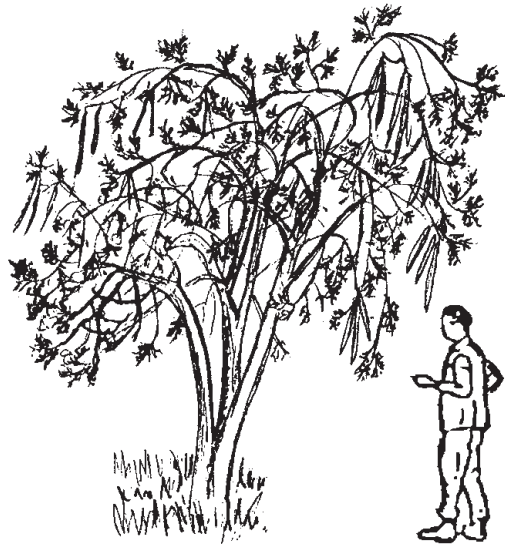
A tree which is easily propagated and recommended for homesteads for its food value. The “Ben oil” from the seeds keeps its quality and has been used to lubricate precision machinery like watches. It is also used as salad oil and in soap and cosmetics. The ground-up seeds can be used to clear muddy water, but all the purified water should be consumed in less than 24 hours or else bacteria could re-multiply. The wood is soft. Root bark contains poisonous alkaloids, so care should be taken in its use as a spice or medicine. It is said to cause dizziness.



Photos: Patrick Maundu



Photo: Patrick Maundu



Morus alba

Moraceae



China

Am: *Yeferenji injori*

Eng: *Mulberry*

Ecology

A tree native to warm temperate Asia, probably of mountainous China where it can reach more than 20 m. Now widely cultivated in Africa where it is much smaller, sometimes naturalized. It tolerates drought and heat once established. In Ethiopia, it is grown in Dry, Moist and Wet Kolla and Weyna Dega agroclimatic zones in Shoa, Ilubabor and Sidamo, 1,300–2,300 m.

Uses

Firewood, food (fruit, leaves), fodder (leaves), bee forage, shade, ornamental, soil conservation, windbreak, live fence, silkworms' feed (leaves).

Description

Usually small but can reach 25 m; loosely rounded in shape. LEAVES: Very variable in shape, even on one branch; oval to 3-lobed or heart shaped, 5–15 cm long, 3 veins from the base, edge roughly toothed, tip pointed, on stalks to 5 cm, upper leaf smooth, but some hairs on veins below at least. FLOWERS: Sexes separate, small and greenish, in drooping spikes. FRUIT: Compound, about 2 cm (- 5cm) long, pink to dark maroon, sweet and juicy.

Propagation

Seedlings, cuttings.

Seed

Poor germination. 325,000–700,000 seed per kg.

Treatment: Soak in cold water for 48 hours.

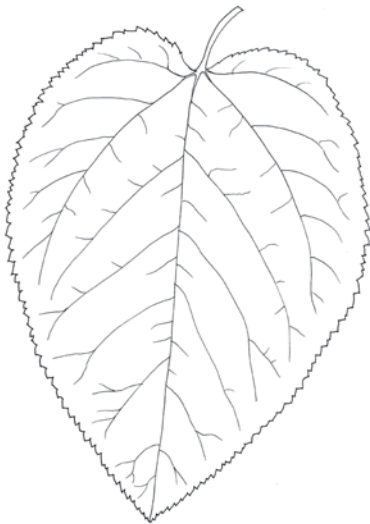
Storage: Can be stored for a long time.

Management

Fast growing, especially when grown from cuttings. Lopping to encourage branching and keeping the height as required.

Remarks

Experiments on the rearing of silkworms in Nazareth have shown good results and could be expanded to the Jimma area where the tree is abundant. It is a useful species for stabilizing soil-conservation structures. Trees grown from cuttings will produce fruits after 3 years as opposed to trees grown from seed which take 5–8 years. *M. nigra*, black mulberry, although widely cultivated for its black fruit in the Middle East is rare in Ethiopia. Both *Morus* species are found in Africa, often naturalized.



Morus mesozygia

(*M. lactea*, *Celtis lactea*)

Moraceae



Indigenous

Am: *Injori*

Ecology

An indigenous shrub or tree with distribution in Africa from Senegal and east to Ethiopia and south to South Africa of both rain forest and drier evergreen forest. In Ethiopia it is mainly found in humid forests, with *Pouteria* and *Celtis* trees, Moist and Wet Kolla agroclimatic zones in Kefa, Ilubabor and Wolega regions, 500–1,500 m.

Uses

Firewood, timber, fodder, shade.

Description

A large shrub or deciduous tree to 30 m, with a straight trunk to a spreading crown, sometimes buttressed at the base. **BARK:** Grey-brown, smooth, later thick, dark and cracked, much milky latex, if cut. **LEAVES:** Alternate, oval, dark green 2.5–10.0 cm, longer in saplings, 3 main veins for most of the length, to a long pointed tip, the base rounded to a short stalk, edge toothed, a few hairs above and in vein axils below. **FLOWERS:** Sexes on different trees. Males flower heads to 3 cm long. Female trees have stalked heads of 3–8 tiny flowers. **FRUIT:** Rounded to 1.5 cm across, several fruit joined together, greenish and fleshy at first, dry, brown later.

Propagation

Seedlings, cuttings.

Seed

Contained in a compound fruit which has to be crushed to release the seeds. These fruits usually fall on the forest floor from where they can be collected.

Treatment: Not necessary but soaking in cold water for 12 hours may hasten germination.

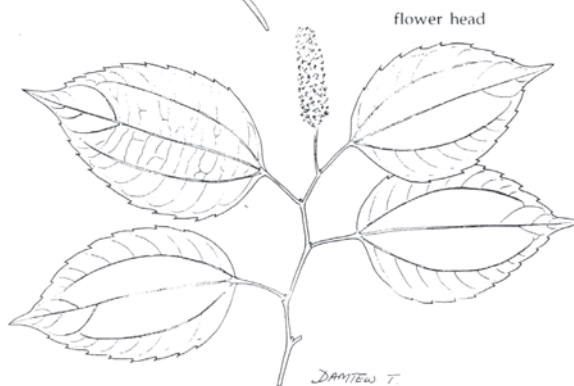
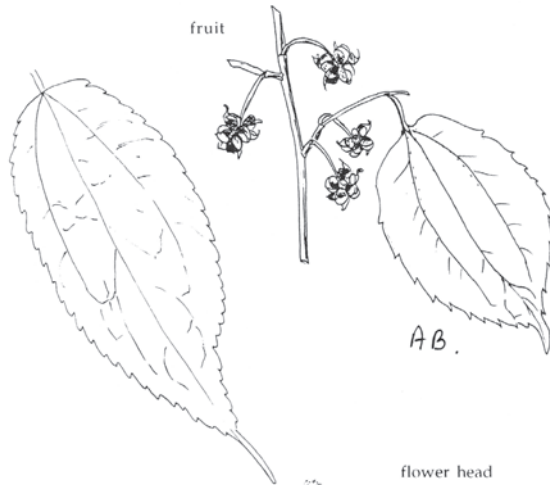
Storage: Storage is not recommended, sow fresh seed.

Management

Lopping, pollarding.

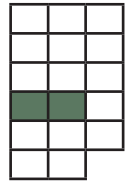
Remarks

Individual trees planted along roads form magnificent avenues. Provides good timber and woodfuel.



Myrica salicifolia

Myricaceae



Indigenous

Am: *Shinet, Kalava*

Gu: *Abeyi*

Or: *Abay, Kataba, Radji, Tona*

Tg: *Nihibi*

Ecology

A species of mountain forests from Saudi Arabia to the Democratic Republic of Congo, throughout East Africa and south to the mountains around Lake Malawi. In Ethiopia, it grows in riparian forests and in *Mimusops* and *Ficus* forests in Tigray, Gonder, Welo, Shoa, Arsi, Harerge and Sidamo. Performs well in Dry and Moist Weyna Dega and Dega agroclimatic zones, 1,600–3,300 m.

Uses

Firewood, timber (local carpentry), medicine (leaves).

Description

A deciduous shrub usually 3–10 m, but can be a tree to 20 m with a diameter up to 1 m, the trunk often branched from the base. BARK: Grey and smooth when young, later rough and dark. Young twigs glandular and hairy. LEAVES: Oval and stalked, 4–14 cm, dotted with golden glands on both surfaces, more below, giving a spicy aromatic smell when crushed, tip blunt, base somewhat rounded, 8–20 pairs of fine side veins, the edge wavy with a few well-spaced teeth. FLOWERS: Male and female separate. Male flowers yellow on yellow stalks to 3.5 cm, fragrant and dotted with oil glands. Female anthers shorter. FRUIT: On a spike

to 4 cm, each fruit round and very small, purple with white waxy dots all over.

Propagation

Seedlings, wildings, cuttings.

Seed

Contained in a warty, round fruit.

Collected with the coat.

Treatment: Soak the seeds in cold water for 24 hours.

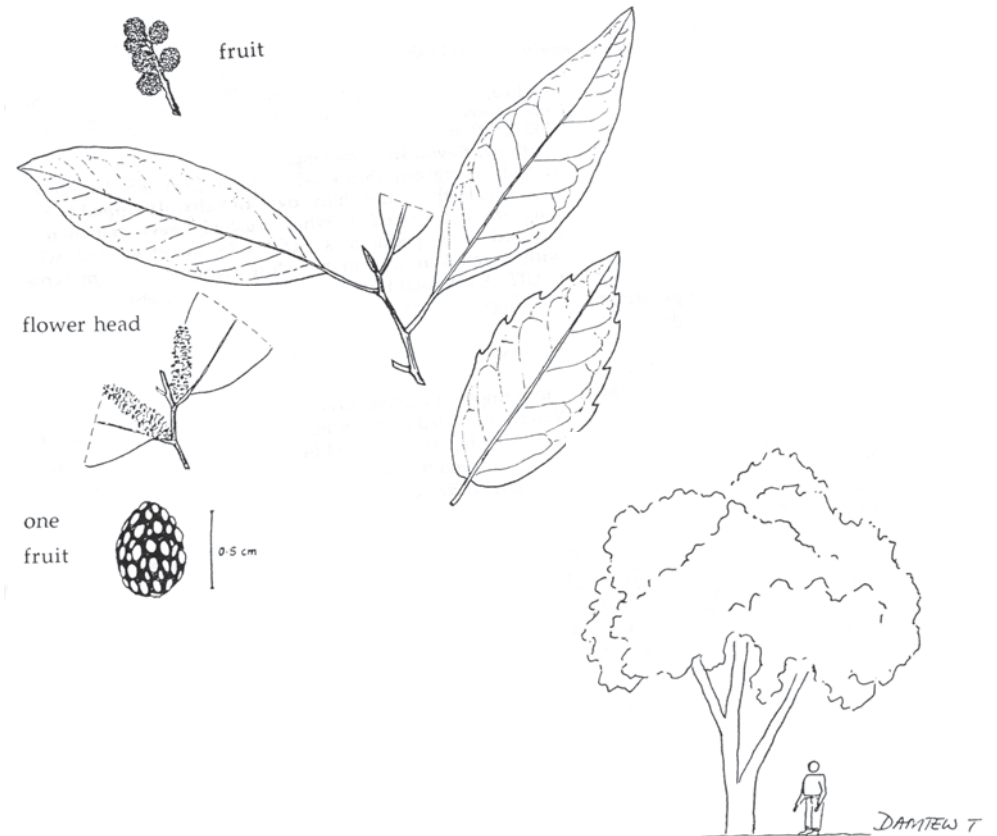
Storage: Can be stored in a dry cool place.

Management

Plant closely to encourage straight growth; pruning, coppicing.

Remarks

Dried powdered leaves are mixed with water and used as medicine for skin diseases. The wood is soft and light.



Myrtus communis

Myrtaceae

Indigenous

Am: *Ades*

Eng: *Common myrtle, Myrtle bush*

Gg: *Ades*

Or: *Addisa, Qodo*

Ecology

A shrub that grows in Moist and Wet Kolla and Weyna Dega agroclimatic zones in Gonder, Harerge, Welo and Shoa, 700–2,500 m.

Uses

Flavouring, perfume, incense (smoke used for pleasant scent in rooms, especially during the traditional coffee ceremony).

Description

A leafy evergreen shrub 3–5 m high. LEAVES: Simple and opposite, leathery and shiny, oval and sharply tipped to 5 cm long, the base rounded. When crushed sweet-scented oil is released from special cells. FLOWERS: Sweet scented, white with 5 petals around many white stamens, to 3 cm across. FRUIT: A rounded blue-black berry, 1 cm or less.



Propagation

Seedlings, cuttings.

Seed

Treatment: Not necessary.

Storage:

Management

Coppicing to encourage branching and more leaf production.

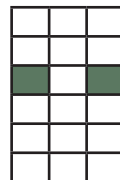
Remarks

Widely cultivated since ancient times. In Ethiopia it is used for perfuming butter to be used in hair dressing, as an additive to 'injera', a local bread made from tef.



Nuxia congesta

Buddleiaceae



Indigenous

Am: *Atquar, Chocho*

Kf: *Ataro*

Or: *Anfare, Bitana, Hanfare*

Ecology

A tree of the upper limits of Afro-montane forest and also a shrubby tree of the lower-storey vegetation, normally at forest edges and in drier evergreen highland forest. It grows from Sierra Leone to the Sudan, Ethiopia, Eritrea and East Africa and as far south as South Africa. In Ethiopia, it is a shrubby tree of the lower-storey vegetation, normally at forest edges and in drier evergreen highland forests, in Dry and Moist Weyna Dega and Dega agroclimatic zones in almost all regions, 1,700–3,200 m.

Uses

Firewood, charcoal, medicine (leaves), bee forage, live fence.

Description

A shrub or tree, usually 2–8 m, but can reach 20 m, quite variable. The bole is often short, twisted and the low branches droop down. BARK: Rough, brown-black, shedding long fibrous strips with age. Young branchlets clearly 3- or 6-sided with thick nodes where the leaves grow out. LEAVES: Rather leathery, dull green, scaly, usually growing out in threes, crowded at the ends of branches, variable in size, shape and texture, hairy or not, oval to rounded, 1–8 cm, tip rounded or notched, edge occasionally toothed, a stalk to 2 cm, midrib clear. FLOWERS: Fragrant white-

mauve in dense crowded heads, flat or round-topped at the ends of branches, the 4 petals hardly longer than the bell-shaped calyx, which is sticky. Flowers numerous, attracting bees. The dry flowers persist on the tree. FRUIT: The calyx continues to surround small hairy capsules which split to set free many seeds.

Propagation

Seedlings, wildings.

Seed

Collect mature capsules and thresh out seed.

Treatment: Not necessary.

Storage: Can be stored.

Management

Coppicing.

Remarks

A good bee-forage plant. The plant is believed to repel evil spirits. The leafy twigs are used as stoppers for small containers where strong-smelling foodstuff is kept.



Ocotea kenyensis

Lauraceae

Indigenous

Kf: *Majo, Najo*

Or: *Derersa, Gigicha*

Sd: *Soecho*

Ecology

A very common intermediate and upper-storey tree, especially in Sidamo region. Also found in humid and semi-humid highland evergreen forests in Moist and Wet Weyna Dega agroclimatic zones of Wolega, Sidamo, Ilubabor, Kefa, Gamo Gofa and Bale, 1,500–2,600 m.

Uses

Firewood, timber (furniture, panelling, flooring), carvings, medicine (roots, bark).

Description

An evergreen much-branched tree, about 10 m, mature trees reaching 25–30 m, the bole straight and 80 cm wide at the base. **BARK:** Grey when young, then dark red-brown and rough, flaking into large pieces. **LEAVES:** Alternate, large oval or quite narrow, about 7–14 cm long, without hairs, young leaves shiny red, later leathery, shiny green, edge strongly wavy, tip blunt, narrowed at the base to a short, flexible stalk, 8–10 pairs uneven side veins only clear when dried. **FLOWERS:** Male and female separate, a few small flowers on a hairy stalk, about 5 cm, beside leaves, green-white-yellow. **FRUIT:** Long oval, green, to 2 cm, containing 1 seed, one-third of fruit inside a cup-like bract, roughly hairy.

Propagation

Seedlings.

Seed

The tree produces plenty of seed, but the fruit may be attacked by insects.

Treatment: Not necessary.

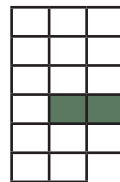
Storage: Sow immediately after extraction. Storage in moist sawdust can prolong the lifespan of the seed a little.

Management

Fast growing, coppicing.

Remarks

Bark, leaves and wood are fragrant and aromatic but unlike camphor. Although not termite resistant, the timber is of high quality — one of the best for furniture and carving. The tree can best be propagated by use of root suckers. Birds eat the fruit.

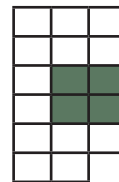




Olea capensis subsp. *macrocarpa*

(*O. hochstetteri*)

Oleaceae



Indigenous

Am: *Damot weira, Gegema*

Eng: *East African olive*

Gr: *Agergui*

Or: *Gagama, Gaja, Onoma, Sagada*

Sd: *Setemo, Sigeshote*

Tg: *Afsholer*

Ecology

A tree found in similar places to *O. europaea* subsp. *cuspidata*, 1,600–2,400 m, but preferring higher rainfall in forests of Ethiopia, West and Central Africa. It does best in the Moist and Wet Weyna Dega and Dega agroclimatic zones in Shoa, Harerge, Arsi, Bale, Sidamo, Gamo Gofa and Kefa regions, 1,700–2,700 m.

Uses

Firewood, charcoal, timber (furniture, flooring), tool handles, medicine (stems, bark).

Description

A tall tree, 10–20 m, with a straight trunk, steeply ascending branches and a small dense crown. BARK: Smooth, grey-white. LEAVES: Stiff, in opposite pairs, to 10 cm long and 3 cm wide, apex sharply tipped, margin wavy, midrib pale and clear below. Underside not white (contrary to *O. europaea* subsp. *cuspidata*), with scales, stalk to 3 cm long. FLOWERS: Small and white, mostly in heads about 7 cm long at the tip of branchlets. FRUIT: Oval, 1–2 cm long, usually green but may ripen purple, with a large hard seed inside.

Propagation

Seedlings, wildings.

Seed

Slow germination. About 3,000 seed per kg. Pulp should be separated from the seed by rubbing and cleaning in running water. Then dry seed for storage or sow immediately.

Treatment: Not necessary for fresh seed, soak dry seed in cold water for 48 hours.

Storage: Seed can be stored but use of fresh seed is recommended.

Management

Slow growing. Lopping, pollarding. Coppices when young.

Remarks

Does best in good forest soil, but hardy and drought resistant once established even in poor soils. Fruits do not produce olive oil. The hard pale brown heartwood has an attractive grain and polishes well.



Photo: Patrick Maundu



Olea europaea subsp. *cuspidata*

(*Olea africana*)

Oleaceae

Indigenous

Ag: *Wiri*

Am: *Weira*

Br: *Ejas*

Eng: *African wild olive, Brown olive*

Gr: *Oira*

Or: *Ejerssa*

Sm: *Wighira*

Tg: *Wogret, Auleh*

Ecology

Widely distributed in dry forest and forest margins, often with *Juniperus procera*, in east Africa and Ethiopia. It reaches southern Africa, also India and China, ranging from tall trees to stunted shrubs. Does best in good forest soil, but hardy and drought resistant once established, even in poor soils. It does best in Moist and Wet Weyna Dega and lower Dega agroclimatic zones in all regions, 1,400-3,100 m.

Uses

Firewood, charcoal, timber (furniture, floors, panelling, walking sticks), poles, posts, milk flavouring (smoking wood), medicine (stem, bark, leaves), bee forage, toothbrushes (twigs).

Description

A handsome evergreen tree, 10–15 m, with a rounded crown and grey-green foliage, trunk often crooked and with characteristic pockets. **BARK:** Rough dark brown, white branchlets, dotted with breathing pores. **LEAVES:** Stiff, narrowly oval, sharply pointed in opposite pairs, underside pale

to white, midrib prominent, to 8 cm, stalk very short. **FLOWERS:** Small, white, in branched heads to 5 cm. **FRUIT:** Oval, fleshy to 1 cm, purple and bitter-sweet when ripe but edible. Seed about 1 cm long.

Propagation

Wildings, seedlings (difficult to raise).

Seed

The species is a poor seeder. Low germination rate. About 8,000 seed per kg. The collection should be done immediately after the fruit turns to purplish-black because of the competition by birds. After collection, spread out in a thin layer for 2–3 days to ripen. Pulp should be separated from seed by rubbing and cleaning in running water, then dry seed for storage or sow immediately. It is also possible to collect de-pulped seeds from the ground.

Treatment: Not necessary for fresh seed. Soak old seed in water for 48 hours. Germination is slow (45 – 90 days). Poor germination.

Storage: Seed can be stored for about two months.

Management

Slow growing.

Remarks

The species used to be known by its synonym *Olea africana*. Fruits do not produce olive oil. The wood produces a fierce heat on burning. Olive poles are very durable in the ground.

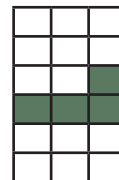




Photo: Patrick Maundu



Olea welwitschii

Oleaceae

Indigenous

Am: *Sigida weira*

Eng: *Elgon olive, Elgon teak*

Kf: *Yaho*

Or: *Ba'a*

Ecology

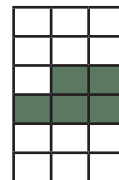
A tree with attractive timber found in Angola, Zambia, Kenya, Tanzania, Uganda and Ethiopia from lowland rain forest to upland evergreen forest. In Ethiopia, it occurs in humid lower highlands in Dry, Moist and Wet Weyna Dega and Moist and Wet Dega agroclimatic zones in Ilubabor, Kefa, Sidamo, Arsi, and Bale regions, 1,500–2,400 m.

Uses

Firewood (branches), timber (furniture, veneer), medicine (bark).

Description

The tree can reach 25 m with a straight bole and small crown. **BARK:** Pale grey to white, grooved vertically. **LEAVES:** Opposite and oval, to 5 x 15 cm, on a stalk 2–3 cm, the tip drawn out and pointed. **FLOWERS:** Very many, small and white, in sprays to 8 cm long. **FRUIT:** Narrow, oval and small.



Propagation

Seedlings, wildings.

Seed

About 3,000 seed per kg. Pulp should be separated from the seed by rubbing and cleaning in running water. Then dry seed for storage or sow immediately.

Treatment: Soak dried seed in cold water.

Storage: Seed can be stored but use of fresh seed is recommended.

Management

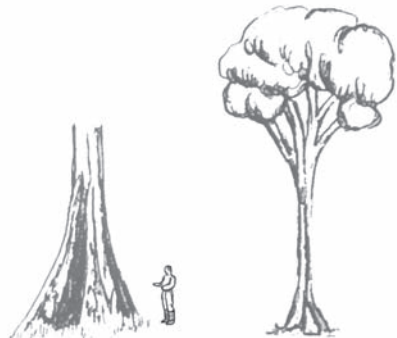
Slow growing. Lopping, pollarding, coppices when young.

Remarks

A very valuable termite-resistant timber tree. The timber is pale golden brown with paler streaks and is used for high-class furniture.

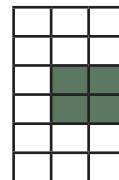


A. Birnie



Olinia rochetiana

Oliniaceae



Indigenous

Am: *Beye, Tife*

Or: *Delacho, Guna, Nolle, Qadis, Sole adi*

Ecology

A tree distributed in tropical Africa and in the mountains of eastern Transvaal in South Africa. In Ethiopia, it is commonly found in patches of dry evergreen forest and on riverine fringes, in montane *Juniperus*, *Podocarpus*, *Hagenia* and *Nuxia* forest in Moist and Wet Weyna Dega and Dega agroclimatic zones of Welo, Gonder, Gojam, Wolega, Shoa, Arsi, Bale, Kefa, and Sidamo, 1,200-3,500 m.

Uses

Firewood, timber (local houses), farm tools, walking sticks, ornamental, fencing material (cut branches).

Description

Usually a small shrub or tree 4–9 m, occasionally to 20 m. BARK: Grey–light brown, smooth or finely grooved, but old trunks with thin yellow flakes. The branchlets clearly 4-angled. LEAVES: Opposite, bright red when young, (edge toothed), long oval, to 7 cm long, wider at the tip, blunt or notched, edge rolled under, base narrowed into a short grooved stalk, often pink, underside with fine net of veins. FLOWERS: White fading to pink or cream, very small, in dense rounded heads to 5 cm across, shorter than the leaves. FRUIT: Thinly fleshy, pink then red-brown when ripe, less than 1 cm, in heavy bunches.

Propagation

Seedlings, wildings.

Seed

Collect fruit when ripe and soft. Can then either be left to dry together with the pulp or the seed can be squeezed out from the fresh drupe and gradually dried. 8,000–10,000 seed per kg.

Treatment: Not necessary but soaking in cold water for 24 hours may hasten germination.

Storage: Can be stored.

Management

Coppicing.

Remarks



DAMTEW T.

Olyra latifolia

Poaceae

Indigenous

Agn: *Opero*

Am: *Kesem*

Mjr: *Boli*

Nur: *Duper*

Ecology

Grows in Moist Bereha and Moist to Wet Kolla agroclimatic zones of Gambella, Illubabor, Kefa, Wolega and North Shoa, 400—1,400 m, annual rainfall 900—1,500 mm.

Uses

Utensils (drinking straw, tools for spinning).

Description

Tall, reed-like perennial woody grass growing from knobby rhizome to a height of 3 m. **STEM:** hollow inside except at the nodal sections; often no more than 1.2 cm in diameter, cane-like culms rising to 3m or more; erect or scandent, often purple blotched below, the lower nodes with papery bladeless sheaths, the upper nodes branching. **LEAVES:** leaf-blades ovate-oblong, mostly 11–18 cm in length and 2–5 cm in width, abruptly acuminate, leaf-blade base asymmetrically rounded to a short false petiole. **FLOWER:** inflorescence, a rather compact panicle 6–20 cm long, the lower branches predominantly male, with a number of male spikelets below a large terminal female spikelets. Male spikelets borne on filiform, often convolute pedicels; lemma membranous, 3-nerved, 4.5 mm long, drawn out into an awn of equal

length. Female spikelets on stout clavate pedicels; glumes membranous, tardily deciduous; lower glume lanceolate, 8–9 mm long, 7–9-nerved, caudate-aristate with an awn up to 15 mm long; upper glume similar but only shortly caudate; lemma 4–6 mm long, palea equaling the lemma, the whole floret becoming plump, indurated and shiny white or pale brown at maturity

Propagation

Vegetative from offset culms and rhizomes. It can also be propagated from seedlings and wildings.

Seed

Treatment: There is no need for special treatment.

Storage: Can be stored in airtight containers in cool dry place.

Remark

Has been common in northern Ethiopia such as Gemza plain in northern Shoa, but it is now extinct in those areas. It has been in use for centuries in traditional spinning of cotton threads used in weaving clothes.





Oncoba spinosa

Flacourtiaceae

Indigenous

Agn: *Adiquala*

Am: *Ekuku, Tsewa*

Eng: *Wild rose, Snuff-box tree*

Gmz: *Asisa*

Or: *Akukku, Aboha, Daggoo, Kokolfe, Korkoro*

Sm: *Bulisanza*

Tg: *Egot*

Ecology

A spiny tree or shrub well distributed throughout tropical Africa over a wide range of altitude north to the Arabian peninsula and south to South Africa. In Ethiopia, it grows in Moist Bereha and Moist to Wet Kolla agroclimatic zones in Tigray, Shoa, Arsi, Wolega, Ilubabor, Kefa, Sidamo, Bale and Harerge regions, 400-1,800 m.

Uses

Timber (inlays, cabinet work), food (fruit), medicine (root decoctions), oil (from seed; used for paints and varnish).

Description

A semi-deciduous spiny shrub or small tree 4–10 m, much branched to a rounded bushy crown. BARK: Smooth, grey or brown, young branches speckled with lenticel dots, becoming dark brown, scaly with age. Branches with straight, axillary spines to 8 cm, slender and sharp, while the main trunk may have shorter compound thorns. LEAVES: Alternate, leathery, strong shiny green, often re-curved, broadly oval, about 8 cm long, margin with small rounded or pointed teeth, sometimes few, base tapering to a short stalk, tip well

pointed. FLOWERS: Solitary, showy and fragrant, white or pale pink, up to 9 cm across, on stalks 1–2 cm, with 8–10 white overlapping petals about 3 cm long, twice the size of 4 sepal lobes, a mass of golden stamens in the centre, the green-cream central stigma knob about 4 mm across (seen clearly on young fruit). FRUIT: Round, shiny red-brown when ripe, 5–6 cm in diameter, the hard 'shell' marked with 8 faint lines, the old calyx persisting. Inside, shiny brown oil-rich seeds lie in a dry thick yellow-brown pulp, edible but sour.

Propagation

Seedlings and wildings.

Seed

Break up and mash the fruit to extract the seed. 55,000—65,000 per kg.

Treatment: Not necessary but soaking in cold water may hasten germination. The seedlings require about 4 months to attain suitable size for planting.

Storage: Seed store well.

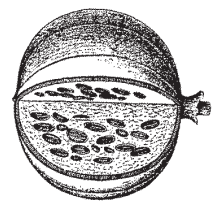
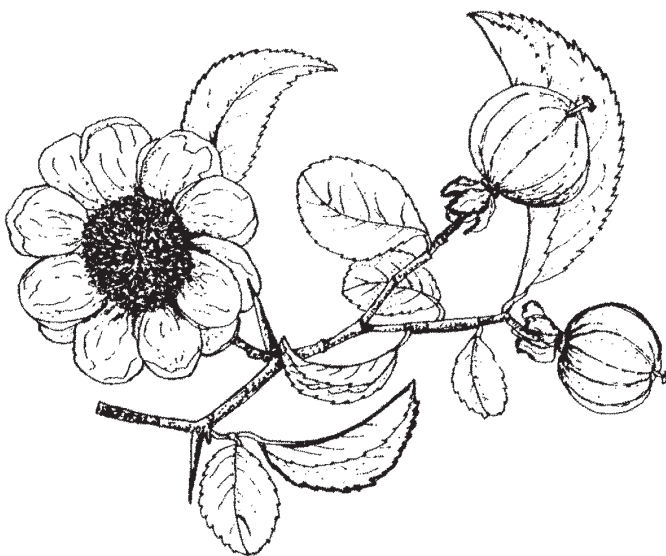
Management

Coppicing,

Remarks

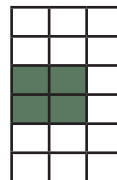
Root decoctions are used locally for treating intestinal and urinary complaints. The seeds are too difficult to extract in an amount sufficient for commercial oil extraction. Wood is hard, light brown and taking good polish.





Otostegia integrifolia

Lamiaceae



Indigenous

Am: *Tunjit*

Or: *Tingiti*

Ecology

Found in dry evergreen woodlands of Tigray, Gonder, Welo, Gojam, North Shoa, Kefa and Harerge in Dry and Moist Weyna Dega and Dega agroclimatic zones, 1,300—2,800 m.

Uses

Firewood, medicine, other home uses such as scenting cloth.

Description

A Shrub to 4 m, the stem angled and older stems ash grey and flaking, often bearing paired spines at the nodes. LEAVES: Simple, oblanceolate to lanceolate, 2-9 cm long, aromatic, the edge double toothed or round toothed. FLOWERS: 2-lipped with yellow or yellow-orange lower petal and white or cream upper, the orange anthers held inside the upper petal.

Propagation

Seedlings.

Seed

Treatment: No need.

Storage: Can be stored in an air-tight container.

Management

Coppicing.

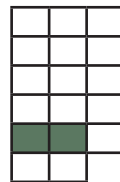
Remarks

Brewing jars are smoked and scented by burning the leaves of this species. The tree forms a good hedge and ornamental fence. Certain communities believe it expels evil spirits.



Oxytenanthera abyssinica

Poaceae



Indigenous

Ag: *Shemel*
Am: *Shmel*
Brt: *Gagu*
Eng: *Lowland bamboo*
Gmz: *Enta*
Or: *Shimala*
Sh: *Elta*

Ecology

In continental Africa, the lowland bamboo grows in Ethiopia, and westward to Senegal and southward to Zimbabwe. It is the hardiest of the three African bamboos, and it grows in savanna woodland, usually in river valleys and often found on very poor soils. In most places, it is in demand for building. In Ethiopia, it is mainly confined to the western side of the central highlands in Dry and Moist Kolla agroclimatic zones of Benishagul Gumuz, and Humera areas, 1,200—1,800 m.

Uses

Poles (building), furniture, water pipes, arrow shafts, walking sticks, fodder (leaves), baskets, fencing material.

Description

A tall grass to 13 m with woody culms, in dense clumps, arching over. Unusual in having solid stems, up to 10 cm in diameter at the base. LEAVES: Blue-green, base rounded, the tip long and spiny, usually 15 x 2.5 cm, but up to 30 x 5 cm. There are irritating dark brown hairs on the leaf sheath. FLOWERS AND FRUIT: Spikelets narrowed, pointed, 2.5 cm in dense rounded clusters 6 cm across. Flowering

takes place about every 7 years. Then the clumps die down but shoot up one year later from the rhizomes.

Propagation

Suckers and rhizomes; rarely, seed.

Seed

Rarely used.

Treatment: Not applicable

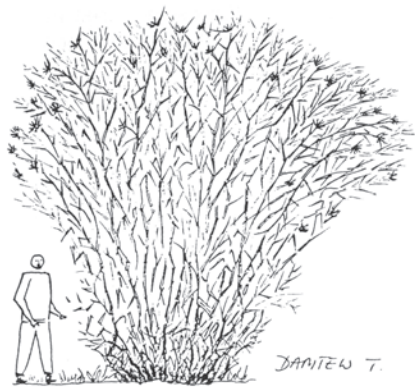
Storage: Not applicable.

Management

Needs to be controlled by cutting back.

Remarks

Like most bamboos, each plant flowers only once and then dies. Fences are susceptible to damage by termites and borers. The plant survives fire in its natural habitat. Small stems can be used for pipes and arrow shafts, larger ones for fences, building, furniture, beds and baskets.



Parkinsonia aculeata

Fabaceae



Tropical America

Am: *Filfile, Ye eyerusalem eshob*

Eng: *Jerusalem thorn*

Ecology

The natural range of this plant is the semi-arid areas of the southern United States and into Argentina. It has been grown in Africa and South Asia. Tolerates strongly alkaline or saline soils and poor sandy eroded soil, but not flooding. In Ethiopia it is widely cultivated at medium altitudes, especially in Sidamo region. Also does well in arid and semi-arid areas in Dry and Moist Bereha, Dry, Moist and Wet Kolla and Weyna Dega agroclimatic zones, 300–1,700 m.

Uses

Firewood, charcoal, fodder (pods, young branches), bee forage, shade, ornamental, mulch, soil conservation, windbreak, live fence.

Description

A spiny shrub or small tree, usually 5–8 m, light, feathery foliage and a low crown, sometimes deciduous in the dry season. LEAVES: Groups of thin winged leaf stalks to 30 cm with well-spaced tiny leaflets. The long thin branchlets have sharp thorns beside the leaves, about 1 cm long. FLOWERS: Very fragrant, bright yellow with orange stamens, on spikes to 15 cm. FRUIT: Bunches of woody pale brown pods, 10 cm long, narrow, constricted between seeds, pointed tips.

Propagation

Seedlings, direct sowing at site.

Seed

The species is a prolific seeder. Germination rate 30–70%. 11,000–15,000 seed per kg.

Treatment: Immerse in hot water, allow to cool and soak overnight.

Storage: Seed stores well for long periods in cool, dry, closed containers.

Management

Fast growing. Pollarding. Seedlings are susceptible to attack by termites and so young seedlings should be protected. Ash can be sprinkled around seedlings to deter termites, alternatively use other physical or biological methods.

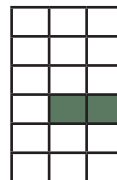
Remarks

Extensively used in Ethiopia. It is a good species for rehabilitating eroded land.



Pavetta oliveriana

Rubiaceae



Indigenous

Am: *Yetota buna*

Ecology

A common shrub or a small tree in riverine vegetation, open deciduous woodland, rocky outcrops with bush thickets and *Olea-Podocarpus* forest of the Moist and Wet Weyna Dega agroclimatic zones in nearly all regions, 1,400-2,500 m.

Uses

Firewood, mulch.

Description

A shrub or small tree to 4 m with hairy branches. LEAVES: With black dots and in this species the dots occur along the midrib. The leafy stipules at each node are joined and have a sharp tip with a hair. Long oval leaves are grey-green and hairy, especially below, 4–20 cm long, in opposite pairs. FLOWERS: Green-white, in dense terminal heads, longer than the leaves, about 7 cm across, growing out of leafy bracts at the base. Each flower about 2 cm, tubular, with 4 petals and stamens, the green style to 3 cm, hanging out, calyx hairy, the edge uneven, wavy and toothed. FRUIT: Round berries, dark green, ripening black, the calyx remaining at the tip, 2 seeds inside, 5–10 cm diameter.

Propagation

Seedlings. Germination takes one to two weeks.

Seed

Treatment: No need.

Storage: Stores well.

Management

Early stem reduction can improve stem quality.

Remarks



Persea americana

Lauraceae

Tropical America

Am: *Avocado*

Eng: *Avocado*

Sd: *Avocato*

Ecology

Well-known fruit tree indigenous to tropical America and occurring from montane forest to coastal lowlands. Widely planted in Ethiopia in Moist Bereha and Moist and Wet Kolla and Weyna Dega agroclimatic zones in Shoa, Harerge, Arsi, Sidamo and Kefa, 1,500—2,400 m.

Uses

Food (fruit), shade, cosmetics, oil (fruit).

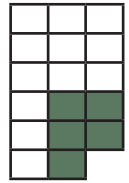
Description

A densely leafy evergreen tree to 10 m or more with a straight trunk. **BARK:** Grey-brown. **LEAVES:** Large, oval and alternate, to 20 cm long, shiny dark green above, veins very clear, young leaves pink then bright green. **FLOWERS:** In large terminal heads, pale yellow, only 1 in 5,000 producing fruit. **FRUIT:** Large, round to pear shaped, to 25 cm long, hanging heavily on the tree, the central seed surrounded by a thick layer of yellow-green flesh. The outer skin varies from green to purple.

Propagation

Grafted seedlings (improved varieties), direct sowing at site (sow seed directly at the desired site, 2—3 per station and later select the strongest seedling to be grafted while the others are removed). It may be advisable to try propagation on farm rather than relying on nurseries, since nurseries may be sources of disease unless they are very well managed. Some rootstocks have

been selected which are less susceptible to root rot. Such trees, if available, must be propagated vegetatively in order to get the rootstock with the desired characteristics.



Seed

Eat the pulp of the fruit to obtain the seed.

Treatment: Not necessary. Use fresh seed for best results. Select seed from disease-free fruit picked from the tree, not from the ground. Some viral diseases can be transmitted with the seed.

Storage: Seed does not store well. Use fresh seed.

Management

Grafting is recommended to get the best fruit varieties. Requires no management once established; can be side-pruned to obtain a desired shape. The dense surface root system competes with those of crops, although crops such as beans can be intercropped with young trees. Trees may require extra stimulation to encourage flowering and fruit. Cut roots in a trench or narrowly ring bark to encourage flowering in good conditions.

Remarks

This is a fruit tree which has been cultivated for many millennia. Only one in 5,000 flowers produce fruit. The fruit is very nutritious, rich in oil, mineral salts, protein and vitamins (especially A, B and E). The fruit is common in salads and desserts, but is also often eaten as a snack. It is also used in hair conditioning. There are many cultivated varieties adapted to a wide range of conditions (highland, lowland). Bark, leaves and seeds are toxic to browsing livestock. Bees are important for pollination and fruit set. Oil extracted from the fruit burns brightly with less soot than that of kerosene.



Phoenix dactylifera

Arecaceae

Persian Gulf area

Am: *Yetemir zaf, Zembaba*

Eng: *Date palm*

Ecology

A well-known and important food tree found in desert areas from Morocco to India, 0–1,500 m. It requires a well-drained fertile soil, high temperatures and low humidity during fruiting. The palm must have a high water table. It will stand alkaline soil but not waterlogging. In Ethiopia, it grows well in Moist Bereha beside rivers, and in Moist and Wet Kolla and lower Weyna Dega agroclimatic zones in Afar plains and Gamo Gofa, Harerge and Bale regions, 0—1,400 m.

Uses

Firewood, posts, utensils, food (fruit), fodder, medicine, shade, ornamental, windbreak, thatch.

Description

A palm with a slender trunk reaching 20–30 m, the trunk covered with the remains of leaf bases. Many suckers or offshoots are produced around the trunk. LEAVES: 30–50 crowded leaves, each to 3 m grey-green, the leaflets sharply pointed; lowest leaves are thorny and removed by cultivators. FLOWERS: Male and female trees, a ratio of 1 male to 40–50 female trees is required for fruiting, but the pollen may not always be ready at the best time for pollination. FRUIT: Large hanging bunches of dates, needing support. Ripe dates 5 x 2 cm, yellow to golden-brown, with one grooved seed, the “stone”.



Propagation

Suckers (offshoots) are preferable as male or female plants can be chosen and as the vegetative propagation ensures young plants with the same characteristics as the mother plant. If the shoots have already formed roots at the mother plant, they can be directly planted, otherwise they are kept in a nursery for 6 weeks for rooting.

Seed

Normally not used.

Treatment: Not applicable

Storage: Not applicable

Management

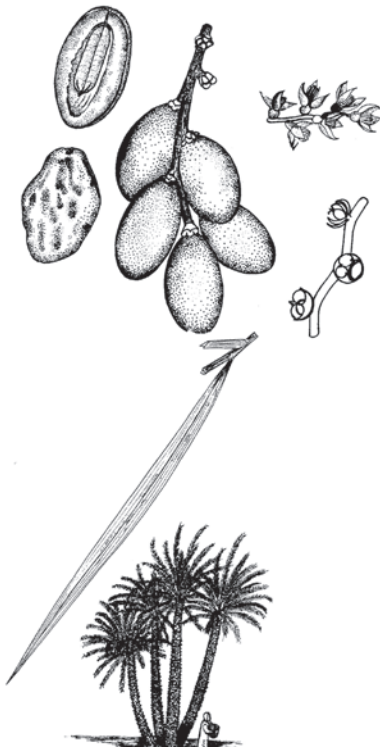
Hand pollination is recommended for good date production; remove suckers on palm trees in production.

Remarks

A potential food and cash crop for selected sites in dry areas. Needs irrigation until established. Economic yields can be obtained after 6–7 years (around 45–50 kg per tree annually, up to 80–100 kg is possible with good variety and intensive management).



Photo: Patrick Maundu



Phoenix reclinata

Arecaceae

Indigenous

Am: *Selen, Zembaba*

Br: *Meti*

Eng: *Wild date palm*

Ecology

A palm usually growing in dense clumps beside swamps and rivers. Found throughout tropical Africa, it grows in the humid lowland woodlands, highland forests and on open rocky hillsides in Dry and Moist Kolla and Weyna Dega agroclimatic zones in nearly all regions, 700–2,600 m.

Uses

Timber (local doors, roofing, windows), food (fruit), ornamental, soil conservation, fibres (leaves, leaf bases), roofing (leaves), basketry, mats (leaves), dye.

Description

The mature palm trunk may reach 10 m, slender and often bent over (“reclinata”), about 25 cm in diameter, covered in very rough leaf scars. LEAVES: To 2.7 m long, growing out from a fibrous leaf sheath, the crown of about 25 leaves arching over, leaflets narrow, folded, bright shiny green, to 30 cm, stiff and pointed. FLOWERS: Male and female on different trees. FRUIT: Yellow-brown, about 2 cm, edible.

Propagation

Seedlings, suckers.

Seed

900–5,000 seed per kg. Soak in cold water for three days changing water every 12 hours for the pulp to separate from the seed. Clean seed and dry in shade and store or sow without storage. Germination starts in 10 days but could last as long as 90 days.

Treatment: Not necessary.

Storage: Seed can be stored but germination is best from fresh seed.

Management

Removal of all leaves at once from a palm tree should be avoided since it may die.

Remarks

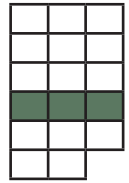
Strong fibres from the leaves are used all over Africa for making baskets, mats, etc.





Phytolacca dodecandra

Phytolaccaceae



Indigenous

Ag: *Sebeti*

Am: *Indod*

Or: *Handode, Indodi*

Ecology

A shrub commonly found in degraded riverine woodland and secondary forest areas of Dry, Moist and Wet Weyna Dega agroclimatic zones in all regions, 1,500-3,000 m.

Uses

Medicine (roots, fruit, leaves, seed), soil conservation, soap (fruit).

Description

A climbing or scrambling shrub which can be a strong liane in riverine forest; long hanging branches to 9 m. LEAVES: Shiny oval to 25 cm, tip blunt, stalk and midrib pink, rather thick and juicy. FLOWERS: Strongly scented, cream-green, on spikes to 40 cm, often opposite leaves, each flower with many stamens on a fleshy disc, 5 sepals but no petals. FRUIT: Rounded soft fruit to 7 mm across, orange-red when ripe, a seed in each section.

Propagation

Seedlings, cuttings.

Seed

Seed is easily collected from dry fruit.

Treatment: Not necessary.

Storage: Can be stored.

Management

Trimming. Layering and leading it to grow on live fence.

Remarks

This is a very poisonous plant, both to people and grazing animals. The leaves and roots are particularly poisonous. It should, therefore, be used with great care as an overdose of medicine can cause death. Sheep and cattle have died from eating the leaves during drought. Juice from the leaves or roots can cause abortion, and, suitably applied, can kill sperm. The commonest medicinal use is for killing intestinal worms. The juice can also be used to kill mosquito larvae in ponds. It can also kill snails and the organism that causes bilharzia (schistosomiasis) in man in its early stages. The fruits are widely used as a soap substitute for washing clothes.

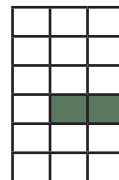


fruit and seed



Piliostigma thonningii

Fabaceae



Indigenous

Ag: *Frq*

Am: *Yekolla wanza*

Br: *Abairtubata*

Eng: *Camel's foot tree, Monkey bread*

Gr: *Ambarda, Lilu*

Or: *Kora*

Tg: *Amam-gemel*

Wt: *Kalkalla, Kalkallo*

Ecology

A small dense tree found all over sub-humid Africa from west to south in wooded grassland in a variety of soils. In Ethiopia it grows at medium to low altitudes, especially in the Gibe River valley and various areas of Illubabor region. It performs well in Moist and Wet Weyna Dega agroclimatic zones and occurs in most regions, 500-2,000 m.

Uses

Firewood, charcoal, poles, timber (houses), food (pods), drink (leaves, pods), medicine (leaves, bark, roots, pods), fodder (pods, shoots), bee forage, ornamental, mulch, soil conservation, nitrogen fixation, tannin, dye (pods, seeds, bark, roots), rope (bark, root fibres).

Description

A rounded deciduous tree, 3–5 m, branches twisted (occasionally climbing). **BARK:** Thick, dark and rough, fibrous within. Dark red if cut. **LEAVES:** Large and bilobed, a small bristle in the deep notch, often folded along midrib, leathery, pale green, to 12 cm long, lower surface brown hairy, in between many raised veins.

FLOWERS: White, fragrant, in heads, 10–20 cm. **FRUIT:** Flat brown and woody pods, 15–20 cm long, persisting on the tree but finally decaying on the ground to free pea-sized seeds. Pulp surrounding the seed can be eaten.

Propagation

Seedlings (sow seed in pots).

Seed

The tree produces many seeds with a good germination rate. About 7,300 seed per kg. Seeds difficult to extract. Dry the pods in the sun, cut them into pieces and pound in a mortar to separate the seed from the pulp.

Treatment: Soak in cold water for 24 hours.

Storage: Can be stored for several years if kept cool, dry and insect free.

Management

Fairly fast growing on good sites, coppicing, pollarding. Produces root suckers from exposed roots.

Remarks

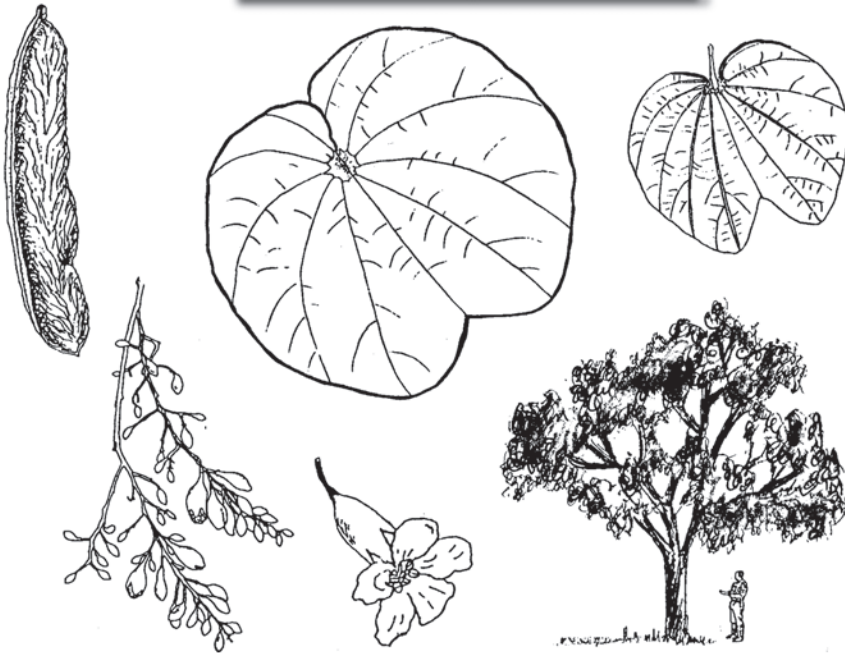
Frequently growing with *Annona senegalensis*. A good tree for intercropping. The pulp surrounding the seeds is edible and under famine conditions leaves, crushed green pods and seeds have been eaten. Pods and seeds give a blue dye and roasted seeds a black dye.



Photo: Patrick Maundu



Photo: Patrick Maundu



Pinus patula

Pinaceae

Mexico

Am: *Pachula*

Eng: *Mexican weeping pine*

Ecology

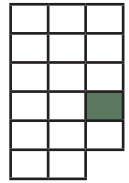
Probably the most widely planted pine in tropical Africa. It is tolerant of most soils and will grow in grassland. It grows best with good water supplies but can also survive adverse conditions. In Ethiopia it does well in Moist and Wet Weyna Dega agroclimatic zones in Shoa, Arsi, Sidamo and Kefa regions, 1,900—3,000 m.

Uses

Firewood, timber, posts, long-fiber pulp.

Description

An evergreen tree to 35 m with light green, weeping foliage and a long straight trunk; branches more or less horizontal, turning up at the tips. **BARK:** Grey to dark brown, fairly smooth, papery red-brown on young branches. **LEAVES:** Long slender “needles”, soft but hard tipped, 15–23 cm long, in bundles of 3. **CONES:** Female: small hard red spheres mature in 2 years to shiny brown cones, base oblique, to 10 cm long in clusters of 2–5 without stalks. Male: on the same tree, short terminal catkins, yellow-brown, producing clouds of dust-like pollen. Seeds develop below the cone scales and are released over a long period.



Propagation

Seedlings.

Seed

110,000–170,000 seed per kg. A large proportion of the seeds are usually empty. Germination 75—85% in 35—60 days.

Treatment: Pines live in symbiosis with mycorrhiza fungi. Inoculation may be required. A simple method is to mix the nursery soil with a part of soil where the pine species has grown before.

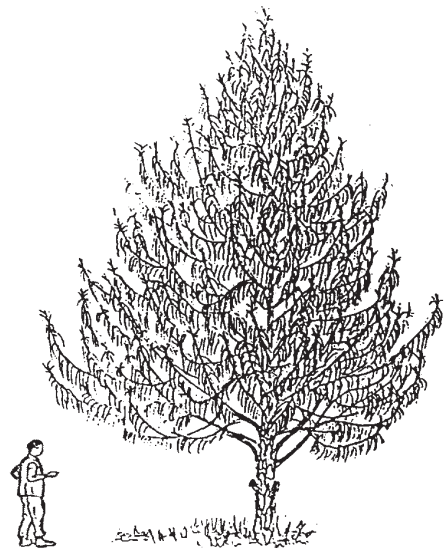
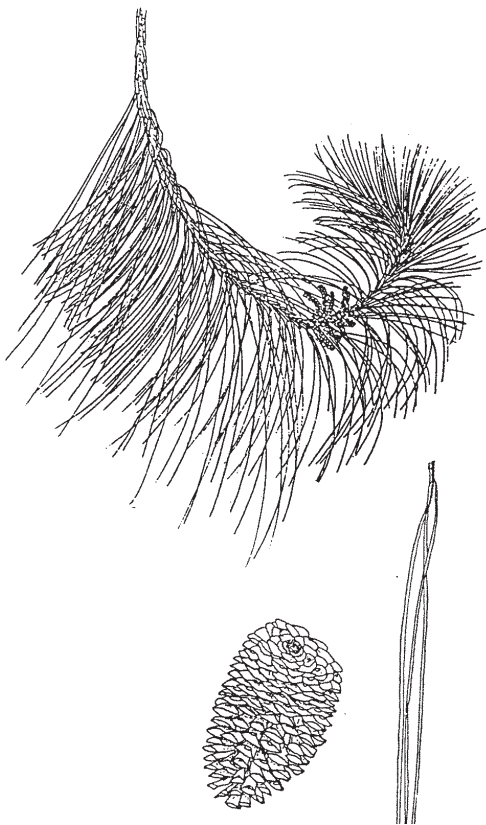
Storage: Seed can be stored.

Management

Fast growing. Pruning and thinning for trees grown in timber plantations.

Remarks

A good tree for woodlots, but it should not be grown near crops due to its shallow root system. The wood is easily worked, fairly light and soft and pale brown in colour.



Pinus radiata

Pinaceae



California, USA

Am: *Radiata*

Eng: *Monterey pine, Radiata pine*

Ecology

Now widely introduced in Ethiopia in Moist and Wet Weyna Dega and Dega agroclimatic zones of Shoa, Kefa, and Arsi regions, 2,200-2,500 m. It does well on neutral to acid well-drained soils.

Uses

Firewood, timber (heavy and light construction), poles, posts, ornamental, windbreak, long-fiber pulp.

Description

An evergreen timber tree that grows to 50 m with a straight trunk and upcurved branches, developing an open, irregular crown as it matures. **BARK:** Thick, dark brown, deeply grooved with age. **LEAVES:** Bright blue-green needles, soft, sharply tipped, 10–15 cm long, in bundles of 3, forming dense tufts. **CONES:** Mature female cones very large, shiny grey up to 15 cm long, with an oblique base, in whorls of 3–6, remaining on the tree for many years.

Propagation

Seedlings.

Seed

33,000–50,000 seed per kg. Germination is rapid and uniform.

Treatment: Pines live in symbiosis with mycorrhiza fungi. Inoculation may be required. A simple method is to mix the nursery soil with a part of soil where the pine species has grown before.

Storage: Can be stored for several years if kept dry and cool and in an air-tight container.

Management

Can grow extremely fast. Thinning, pruning.

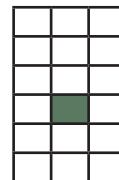
Remarks

Tolerates sand, wind, frost, and drought. Trees are attacked by woolly aphid and the fungus *Diplodea pinea*. Seedlings are also susceptible to damping-off fungus. The soft white wood is light and straight grained but it has a low resistance to decay and termite attack. This pine is planted worldwide for paper pulp.



Pithecellobium dulce

Fabaceae



S. America

Am: *Temar*

Eng: *Madras thorn, Manilla tamarind*

Ecology

Originally from South America, this tree has so far been cultivated in Harerge and Illubabor regions. It tolerates arid and semi-arid conditions and performs well in Dry and Moist Kolla agroclimatic zones, 500–1,600 m.

Uses

Firewood, timber (general construction), poles, food and drink (fruit pulp), fodder (leaves, pods, seeds), bee forage, soil conservation, shade, ornamental, windbreak, live fence, tannin and oil (seeds), dune fixation.

Description

A thin shapeless shrub or tree reaching 4–15 m. **BARK:** Pale and smooth with horizontal marks, bole short, young branches thorny, drooping. **LEAVES:** Thin stalks bear 2 pairs of leaflets, each to 5 cm, asymmetric oval, the tip rounded or notched, short spines at the base of each leaf pair. **FLOWERS:** Small, cream-yellow on a short stalk, bunches of green-white stamens 1 cm across. **FRUIT:** Heavy pods, about 12 cm, spirally twisted, narrowed between seeds, red when mature, splitting to release glossy black seeds almost covered with the fleshy red and white edible aril. A sweet pulp surrounds the seeds.

Propagation

Seedlings, direct sowing at site, cuttings.

Seed

7,000–26,000 seed per kg.

Treatment: Not necessary.

Storage:

Management

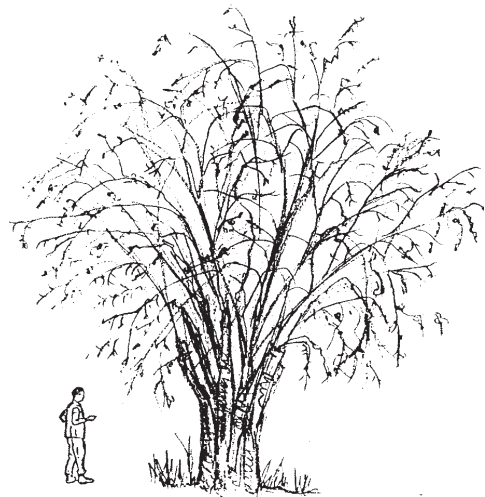
Fairly fast growing. Coppicing, trimming (for live fence).

Remarks

The species can become a weed in moist climates if not well managed. It is popular as a spiny hedge to keep out livestock. The timber of a large tree is strong and flexible, heavy and red brown. It is difficult to cut but can be used in making local ploughs. The flowers are a good source of nectar and pollen for honey bees.

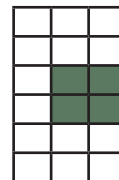


Photo: Patrick Maundu



Pittosporum viridiflorum

Pittosporaceae



Indigenous

Ag: *Zhinkuti, Tahtai*

Am: *Elabo, Ahot, Kefeta, Weyel*

Gr: *Ambilbey*

Or: *Amshika, Bocho, Talao*

Tg: *Chequente*

Ecology

Grows in upland rain forest, riverine forest and evergreen bushland and gorges in Moist and Wet Weyna Dega and Dega agroclimatic zones in almost all regions, 1,400–3,000 m. It is, for example, found in Wof Washa State Forest Project

Uses

Firewood, timber (local construction), farm tools.

Description

An evergreen shrub or tree to 15 m, the mature bole may be 40 cm at the base. BARK: Smooth, dark grey, rough with age. LEAVES: Mostly at the end of branches (very variable), oval or wider to the sharp tip, 4–15 cm long, base narrowed to a grooved stalk, the midrib very clear below, 6–10 side veins, bright green in the sunlight. FLOWERS: On a branched head to 8 cm long and across, each flower stalked, about 1 cm with 5 green-white petals, the calyx cup-like below. FRUIT: Small brown-black capsules to 8 mm dry and break into 2 parts, the halves roll back to show a yellow ridged inside surface and 4–8 bright red seeds. Both are shiny with a resin but this fades as they dry out.

Propagation

Seedlings.

Seed

Treatment: Not necessary.

Storage: Can store well in dry and airtight container

Management

Pollarding, lopping, pruning.

Remarks

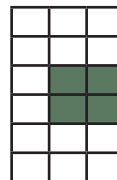
Seedlings are susceptible to damping-off. Need to have well drained and raised seedbed.



Podocarpus falcatus

(*P. gracilior*)

Podocarpaceae



Indigenous

Am: *Zigba*

Eng: *Podo, East African yellowwood*

Gr: *Zigba*

Or: *Birbirsā*

Ecology

Podocarpus trees are mainly found in the southern hemisphere, particularly in the temperate zones and in tropical highlands. They are conifers, the closest related species being yews and junipers, not pines and they are also known as yellow-woods. *P. falcatus* is a large tree of the semi-humid lower highland forests of the central and eastern highlands of Ethiopia in Moist and Wet Weyna Dega and Dega agroclimatic zones in Gonder, Gojam, Wolega, Shoa, Harerge, Arsi, Bale, Sidamo and Kefa, 1500–2,500 m.

Uses

Firewood, timber (furniture, boxes, plywood, panels), poles, medicine (bark), shade, ornamental.

Description

An evergreen tree with a straight bole, to 25 m or more. BARK: Grey to dark brown, cracking and scaling into irregular rectangles. LEAVES: Narrow, shiny dark green, 2–5 cm, gradually tapering. Young leaves larger and brighter giving a green flush. CONES: 1–3 male catkins, yellow-brown, about 2 cm, female cones hard, rounded to 2 cm, very slow to develop, green with dull purple bloom,

outer shell thin but inner flesh eaten by monkeys and birds.

Propagation

Seedlings, wildings.

Seed

1,300–2,600 seed per kg. Germination 30–40%. Separate pulp from seed immediately after collection by soaking in water for 24 hours, then rubbing and floating. Dry seeds.

Treatment: Crack the hard woody seed coat before sowing.

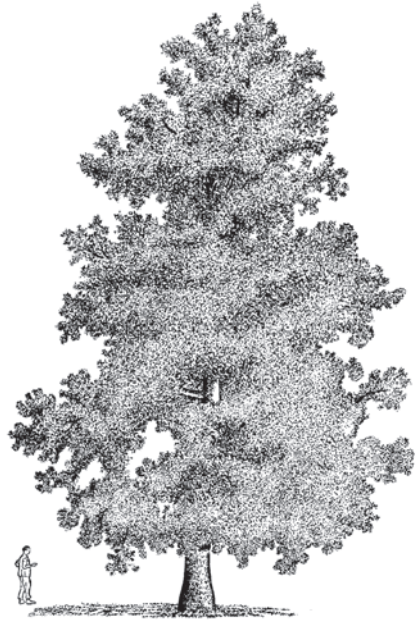
Storage: Seed can be stored for up to 2 years.

Management

Slow growing. Hardy once established.

Remarks

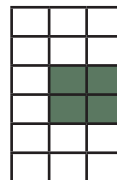
The species is now rare due to over-exploitation. The wood needs preservatives and careful seasoning to prevent warping.



Polyscias fulva

(*P. ferruginea*, *Panax ferrugineum*)

Araliaceae



Indigenous

Am: *Kariu, Yezinjero wonber*

Eng: *Parasol tree*

Or: *Tala, Karasho, Kuda*

Sd: *Kervoni, Tallaba*

Ecology

A tall forest tree widely distributed in wetter highland forests into the bamboo zone and growing as far south as South Africa. In Ethiopia it grows in woodland, and semi-humid and humid highland forests with *Syzygium*, *Cordia*, *Olea*, *Apodytes* and *Pouteria* in Shewa, Ilubabor, Kefa, Arsi and Sidamo regions. It is common in Moist and Wet Weyna Dega and Dega agroclimatic zones, 1,700–2,500 m.

Uses

Firewood, timber (boxes, crates), mulch and green manure (leaves)

Description

A deciduous tree up to 25 m with a clean straight bole to about 9 m, the base to 80 cm across, the crown flat-topped from distinctive forked branches. BARK: Grey-brown, smooth, with horizontal scars. LEAVES: Compound, very long to 1 m, with 8–14 pairs of leaflets plus 1 at the tip, each leaflet oval and leathery, 9–20 cm, the tip sharp, the base rounded, smooth above but covered with cream-yellow hairs below. FLOWERS: Green-yellow, honey-scented, very small in loose heads to 60 cm long, branching regularly, the main stalks with red-brown hairs. FRUIT: Very small, often

ribbed, in clusters on side branches, 2 seeds inside.

Propagation

Seedlings, wildings.

Seed

Can be collected from the ground. Another method is to collect fruit immediately they turn purple-black by climbing the tree. About 80,000–300,000 seeds per kg; germination rate may be 70% in 30–40 days.

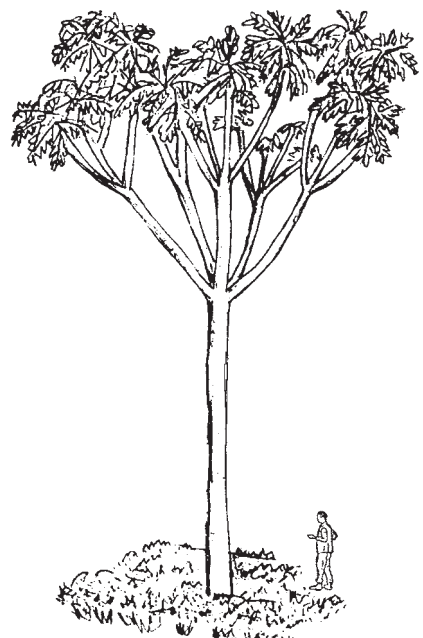
Treatment: Let fruit mature in the shade for 1–2 days, then extract by soaking in cold water for 4–6 hours. Squeeze out the seed and clean by floating it in water. Dry in the shade. Alternatively, wash seed with powder soap before drying it for two days. Seeds after extraction become white yellowish.

Management

Grows fast in good conditions.

Remarks

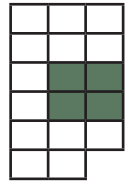
The light, soft pale-coloured wood is tough and strong. It is good for food containers as it has no smell. Fallen leaves make good mulch.



Pouteria adolfi-friedericii

(*Aningeria adolfi-friedericii*)

Sapotaceae



Indigenous

Am: *Keraro*

Gm: *Kawu*

Kf: *Shonga*

Or: *Guduba, Suduba*

Sd: *Guduba*

Wt: *Shosho*

Ecology

An upper-storey tree in evergreen rain forest and *Olea* forests in Moist and Wet Weyna Dega and Moist and Wet Dega agroclimatic zones of Sidamo, Gamo Gofa, Ilubabor, Wolega, Kefa, Arsi, Shoa and Bale, 1,300—2,400 m.

Uses

Firewood, timber (general purpose, joinery, plywood, veneer).

Description

A very tall tree, to 50 m, with a clear straight bole to about 16 m, topped by a rather small dense crown, mature trees buttressed at the base. BARK: Pale, grey-brown, smooth to lightly grooved, much white latex if cut and an unpleasant smell. Flower and leaf stalks, buds and shoots covered with golden-brown hairs. LEAVES: Stiff and large to 22 x 8 cm, usually smaller, dark shiny green above, hairy pale orange below, 10–20 pairs of prominent veins, the tip pointed, on a twisted stalk to 2 cm. FLOWERS: Cream-green, very small, in clusters beside leaves, sepals and flower stalks brown, hairy, soon falling to the ground. FRUIT: Hard, green, narrow to 4 cm with a beak, the soft hairy skin milky

but inside is one shiny brown seed to 3 cm long with a large white scar (hilum). The seed contains edible oil.

Propagation

Seedlings and wildings.

Seed

Fruit mature in April.

Treatment: Not necessary but seed should be sown fresh.

Storage: Seed has a very short viability period.

Management

Weeding when young.

Remarks

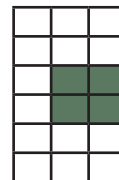
This valuable timber tree has been grown in plantations.



Pouteria altissima

(*Aningeria altissima*)

Sapotaceae



Indigenous

Am: *Kerero*

Or: *Kuraro, Kuro, Quduba*

Sd: *Auera, Gudubo*

Ecology

Grows naturally in Moist and Wet Kolla and Weyna Dega agroclimatic zones of Wolega, Ilubabor and Kefa, 1,000—1,500 m.

Uses

Firewood, timber (furniture, veneer).

Description

A tall tree to 45 m, the trunk straight to 30 m, diameter of 1–2 m at breast height, slightly buttressed at base. BARK: Smooth grey; when cut white latex drips slowly from the fibrous red-brown inner bark. LEAVES: Large and long, oval, to 13 x 7 cm, tip usually blunt and rounded, stalk 1 cm, young leaves hairy brown but mature leaves hairless (only a few on the midrib), veins yellow and clear below, raised on the upper surface; clear dots visible when the leaf is viewed against strong light with a hand lens. FLOWERS: Very small on stalks in fragrant cream-yellow clusters besides the leaves, buds hairy. FRUIT: Oval to rounded, red to 2 cm across. Inside, the shiny brown seed is up to 1.5 cm long marked with a long pale scar.

Propagation

Seedlings, wildings.

Seed

About 1,000 seed per kg.

Treatment: Not necessary, but sow fresh seed.

Storage: Seeds lose viability very quickly

Management

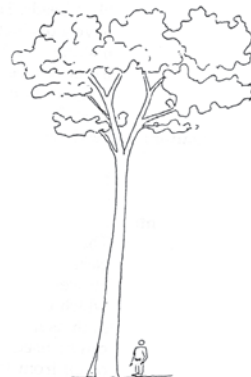
Relatively fast growing. Weeding, pruning.

Remarks

The pale pink heartwood is easy to saw and plane and takes a good polish. It is, however, not durable if used for outdoor construction.

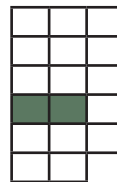


Pouteria altissima



Premna schimperi

Verbenaceae



Indigenous

Am: *Chocho*

Gm: *Taitos*

Kf: *Tumo*

Or: *Hadad, Hurgessa, Urgessa*

Sd: *Tulanji*

Ecology

Occurs in dry bushland with *Acacia*, *Carissa*, *Euclea*, *Myrica*, *Maytenus* and *Otostegia* and at margins of *Podocarpus* forests. It also grows in degraded and secondary forests and occurs in Tigray, Gonder, Gojam, Wolega, Shoa, Harerge, Arsi, Sidamo, and Kefa regions in Dry and Moist Weyna Dega agroclimatic zones, 1,300–2,300 m.

Uses

Firewood, charcoal, medicine (leaves), fencing material (cut branches).

Description

A small spreading shrub or tree to 5–7 m. Young branchlets densely hairy. LEAVES: Opposite, simple, the edge toothed, broadly ovate, yellow-green above, pale beneath, aromatic, up to 14 x 12 cm, hairy, especially beneath, stalk to 3 cm long, densely hairy. FLOWERS: Green-white, very small but numerous, on a branched head to 8 cm long, each flower tubular, swollen at the base. FRUIT: Round, green and ripening black, thinly fleshy and held in the calyx cup, to 8 mm diameter, the stone containing 4 seeds.

Propagation

Seedlings.

Seed

Treatment: Not necessary.

Storage: Can be stored.

Management

Coppicing.

Remarks

Cut branches are used as fencing around homesteads.



Prosopis juliflora

Fabaceae



Central America, Mexico

Am: *Prosopis*

Eng: *Algarroba, Mesquite*

Ecology

A thorny shrub or tree cultivated all over the tropics. It grows well in arid regions, producing deep roots and tolerating sandy, rocky or poor and saline soils. It is a useful tree in Bereha and Dry, Moist and Wet Kolla and Weyna Dega agroclimatic zones. In eastern parts of Ethiopia (Afar plains, eastern Welo, eastern Shoa and Harerge), it has become a noxious weed, for example in irrigation schemes and other wet places in hot areas. It does well in 300-1900 m above sea level.

Uses

Firewood, charcoal, timber, posts, carving, food (fruit, leaves), fodder (leaves, pods), bee forage, medicine, shade, soil conservation, nitrogen fixation, windbreak, live fence.

Description

Often a shrub, but can become a shapely tree to 15 m, though usually 3–5 m. The bole short, young branches smooth green. BARK: Thick, rough green-grey, scaly with age. Some with pairs of thorns to 5 cm. LEAVES: Compound with 2–3 pairs of pinnae, stalks to 6 cm, leaflets oblong narrow, 1.5 cm long, no terminal leaflet. FLOWERS: Gold-yellow, densely crowded in spikes 5–10 cm, fragrant. FRUIT: Yellow pod, 10–20 cm (more brittle than *P. chilensis*), sweeter, darker; 10–20 hard seeds inside, difficult to extract.

Propagation

Seedlings, direct sowing at site.

Seed

Germination 40–80%. 30,000–35,000 seed per kg. Seeds can be extracted by exposing pods to termites or soaking in water.

Treatment: Not necessary.

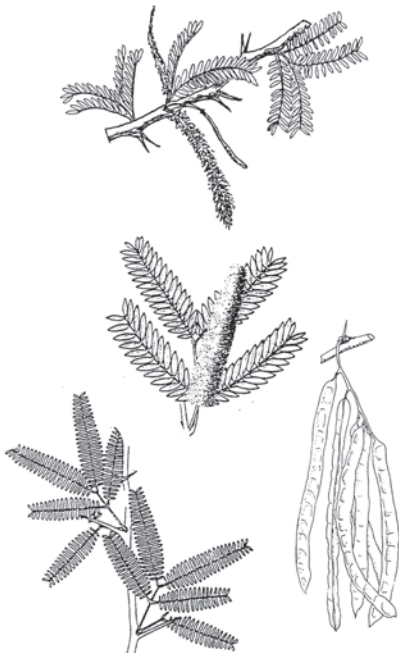
Storage: Seed stores well both in pods and when extracted as it is not attacked by insects.

Management

Fairly fast growing; capable of becoming a noxious weed on wetter sites. Space widely and follow strict management with regards to reduction of multiple stems and continued removal of lower branches to get clear bole and easy passage between trees. Use strict coppice reduction and management techniques.

Remarks

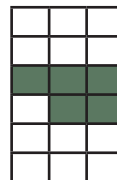
Sets seed after 3–4 years. A thorny shrub or tree with a great many variants and closely related species causing some confusion in identification. Unlike *P. chilensis*, young shoots are brown. It also grows faster and competes with crops. The sweet pods contain both glucose and protein so are valuable as fodder. The hard, dense wood burns with great heat.



Prunus africana

(*Pygeum africanum*)

Rosaceae



Indigenous

Am: *Tikur inchet*

Eng: *Red stinkwood*

Gm: *Beru*

Hd: *Arara*

Or: *Bourairo, Buraya, Homi, Mukoraja*

Sd: *Mrchiko*

Wt: *Garba, Onsa*

Ecology

A useful timber tree widespread from West to South Africa, usually in high-rainfall areas, but it is becoming rare in some places due to over-exploitation. In Ethiopia it grows in montane and riverine forests of Harerge (especially Dindin Forest), Ilubabor, Kefa, Arsi, Bale, Wolega, Sidamo, Gonder, Gojam and Shoa. Usually it occurs in high-rainfall areas in Moist and Wet Weyna Dega and Dega agroclimatic zones, 1,700-2,500 m.

Uses

Firewood, charcoal, timber (construction), poles, utensils (mortars), medicine (bark, leaf), bee forage, shade, mulch, windbreak.

Description

An evergreen tree to 40 m. In forests, the high foliage is open, the branches often pendulous, but in grassland the tree is more rounded and compact. **BARK:** Rough, dark, scaling irregularly, branches corky, branchlets dotted with breathing pores. **LEAVES:** Leathery, glossy dark green above, oval to 10 cm, margin with shallow rounded teeth, leaf stalk typically pink, to 2 cm. Crushed leaves have a bitter almond

smell. **FLOWERS:** Sprays on stalks about 8 cm long, very small, fragrant, green-white. **FRUIT:** Rounded about 1 cm, dark red, often bilobed, containing one seed.

Propagation

Seedlings, wildings.

Seed

3,400–6,000 seed per kg.

Treatment: The fleshy parts should be removed from the seed.

Storage: Seed does not store well therefore fresh seed should be used.

Management

Fairly slow growing. It is high potential industrial species that can be managed commercially.

Remarks

The heartwood darkens to a dense red. The tree bark is an important source of raw material for the pharmaceutical industry. It occurs abundantly in Ethiopia in areas such as Dimdir Arbagugu and the Omo-Gibe river basin.



Prunus persica

Rosaceae

South-West Asia, China

Am: *Kock*

Eng: *Peach*

Gr: *Kock*

Or: *Kocki*

Sd: *Kocki*

Tg: *Kock*

Ecology

A small fruit tree of temperate climates, widely planted in the highlands and in home gardens in Moist and Wet Weyna Dega agroclimatic zones, 1,700–2,400 m. It will grow at quite dry sites.

Uses

Firewood, food (fruit).

Description

A deciduous spreading tree to 6 m, but normally pruned in cultivation. **BARK:** Grey-brown, splitting; young twigs angular, smooth and red. **LEAVES:** Narrowly oval, 5–15 cm long, the edge finely toothed, dull green, paler below with a raised midrib, shortly stalked. **FLOWERS:** Blossom on the bare tree, flowers deep pink to 4 cm across, usually single, 5 petals around the central stamens. Flowers grow on small side branches which later take the weight of the tree's fruit. **FRUIT:** Round and fleshy to 8 cm across, usually smaller, yellow-red and carved with short hairs which rub off. Inside a hard pitted stone contains the single seed.

Propagation

Seedlings. Grafting to maintain tree variety and quality.

Seed

No seed treatment needed.

Management

Prune regularly. The preferred tree shape is a canopy with an open centre and good light distribution. Cut the young tree to about 50 cm, retaining 2–4 laterals to become the main supporting (scaffold) branches. As the distance between these branches widens higher up, allows the branches to fork.

As peach flowers on shoots formed in the previous season, the number of shoots in mature trees must be pruned to 25–40 cm to stabilize and maintain moderate shoot vigour and to ensure shoots are not borne ever further away from the main support branches.

The main formative pruning should be done at the start of the crop cycle. If necessary, prune again while the fruit is on the tree. Ensure that light is distributed evenly in the canopy since partly shaded shoots tend to flower on the exposed side only in the next season. The fruiting cycle of inferior cultivars may be induced by a cool, overcast season; defoliate the best varieties for a good start to a new crop cycle. Clean-cultivate orchards and mulch under the trees. During the rainy season, slash weeds or grow a cover crop. Irrigation is desirable and a must if crop cycles are to be shortened.

Remarks

It is severely affected by peach leaf curl. Even with modest management, it produces large quantities of small, rather hard fruits that are eaten raw and popular.

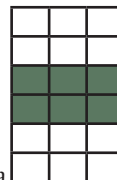
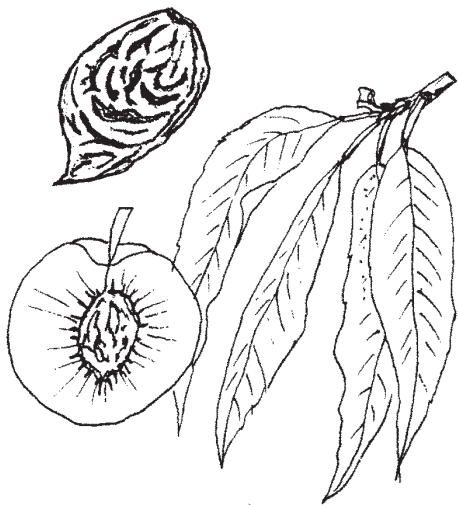




Photo: Patrick Maundu



Psidium guajava

Myrtaceae

Tropical America

Am: *Zeituna*

Eng: *Guava*

Ecology

A fruit tree that originates from South America, probably Brazil, but is now grown throughout the tropics. In Ethiopia it is planted in Moist and Wet Weyna Dega and Kolla agroclimatic zones in Shoa, Harerge, Bale, Ilubabor and Kefa, 1,200–2400 m. It is drought hardy, grows well with irrigation, but will not grow in waterlogged soils.

Uses

Firewood, tool handles, food (fruit).

Description

A small evergreen tree to 8 m, branching irregularly. BARK: Smooth, pale brown, later peeling and flaking; young shoots four-sided. LEAVES: Large, dull and oval to 15 cm long, side veins prominently hairy below, in opposite pairs. FLOWERS: White, about 2.5 cm across, 1–3 together beside leaves, many stamens. FRUIT: Rounded to 6 cm long, tipped by remains of calyx, pink, white, or yellow, depending on the variety. The sweet flesh surrounds many hard angular seeds.

Propagation

Seedlings, wildings, direct sowing at site, root suckers, root cuttings, air layering, grafting. Guava grown for processing may be propagated by seed; about 70% of seedlings retain the general characteristics of the mother tree. Guava grown for fresh fruit should be vegetatively (clonally) propagated. Air layering is possible, but for larger numbers shield or patch budding or grafting onto seedling rootstocks is recommended.

Seed:

Treatment: About 500,000 seed per kg.

Storage: Can be stored.

Management

Fast growing; pollarding, lopping, pruning, coppicing. Prune branches and roots if near crops.

Remarks

The fruit is often attacked by fruit fly. It is rich in vitamin C. The leaves do not decompose easily to add organic matter to the soil. The fruit is a useful source of money for farmers. Trees bear fruit in 3–4 years and continue to fruit for up to 30 years. The wood is termite resistant.

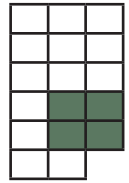




Photo: Patrick Maundu

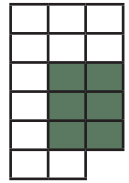


Psydrax schimperiana

subsp. *schimperiana*

(*Canthium schimperianum*)

Rubiaceae



Indigenous

Am: *Seged*

Or: *Galo*

Tg: *Tselimo, Zahak*

Ecology

A shrub or a small tree that grows in *Acacia* or *Terminalia-Combretum* woodland. It is more common at the edges of semi-humid and humid lower highland forests with trees such as *Olea-Juniperus* or *Cordia-Podocarpus-Polyscias*. Found in Moist and Wet Kolla, Weyna Dega and Dega agroclimatic zones in Tigray, Gonder, Welo, Shoa, Arsi, Bale, Sidamo, Gamo Gofa and Harerge regions, 900–2,600 m.

Uses

Firewood, farm tools, tool handles.

Description

A tall evergreen shrub or tree to 6 m.
BARK: Dark green, rough and granular.
LEAVES: Opposite pairs of ovate leaves, shiny above, dull below, up to 8 cm long and 4 cm across, narrowed to a blunt tip, base narrower, rounded to a short stalk, edge wavy, veins looped. Stipules triangular, between youngest leaves. **FLOWERS:** Green-white in dense fragrant clusters, 20–30, buds rounded, 4–5 petals, often bent back. Thin flower stalks about 1 cm often remain when flowers fall. **FRUIT:** Small, rounded, about 1 cm across in 2 sections, fleshy, becomes woody.

Propagation

Seedlings.

Seed

Treatment: Macerate it to shorten germination period.

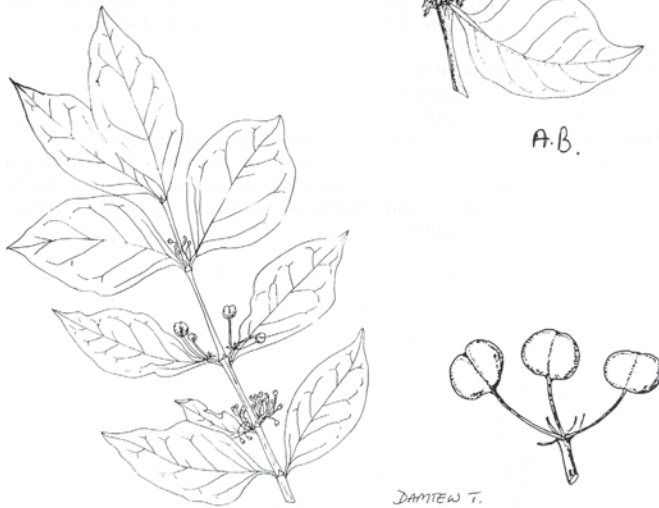
Storage: can be stored well after drying well.

Management

Coppicing.

Remarks

It is brittle but strong when used vertically. Locally, farmers use it to construct walls to which mud is applied. Its coarse branching nature retains the mud in place.



Rhamnus prinoides

Rhamnaceae



Indigenous

Ag: *Gebho*

Am: *Gesbo*

Gr: *Gisbe*

Or: *Gesbo*

Tg: *Gesbo*

Ecology

A small tree or shrub of wet rainforests well distributed in Africa. In Ethiopia, it is widespread and locally cultivated from medium to high altitudes, in grasslands, in rain forests and on the margins of evergreen forests in Moist and Wet Kolla, Weyna Dega and Moist Dega agroclimatic zones, 1,000–3,200 m.

Uses

Firewood, flavouring (leaves), medicine (roots).

Description

An evergreen shrub or small tree to 7 m, which may climb over other bushes. It has slender stems and drooping branches. **BARK:** Grey-brown, dark with age, smooth but clearly dotted with breathing pores. **LEAVES:** Alternate, long oval to 10 cm, shiny dark green above with raised vein network, tip sharply pointed, edge finely toothed, base narrowed to a stalk. **FLOWERS:** Small, yellow-green with 5 sepals, single or 2–10 in a group on thin stalks. **FRUIT:** Rounded, three-part berries on a 2 cm drooping stalk, about 8 mm, shiny red, turning purple-black, 3 seeds inside.

Propagation

Seedlings.

Seed

Germinates readily.

Treatment: Not necessary.

Storage: Stores well. Mix it with ash to repel insect attack.

Management

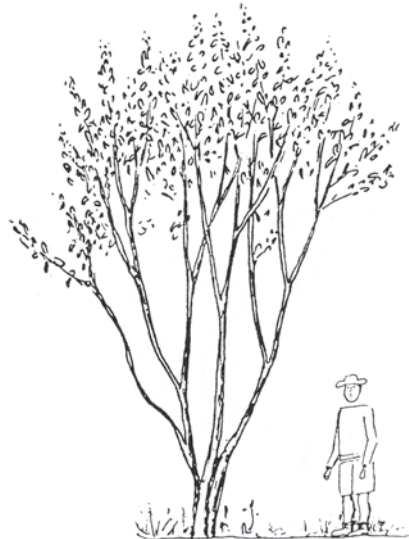
Need to improve the infiltration of the soil. It does not like wet and swampy areas. Adding sand to clay soil will help. Harvest before the branches are coarse (diameter > 1 cm).

Remarks

It is widely planted in gardens. The roots contain ingredients said to purify the blood. The leaves are used to flavour the local alcoholic drinks 'tella' and 'tej', which are brewed from fermented barley, sorghum or finger millet.

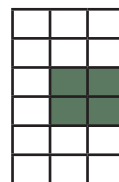


DAMTEW T.



Rhamnus staddo

Rhamnaceae



Indigenous

Am: *Tedo, Tsedo*

Or: *Qadida*

Sh: *Kistani-schahala, Quloum*

Sm: *Jajale*

Tg: *Tsedo*

Ecology

Distributed from Eritrea and Ethiopia south through East Africa to Zimbabwe and also in the Democratic Republic of Congo. In Ethiopia, it occurs in rocky and valley areas of semi-humid and humid lowland and in woodlands at moderate altitudes in Tigray, Gonder, Shoa, Arsi, Kefa, Gamo Gofa, Sidamo, Bale, and Harerge. It does well in Moist and Wet Dega and Weyna Dega agroclimatic zones, 1,400–2,900 m.

Uses

Firewood, flavouring (leaves).

Description

A small bushy rigidly branched shrub or small tree growing to 5 m. BARK: Grey-brown, smooth. LEAVES: Small, narrow and oblong, to 5.5 cm long, clustered on short side branches which may be spine tipped. Leaf tip is pointed, rounded or notched, the edge with small rounded teeth. FLOWERS: Small green-yellow, only 2–4 together, 4 petals, almond scented. FRUIT: Red to purple berries, only 5 mm across.

Propagation

Seedlings.

Seed

Treatment: Not necessary.

Storage: Stores well.

Management

Coppicing.

Remarks

The species tolerates repeated coppicing. It is used for flavouring in the same way as *R. prinoides*, but less commonly and only for 'tej'.



Rhoicissus revouilii

Vitaceae

Indigenous

Or: *Daga chebsa*

Sm: *Armo saged, Hyab*

Ecology

A perennial shrub, often a climber, which occurs in *Acacia* and *Combretum-Terminalia* woodland, wooded grassland, and riverine forests. It is found in Ilubabor, Welo, Shewa, Wolega, Kefa, Gamo Gofa, Sidamo, Bale and Harege in Dry, Moist and Wet Kolla and Weyna Dega agroclimatic zones, 700–1,900 m.

Uses

Firewood, food additive (stem juice).

Description

A shrub or woody climber to 5 m with tendrils opposite the leaves. BARK: Only young branchlets grey-yellow and hairy, scaly when older. LEAVES: 3 leaflets, variable in size, the central leaflet long oval, 3–9 cm, lateral leaflets narrow, sickle-shaped, veins looping before the edge, usually without teeth, shiny deep green above, paler below but not hairy, a stalk to 3 cm. FLOWERS: Tiny in dense heads opposite the leaves, stalks and calyx with woolly yellow hairs, brown-purple petals in star-like flowers. FRUIT: A bunch of fleshy black berries, bilobed, about 1 cm across, surface rough, 1–3 seeds in each berry.



Propagation

Seed

Treatment:

Storage:

Management

The plant has tendrils and requires something to climb and hook onto. Stake the plants, or plant them where there are other plants to support them.

Remarks

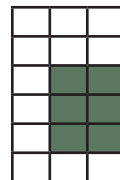
The acid juice from the stem is sometimes added to palm wine.



DAMTEW T.

Rhoicissus tridentata

Vitaceae



Indigenous

Am: *Aba woldu, Wodel asfes*

Eng: *Bitter grape*

Or: *Dangogo siyaka, Gale lala, Hida refe*

Sm: *Hayab*

Tg: *Karshiro*

Ecology

Found in East and Central Africa south to South Africa. A woody climber growing on rocky hillsides, in open grassy woodlands and at the margins of dry evergreen forests. In Ethiopia it grows in Moist and Wet Kolla, Dega and Weyna Dega agroclimatic zones of most regions, 1,200–2,400 m.

Uses

Food (fruit), medicine (roots), bee forage.

Description

A woody climber with tendrils, 4–10 m, or a small shrub. All parts with yellow hairs. BARK: Pale brown, smooth, powdery, branchlets often red, softly hairy, clear breathing pores (lenticels). LEAVES: 3 leathery leaflets, central leaflet oval to rounded, laterals narrower, often rounded at base, main veins run straight to the widely toothed leaf edge, always yellow-brown hairy below, stalk 4–7 cm long; simple tendrils opposite leaves. FLOWERS: Tiny, in dense flower heads about 3 cm across, on a long stalk opposite a leaf, buds dark purple, 5 purple-green petals spread like a star, with stamens bending over the dark centre, petals soon fall. FRUIT: Bunches of shiny berries about 1 cm across, red then black, 1–4 seeds edible flesh.

Propagation

Seedlings.

Seed

Treatment: Not necessary.

Storage:

Management

The plant has tendrils and requires something to climb and hook on. Stake the plants, or plant them where there are other plants to climb on.

Remarks

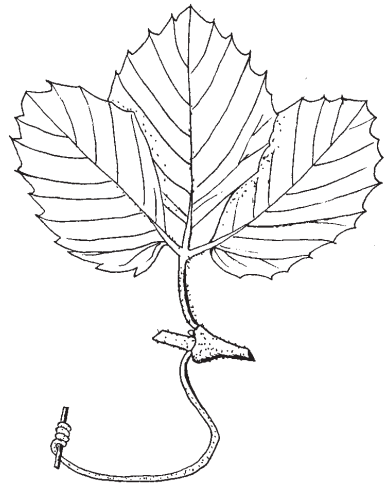
Plenty of bees visit the flowers.



Photo: Patrick Maundu



Photo: Patrick Maundu



Rhus glutinosa

Anacardiaceae

Indigenous

Ag: *Kumini*

Am: *Embus, Qamo*

Or: *Akessa, Tatessa*

Tg: *Shemut*

Ecology

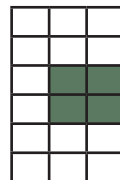
A shrub or tree found in semi-arid conditions in lowland and highland woodlands of Moist and Wet Weyna Dega and Dega agroclimatic zones of Tigray, Gojam, Welo, Shewa, Harerge and Arsi, 1,500—3,300 m.

Uses

Firewood, farm tools, tool handles.

Description

A spreading or upright shrub or tree 3–10 m. The trunk may reach 25 cm diameter. This species is named for the new shoots which exude a shiny, sticky liquid (glutinous). **BARK:** Red-brown becoming dark grey. **LEAVES:** The three leaflets are all long, narrow, wider towards the pointed tip, all about the same length, 8–23 cm, midrib clear below, narrowed to a long leaf stalk. Leaves dry brown with pale veins. **FLOWERS:** Very small, male and female, in dense rounded heads, on hairy branched stalks as long or longer than leaves. **FRUIT:** Cream to pale brown and shiny, about 5 mm across, rounded to bean shaped,



Propagation

Seedlings.

Seed

Treatment: Not necessary.

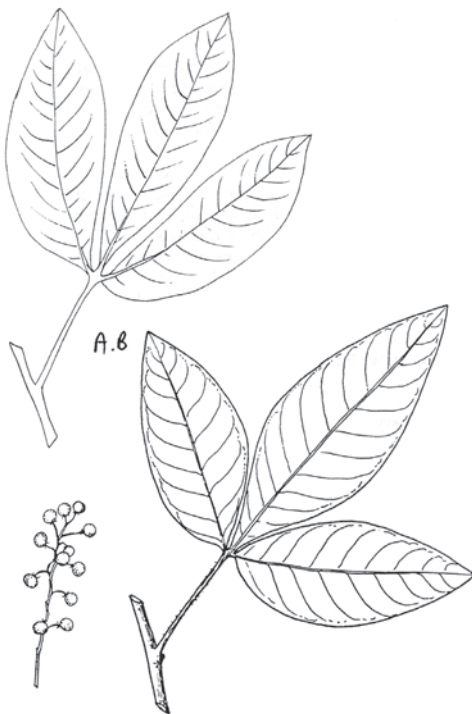
Storage: Stores well.

Management

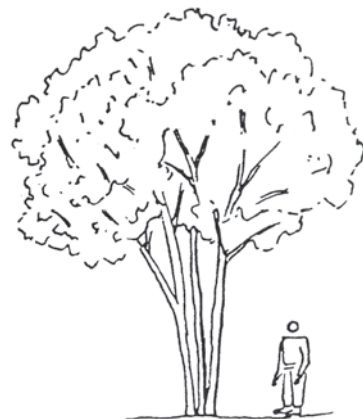
Fast growing. Coppicing and taming the young branches to required shape for hoes and axe handles.

Remarks

There are 3 subspecies in Ethiopia.

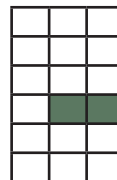


DANTEW T.



Rhus natalensis

Anacardiaceae



Indigenous

Am: *Chakema, Takuma*

Or: *Debobosso, Debobosha, Tatessa*

Tg: *Tetale, Thathalo*

Ecology

A bush widespread in Africa. In Ethiopia it usually grows in wooded savannah, on forest edges and in lowland woodlands in Moist and Wet Weyna Dega and Dega agroclimatic zones of most regions, 1,200-3,000 m.

Uses

Firewood, charcoal, tools, farm tools, food (fruit), medicine (leaves and leaf decoctions, pounded roots), toothbrushes (stems).

Description

A many-branched shrub or tree, sometimes tending to scramble, up to 8 m in height. BARK: Grey, often almost white, branchlets pale and dotted with breathing pores, branches angular. LEAVES: three-foliolate, the central leaflet largest to 9 cm, usually dark green, rather leathery, hairless, sometimes toothed, very variable, wider towards the tip, narrowed to the base, on a stalk 2–4 cm. FLOWERS: Green-yellow in loose heads to 15 cm. FRUIT: Oblong to bean-shaped, smooth, red with thin flesh and a waxy covering, about 5 mm, edible. The dry papery fruit soon fall.

Propagation

Seedlings.

Seed

About 26,000—30,000 seed per kg.

Germination is fast and good.

Treatment: Not necessary.

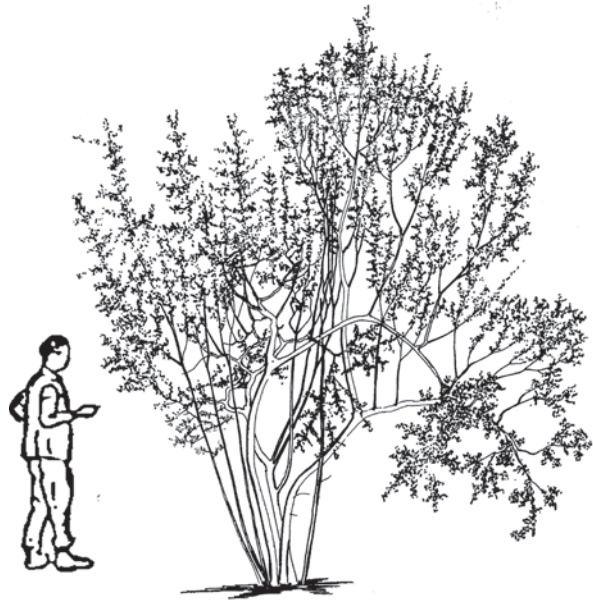
Storage: Remains viable for only about 3 months at room temperature.

Management

Coppicing.

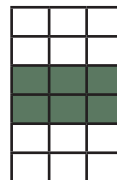
Remarks

The charcoal sparks, fuelling a noisy and spreading fire.



Rhus retinorrhoea

Anacardiaceae



Indigenous

Am: *Tilem*
Or: *Tadessa*
Sm: *Sisai*
Tg: *Tekalo, Vralo*

Ecology

Found also in Sudan, Somalia and Arabia, this shrub occurs in evergreen bushland on dry and rocky slopes in Tigray, Welo, Shewa, and Harerge regions. It performs well in Dry and Moist Weyna Dega and Dega agroclimatic zones, 1,400–2,700 m.

Uses

Firewood, farm tools, walking sticks, local beds (leaves).

Description

A thin shrub or small tree 2–6 m, the slender red-brown twigs hanging down. Young shoots shiny. LEAVES: Long, thin and pointed, over 4 times longer than broad, to 20 cm, widest below the centre, edge finely curly, shiny green above, paler below, oily and sticking together if pressed, usually remaining green as they dry. FLOWERS: Small, male and female, in loose branched heads, stalks harmless. FRUIT: Round or bean-shaped, less than 5 mm, shiny pale brown, slightly pink, soon falling.

Propagation

Seedlings. Germinates well.

Treatment: No need of seed treatment.

Storage: Stores well.

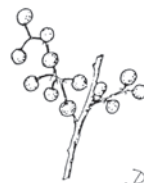
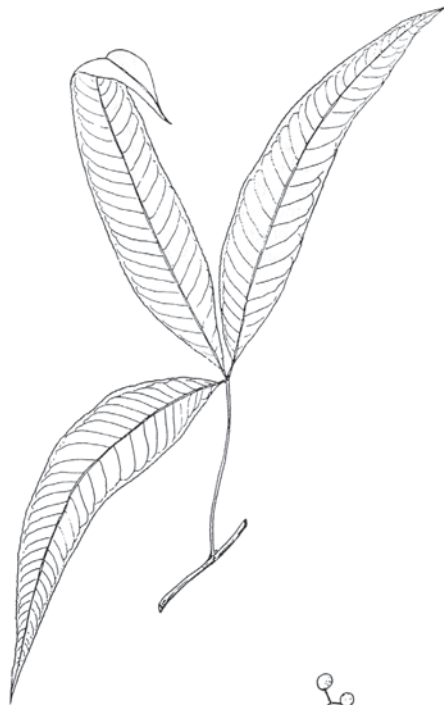
Management

It is normally used for farm implement stick as hoe handles. Therefore, farming it to bend to the required shape is necessary at young age.

Pruning long and slendering stems at young age will make good quality sticks.

Remarks

The leaves stick together if they are piled on top of each other and pressed down forming local mattress usually used on matt of sticks, 'Qot' in Amharic.



DAMTEW T.

Rhus vulgaris

Anacardiaceae

Indigenous

Am: *Qmmo, Yeregna kolo*

Or: *Tatesa, Dabobessa*

Ecology

Its range extends from Cameroon in West Africa to Ethiopia and south to Mozambique, Malawi, Zambia and Zimbabwe. In Ethiopia, it is a very common shrub at forest edges and in woodlands in Dry, Moist and Wet Weyna Dega and Dega agroclimatic zone in most regions, 1,500–2,800 m.

Uses

Firewood, farm tools, food (fruit), medicine (fruit decoction).

Description

A shrub or small tree that occasionally reaches 6 m. Branchlets brown, hairy. LEAVES: 3 leaflets, dull green, softly hairy, especially below, oval to rounded, usually 5 cm long, the tip either rounded, notched or sharp, the upper edges sometimes with large rounded teeth; leaf stalk to 4 cm, leaflets, branchlets and underside of leaflets are densely hairy; leaflet sizes very variable. FLOWERS: Small bunches on hairy branched sprays, to 15 cm, yellow-green, with bright yellow stamens. FRUIT: Thin, yellow-red, flat and round discs, brownish-red when dry, only 3–5 mm across, edible.



Propagation

Seedlings.

Seed

Treatment:

Storage: Remains viable only about 3 months at room temperature.

Management

Coppicing. Rather slow growing.

Remarks

Fruits taste better when roasted. Shepherds in Ethiopia roast and eat them while out in the pastures.



Ricinus communis

Euphorbiaceae



Indigenous to Africa

Ag: *Chakmi*;
Am: *Gulo*;
Eng: *Castor-oil plant*;
Gr: *Kobo, Kuwobo*;
Or: *Qobo, Obo*

Ecology

A shrubby tree growing over a wide range of altitudes all over Africa, preferring humus-rich and disturbed ground. In Ethiopia, it is found in Moist and Wet Kolla, Weyna Dega and Dega agroclimatic zones of almost all regions, 400–2,700 m.

Uses

Medicine (castor oil), oil (seeds).

Description

An evergreen shrub or tree to 5 m (many different varieties). Stems often red, hollow with age, well-marked leaf nodes and leaf scars. LEAVES: Large compound palmate leaves to 50 cm across with 5–11 lobes, the edge toothed, on a long hollow leaf stalk. Young leaves soft, shiny, dark red-green above. FLOWERS: Crowded on upright spikes to 60 cm, male flowers with creamy-yellow stamens at the base; female flowers with soft green spines and 3 bright red divided stigmas at the top. FRUIT: Round, green-brown capsules, spiny, to 2.5 cm across, split to set free 3 seeds, grey-purple-brown, shiny and spotted with a small white structure (caruncle) at one end.

Propagation

Seedlings, direct sowing at site.

Seed

Collect mature fruits before they split open. Germination is good and fast, about 90 % after three weeks. About 1,300 seeds per kg.

Treatment: Not necessary.

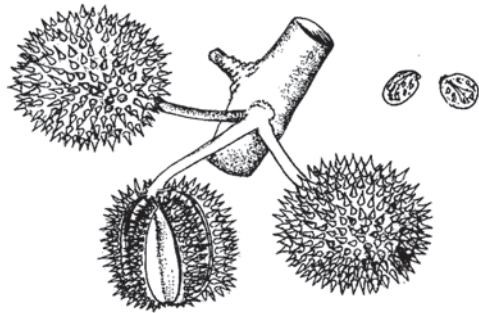
Storage: Stores well for 2–3 years.

Management

A fast-growing but short-lived plant. Can be grown as a fallow plant and on cropland. Often found in homesteads.

Remarks

The plant is drought and termite resistant. The seed coat and leaves are poisonous to animals, including poultry. Even the oil residue can only be used as stock feed if specially treated. It can, however, be used as an organic manure. The seeds yield up to 50% oil. The oil has many industrial uses. For medicinal purposes, the oil extract must be heated to neutralize the strong poison, ricin. Even a few seeds can kill if they are chewed, so take care with children. The oil is best used as a body lotion but was commonly used as a purgative in the Western world until better products replaced it.



Rosa abyssinica

Rosaceae



Indigenous

Ag: *Mawordi, Gmtsi*

Am: *Kega*

Eng: *Abyssinian rose*

Gr: *Engocha*

Hd: *Enqoto, Gora*

Or: *Enqoto, Goro*

Sm: *Dayero*

Wt: *Tsege-reda-chisha*

Ecology

Found only in Arabia, Eritrea, Ethiopia, Somalia and the Sudan, this rose is common in Ethiopia in upland dry evergreen forests and margins or clearings of forests as well as in bushland and dry grasslands. It is also found near houses and on river banks in Dry, Moist and Wet Weyna Dega and Dega agroclimatic zones of Tigray, Gondar, Welo, Gojam, Shewa, Harerge, Arsi and Bale, 1,700–3,300 m.

Uses

Firewood, food (fruit), medicine (flowers, roots, fruit), live fence.

Description

A prickly evergreen shrub, creeper or climber, or a small tree that grows to 7 m. Few prickles on the stem, slightly curved from a wide base and all similar. Variable in many features. LEAVES: Compound, leathery, 3 pairs of leaflets plus one at the tip, each narrowly ovate 1–6 cm, tip sharp, edge toothed, on a short stalk which is winged by the leafy stipules. FLOWERS: Fragrant white-pale yellow, usually 3–20 in dense heads, each stalked, the sepals long, narrow and hairy, soon fall, 5 petals about

2 cm long, tip rounded to square, many stamens. FRUIT: Green at first, ripen to orange-red, about 2 cm long, fleshy and edible, seeds within.

Propagation

Seedlings, cuttings.

Seed

Fruits ripen in March for seed collection.

Treatment: No treatment needed.

Storage: Stores well.

Management

Smaller plants can also be divided and used for multiplication as can suckers.

Bending young plants and thinning to few per stack will ease production and harvesting of fruits. There are less seedy and more fleshy varieties that can be used for improvement.

Remarks

Children collect and eat the fruits are collected and eaten by children.



Salix mucronata

(*S. subserrata*)

Salicaceae



Indigenous

Ag: *Tsutsui*

Am: *Ahaya, Wonz admik*

Eng: *Wild willow*

Gm: *Eleselesek*

Or: *Alaltu, Alatu, Barodo*

Sm: *Buro*

Tg: *Kwaa*

Ecology

Widely distributed in a stretch in Africa from the Nile lands in the north to South Africa. A small tree occurring along river and stream banks, in woodlands as well as in lower and upper highland forests with *Schefflera* in Moist and Wet Kolla, Weyna Dega, and Dega agroclimatic zones of nearly all regions, 1,250–2,850 m.

Uses

Firewood, medicine, bee forage, soil conservation (stabilising river banks and gullies), toothbrushes.

Description

An evergreen shrubby tree 2–10 m, its shape often distorted by floods. **BARK:** Young twigs hairy, then smooth, reddish. Bark grey-brown, grooved. **LEAVES:** Variable, olive green, shiny above, pale silver-grey below, to 16 x 3 cm, edge finely toothed, on a short stalk. **FLOWERS:** Terminal or on short side shoots, in short spikes, no petals or sepals. Male catkins dense to 5 cm, yellow due to stamens. Female spikes shorter, greenish flowers. **FRUIT:** In upright heads, about 3 cm long, with small capsules which split to set free tiny woolly seeds, wind dispersed.

Propagation

Grows easily from woody cuttings. This is the preferred method.

Seed

Collect seeds by cutting the fruiting branches before the fruits are open. Later the tufted woolly seeds will be blown away by wind. Seeds are, however, normally not used for propagation of *Salix* as they grow well from cuttings.

Treatment: Not applicable.

Storage: Not necessary.

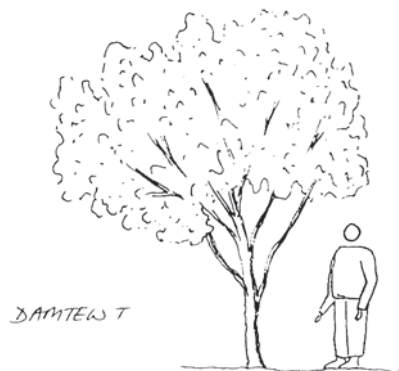
Management

No special management is needed except planting and caring for the cuttings at the right site.

Cover the cuttings with moist and black cloth to initiate rooting before shooting. Remove the cover after the cuttings have rooted well.

Remarks

This tree occurs along waterways that are flooded during some part of the year. This is the only indigenous *Salix* sp. *Salix* are generally useful for stabilising river banks. The taxonomy of this species has been debated and *S. subserrata* and *S. mucronata* have earlier been treated as separate species.



Salvadora persica

Salvadoraceae

Indigenous

Af: *Dadabo*

Ag: *Shwelsba*

Am: *Aday, Yeharer-mefaqya*

Eng: *Toothbrush tree*

Nur: *Gegi*

Sm: *Aday, Aras, Rumei*

Tg: *Hadai*

Ecology

Widespread all over dryland Africa and the driest parts of India. Occurs in thorn scrub, on desert flood plains and in grassy savannah, even on alkaline soils in Bereha and Dry and Moist Kolla agroclimatic zones of Afar plains, Shewa, Hararge, Sidamo, Gamo Gofa, and Kefa, 0–1,350 m. It is very drought resistant. An important indicator of saline soils, even though it prefers sandy-clay soils in water courses. Very drought resistant, tolerates areas with less than 200 mm annual rainfall. Riverine in very dry areas.

Uses

Firewood, food (fruit), medicine (latex, stem, roots), fodder (fruit, leaves), shade, soil conservation, toothbrushes.

Description

An evergreen trailing shrub or small tree, 3–7 m, young flexible branches, pendulous, older wood twisted; branches often hanging. BARK: Smooth and pale, later brown and corky. LEAVES: Yellow-green, dull, rather fleshy but hard with rough gland dots and raised veins, oblong to rounded, to 5 cm long. FLOWERS: In loose heads, to 10 cm, small, white. FRUIT:

White, then pink to purple, 1 cm, one seeded, juicy and strongly flavoured, sweet but peppery.



Propagation

Seedlings, sow seed in pots.

Seed

About 3,400 seed per kg. Germination commonly 40-50 %.

Treatment: Fruit pulp should be removed and seed washed in water before sowing. Soaking in lukewarm water for 24–72 hours may hasten germination. Soaked, de-pulped seed may germinate in 24 hours.

Storage: Seed can be stored for about a month.

Management

Slow growing. Produces root suckers. Trees for shade should be planted near other trees such as *Acacia tortilis* for support. Pollarding for fodder and to produce short stems to be harvested for toothbrushes.

Remarks

An important fodder species for dry areas when nothing else is available as the shoots can be browsed all year by cattle, sheep, goats and camels — but milk may be flavoured. A kitchen salt can be produced from the ash of wood and leaves. The fruit are attractive to monkeys and birds. The bark contains an antibiotic that keeps the mouth clean and helps to prevent tooth decay. The fruits are eaten whole and have a slightly hot taste.



Photo: Patrick Maundu



Photo: Patrick Maundu



Sapium ellipticum

Euphorbiaceae

Indigenous

Gm: *Bal*
Kf: *Shedo*
Or: *Bosoka, Wagisa*
Sd: *Gancho*
Tg: *Berberi-islamay*

Ecology

A tree of secondary scrub that fringes forest and forest edges. It extends from West Africa to Eritrea and Ethiopia and south to South Africa. In Ethiopia, it grows along streams in deciduous woodland and in moist montane forests in the humid lower parts of the western highlands of Moist and Wet Kolla and Weyna Dega agroclimatic zones of Tigray, Gondar, Gojam, Wolega, Ilubabor, Shewa, Kefa, and Sidamo regions, 1,000–2,200 m. Common at the edges of evergreen forest and in wooded ravines.

Uses

Firewood, farm tools, tool handles, fodder (leaves).

Description

A small- to medium-sized deciduous tree to 12 m, occasionally reaching 20 m. BARK: Light brown to almost black, rough, branches tending to droop. White latex only seen when young parts are cut. LEAVES: Long, oval, dark above, paler below, turning dark red before falling, to 14 cm long, tip pointed, edge irregularly toothed, midrib and veins raised below, about 10 pairs of side veins; base narrow or rounded to a 1–2 cm stalk. FLOWERS: No petals or sepals. Flowers catkin-like in spikes 5–10 cm long, the upper part with

tiny male flowers each with yellow stamens; 2–5 rounded female flowers at the base, larger, on longer stalks. FRUIT: Two-part red capsules about 1 cm across, topped with remains of style. The capsule finally opens to release seeds. Seeds often eaten by insect larvae.



Propagation

Seedlings, wildings, direct sowing at site.

Seed

Collected in capsules which are cracked to extract seed.

Treatment: Not necessary.

Storage: Seed can be stored for long periods.

Management

Coppicing, pollarding, lopping.

Remarks

The leaves are protein-rich and good for livestock fodder.



Sarcocephalus latifolius

Rubiaceae

Scanty info

Indigenous

Agn: *Mogno*

Mjr: *Kow*

Ecology

Growing in Dry Moist Bereha and in Dry, Wet and Moist Kolla agroclimatic zones of Gambella, Gojam, Ilubabor and Kefa, 300-1,400 m, annual rainfall 600-2,000 mm.

Use

The wood from branches is used for knife handles and fuelwood. The bark, leaves and roots are boiled in water and used to treat back pain. The fruit is edible. Bees feed on the flowers.

Description

It is a shrub to small tree that grows to a height of 7 metres. Stem grayish in colour, LEAVES shiny green above, pale green underneath, 6 - 17 cm in length and 4-12 cm in width; leaf petiole up to 2.5 cm, reddish in colour and about 3cm in length, margin simple, leaves curved towards inside, midrib coarse from outer side and flat from inside. FLOWER: Flowering nodes 3 – 5 cm in diameter, corolla whitish to pinkish, FRUIT: edible, 3 -8 cm in diameter, fruiting in February; seeds many.



Propagation

Seedlings, Wildings.

Seed

Treatment : Need to macerate the fruit.

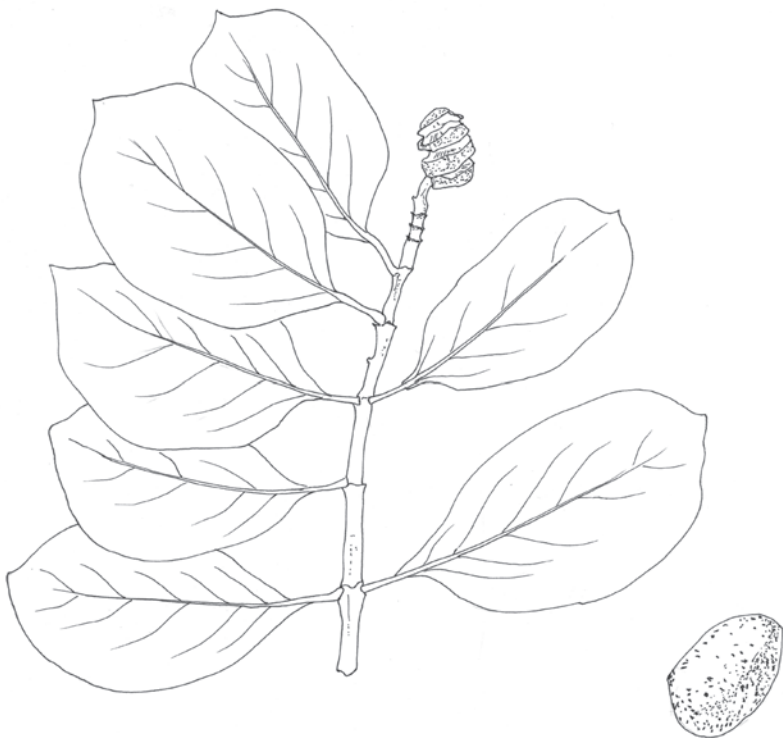
Storage: Seeds can be stored for weeks.

Management

Remarks

Wood susceptible to termite attack.

Flowering in January.



Schefflera abyssinica

Araliaceae



Indigenous

- Ag:** *Pimepini*
Am: *Gitem, Kokora*
Kf: *Kambelo*
Or: *Harfatu, Marfatu*
Sd: *Oroni, Getem*
Sm: *Bobuluhu*
Tg: *Getem*
Wt: *Kokora*

Ecology

This tree of upland rain forests is found south to Malawi and Zambia and west to Cameroon. It grows in secondary forest and woodlands in the humid upper highlands of the central, eastern and western highlands with *Celtis*, *Polyscias*, *Podocarpus*, *Syzygium*, *Olea*, *Mimusops*, *Albizia*, and *Apodytes*. It occurs in Moist and Wet Kolla, Weyna Dega and Dega agroclimatic zones of Tigray, Gondar, Wolega, Shewa, Harerge, Arsi, Sidamo, Kefa, and Ilubabor, 1,400–2,800 m.

Uses

Timber (furniture, boxes), farm tools, bee forage and live fence.

Description

A tree to 30 m with large leaves, rather palm-like appearance. The trunk broad but twisted, the crown large and spreading. **BARK:** Grey-black and corky. **LEAVES:** The large, compound digitate leaves are clustered at the ends of branches on stalks to 30 cm. The 5–8 leaflets have stalks 2–6 cm long. Leaflets are stiff or leathery, ovate, about 10–20 cm long, to 10 cm wide, the tip pointed, the edge normally

round-toothed, base heart-shaped to rounded, few side veins, curved towards tip. **FLOWERS:** Compound flower heads with branchlets (racemes) 10–40 cm long are clustered below the leaves. Each small flower shortly stalked, and groups on a stalk about 2 cm long. The fleshy and fragrant cream-yellow flowers attract bees. **FRUIT:** Rounded and ribbed, about 5 mm, clustered along flower branches, red when mature.

Propagation

Cuttings, seedlings, wildings. Cuttings should be planted at the end of the heavy rainy season.

Seed

Treatment: No need, germinates in two weeks time

Storage:

Management

Remarks

Wood soft and easy to work but little use as firewood. Flowers during February to March and fruits during March to June. Seeds are collected in May – July.



Schinus molle

Anacardiaceae



Peru, Andes

Am: *Qundo berbere*

Eng: *Pepper tree*

Ecology

An evergreen tree commonly planted in dry warm climates throughout the world. It will grow in almost any soil but prefers well-drained sites. It is extremely drought resistant once established and reaches maturity in less than 20 years. It grows in Dry and Moist Bereha, and Dry, Moist and Wet Kolla, Weyna Dega and Dega agroclimatic zones from near sea level to 2,400 m.

Uses

Firewood, charcoal, spice (fruit), bee forage, shade, ornamental, soil conservation, windbreak, insect repellent (leaves).

Description

A tree with attractive light weeping foliage to 15 m, the trunk short, the crown spreading. BARK: Dark brown, peeling, very sticky latex forms if the bark is damaged. LEAVES: Compound to 30 cm, many narrow leaflets to 7 cm, with a peppery smell if crushed. FLOWERS: Very small, green-yellow. FRUIT: Hanging on female trees, small round berries green to red then black, edible.

Propagation

Seedlings.

Seed

Germination rate 40–80%. 31,000–44,000 seed per kg.

Treatment: Not necessary.

Storage: Seed can be stored.

Management

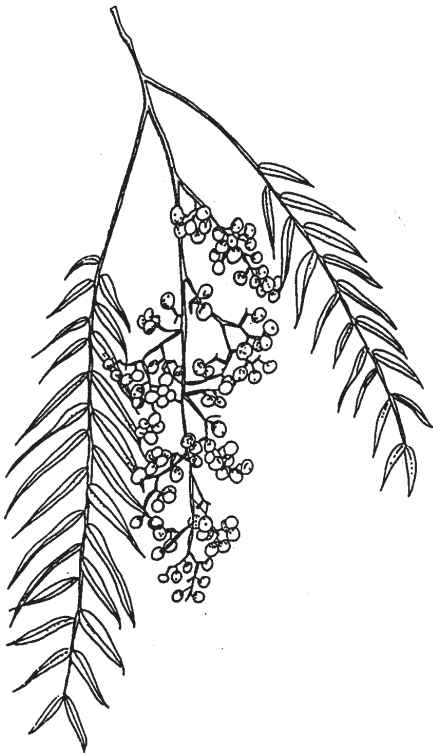
A fast-growing tree. Pollarding, lopping and coppicing.

Remarks

The tree should not be planted too close to buildings because branches tend to fall as the tree ages. Planted in Ethiopia as an avenue tree and also recommended for homesteads.



Photo: Patrick Maundu



Sclerocarya birrea

Anacardiaceae



Indigenous

Or: *Didissa, Didigssa*

Nur: *Chobwe*

Tm: *Gwemel*

Ecology

An African fruit tree occurring at medium to low altitudes from West Africa to Eritrea and south to Natal scattered in mixed deciduous woodland and wooded grassland. In Ethiopia, it is found in open deciduous woodlands on rocky slopes in Dry and Moist Bereha, Kolla and Weyna Dega agroclimatic zones of western Tigray, Shewa, Gambella, Gamu Gofa and Sidamo, 400-1,700 m.

Use

Food (fruit), jelly, drink (fermented fruit juice), medicine (bark).

Description

A deciduous tree 10–18 m with a thick bole and large branches to a light, rounded crown. **BARK:** Grey, then black and thick with irregular cracks and raised scales; inner bark pink-red. **LEAVES:** Compound, crowded at tips of branches, 3–18 pairs of leaflets, each stalked, oval to 10 cm, tip pointed or blunt. **FLOWERS:** Male and female flowers on the same or different trees; pale green male flowers in spikes, hanging down and often with insects; female flowers solitary, green-pink. **FRUIT:** Rounded and fleshy to 3.5 cm across, skin cream, spotted, peeling away from the sweet flesh, which tastes a bit like mango. Each fruit contains a hard edible stone that has 2–3 large seeds inside, oily and edible.

Propagation

Seedlings, wildings, cuttings.

Seed

Mature fruit fall while still green and ripen to a yellow colour on the ground. Around 400–450 stones per kg, each with 2–3 seed inside. Germination may reach around 40 % after 6 weeks.

Treatment: Germination is hastened if flesh is removed, stone cleaned and soaked in cold water for 24 hours before sowing.

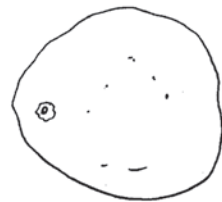
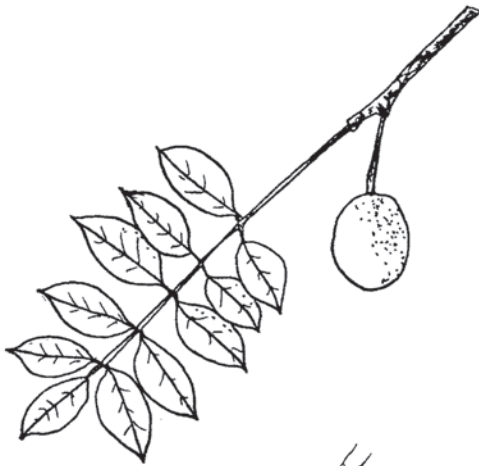
Storage: Can be stored well in airtight containers at cool temperature but viability is lost within a month at room temperature.

Management

Produces root suckers. Young trees coppice easily; can be grafted for best varieties.

Remarks

The fruits are eaten raw as a snack. The fruits can be made into an alcoholic drink and delicious amber jelly. Vitamin C content of the fruits is reported to be 4 times that of orange juice. The bark is used to treat dysentery and diarrhoea. It is among the most highly valued indigenous species for its fruits (nuts). In South Africa, it is reported to have been declared protected.



Securidaca longepedunculata

Polygalaceae

Indigenous

Agn: *Urao*

Am: *Temene, Etse, Menabe, Eise Menabele*

Brt: *Sheget*

Eng: *Violet tree*

Gmz: *Sikida*

Nur: *Leele*

Shn: *Sigida;*

Wel: *Sangano*

Ecology

Widespread in tropical Africa from Eritrea and Ethiopia to South Africa, occurring in semi-arid savannah and deciduous lowland woodland. In Ethiopia, it grows in Dry and Moist Bereha and Kolla agroclimatic zones, common at Benishangul-Gumuz and Gambella, also occurs in Tigray, Gondar, Gojam, Wolega, Shewa, Ilubabor and Gamo Gofa in various kinds of woodlands and bushlands, 400-1,700 m.

Use

Poles, medicine (bark, leaves, smoke from burning plant parts), veterinary medicine (bark), bee forage, fibre (inner bark for ropes), incense (root), soap substitute (bark).

Description

A semi-deciduous shrub or small tree 2-6 m, with slender branches to an open crown, sometimes with drooping branchlets. **BARK:** Young twigs yellow-green, becoming stringy and pale; rough grey mature bark flakes to show yellow below. Deep fissures when old. **LEAVES:** Alternate, thin and narrow, tip rounded, to 5 cm long, hairy when young, becoming smooth, blue-green, sometimes clustered on spine-tipped

branchlets. **FLOWERS:** Small, about 1 cm long, pink or purple, sweet scented in showy sprays with new leaves. **FRUIT:** Rounded and winged, to 4 cm long, purple-green when young, pale yellow-brown when mature, hanging in bunches.



Propagation

Direct sowing at site. Raising and transplanting seedlings is less successful than direct sowing.

Seed

About 6,000 seed per kg.

Treatment: Seeds should be covered with grass and watered until the beginning of the rainy season when they are directly sown at site. Germinate poorly otherwise. Soak in cold water for 24 hours just before sowing.

Storage: Can retain viability for a long period at room temperature if kept dry.

Management

Fairly fast growing. Produces root suckers. Seedlings are difficult to plant successfully because of the sensitive taproot.

Remark

The root is burnt to produce smoke with a pleasant scent, while lather from the bark of the root is used as soap substitute for washing clothes. The smoke is inhaled to treat sore throat infections and cold, while leaves are used to treat coughs. The bark is pounded, chewed and applied to the skin to treat wounds and for snakebites. The bark is also used to treat domestic animals. Ash from burnt roots' is rubbed into small incisions made on the temple and forehead relieves headache. A characteristic smell of oil from root scrapping is said to drive away snakes. The tree is one of the most valuable sources of nectar. Poles are said to be termite- and rot-resistant.



Senna alexandrina

(*Cassia alexandrina*)

Fabaceae



Indigenous

Af: *Sanu*

Or: *Muka-arba*

Ag: *Senno*

Sm: *Jelalo-jel*

Eng: *Alexandrian senna*

Tg: *Seno, Utekki*

Ecology

A shrub in semi-desert scrub, *Acacia-Commiphora* bushland and grassland, particularly on floodplains and shorelines.

This species grows from central Sahara eastwards to India and southwards to Kenya. It is found in Dry and Moist Bereha and Dry and Moist Kolla agroclimatic zones of eastern Welo and Harerge regions and in the Afar plains, 0–1,000 m.

Uses

Farm tools, medicine (leaves, pods), soil conservation.

Description

An annual woody herb or shrub, 1–4 m, with few branches, hairy when young.

LEAVES: Compound, on stalks 5–15 cm, with 4–9 pairs of grey-green leaflets, each narrow oval 2–6 cm, shortly stalked, slightly hairy, the tip sharply pointed.

FLOWERS: In erect spikes 5–30 cm long, 5 greenish sepals overlap 5 bright orange-yellow petals with well-marked veins, 10 stamens of three sizes. **FRUIT:** Flat oblong pods, papery cream-yellow, 3–7 cm long, slightly curved, dark flat seeds are visible inside, finally set free when pod splits.

Propagation

Seedlings, wildings

Seed

Treatment: No need

Storage:

Management

Need to reduce lower branches to get better stem growth.

Remarks

There are two varieties in Ethiopia. A traditional and widely used purgative, variety *alexandrina* is grown commercially in the Sudan and India. In the Sudan, the crop grows on poor sandy soils with some irrigation.



A. Birnie

Senna didymobotrya

(*Cassia didymobotrya*)

Fabaceae



Indigenous

Eng: *Candle bush*

Or: *Asene meka*

Ecology

A small bush of montane wooded grassland, evergreen thicket and bushland, often riparian, or in disturbed places. Found in Dry and Moist Kolla and Weyna Dega agroclimatic zones of Arsi, Sidamo, Wolega, Shewa and in the western part of Welo, 1,400–2,400 m.

Uses

Firewood, medicine (leaves, stems, roots), mulch, soil conservation.

Description

An attractive bushy shrub 1–5 m, young stems quite hairy. **LEAVES:** Compound on spreading stalks to 30 cm, without glands, characteristic leafy stipules at the base over 2 cm long, heart-shaped and pointed, 8–18 pairs of oval hairy leaflets to 6 cm long, each with a rounded apex bearing a clear, stiff, hair-like tip. Crushed leaflets have peculiar bitter smell. **FLOWERS:** On erect stalks to 30 cm, in dense clusters, conspicuous as thin shiny brown sepals overlap and cover the rounded buds. Below each bud is a leafy bract. Open flowers at the base of the head have bright yellow petals over 2 cm long, the stamens of 3 sizes with straight stalks. **FRUIT:** Oblong, dark-brown pods, to 12 cm by 2 cm across, flattened with sections across holding the flat seeds. Pods break open when dry.

Propagation

Wildings, seedlings, direct sowing at site.

Seed

Contained in flat pods; collect and crush.

Treatment: Not necessary.

Storage: Store in sealed containers in a cool place.

Management

Remarks

The leaves, pods and roots are poisonous so caution when used as medicine. The bark contains tannin. The leaves can be used as fish poison. Good to grow around the home.



Photo: Patrick Maundu



Photo: Patrick Maundu



A. Bitnie



Senna siamea

(*Cassia siamea*)

Fabaceae



S. E. Asia

Am: *Yeferenji digita*

Eng: *Ironwood, Kassod tree*

Ecology

Cultivated all over the tropics from subhumid to semi-arid and even arid zones. Prefers a high water table and grows in Dry and Moist Kolla agroclimatic zones. Tolerates a variety of soils, but does better in light to medium ones.

Uses

Firewood, charcoal, timber, furniture, poles, medicine, bee forage, shade, ornamental, mulch, soil conservation, windbreak.

Description

An evergreen ornamental tree to 15 m, often shrub-like. **BARK:** Smooth, pale grey-brown. **LEAVES:** Compound, with 4–16 pairs of leaflets, oblong, round at base and tip which may be notched, dark, shiny green above, stalk to 30 cm, grooved. **FLOWERS:** Pale yellow in dense heads to 20 cm long, each flower 3 cm across. **FRUIT:** Pods in dense cluster, flat yellow-brown and smooth, slightly curved, 20 seeds within.

Propagation

Seedlings, wildings, direct sowing at site.

Seed

Prolific seeder. About 39,000 seed per kg.

Treatment: Stored seed: Pour hot water on seed, allow to cool and soak for 24 hours. Fresh seed requires no pretreatment. Seed should be sown in areas with full sunlight as the slightest shade reduces germination.

Storage: Seed can be stored in airtight containers but germination rate falls with time.

Management

Fast growing. Lopping, coppicing.

Remarks

An earlier name of this tree was *Cassia siamea*. The tree is fast growing and since it is not browsed, is easy to establish. Foliage is poisonous to pigs but not to cattle or sheep. Competes with crops and is susceptible to powdery mildew attacks on the leaves. It is termite-resistant. Coppices well. The dense wood makes good firewood, although the fire is smoky.



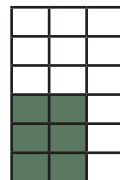
Photo: Patrick Maundu



A. BIRNIE

Sesbania sesban

Fabaceae



Indigenous

Am: *Girangire*

Eng: *River bean, Egyptian rattle pod*

Or: *Enchini, Harcha*

Sd: *Rakile lo'od, Get beyo*

Tg: *Tetem agazen, Shashata*

Ecology

One of many useful African *Sesbania* spp. which survive waterlogging and fix nitrogen. Naturally distributed from Senegal to Somalia and south to South Africa. Cultivated throughout tropical Africa and Asia. It is found at the margin of fresh-water lakes and seasonal ponds. Some types tolerate acid and saline soils. Easy to establish even in waterlogged soil and dry eroded soil. In Ethiopia, it performs well in Moist and Wet Bereha, Kolla and Weyna Dega agroclimatic zones of Afar plains and in nearly all other regions, 300—2,000 m.

Uses

Firewood, poles, medicine (ground leaves), fodder (leaves), shade (young coffee), mulch, nitrogen fixation, soil improvement, soil conservation, fibres (young stems), soap (leaves).

Description

A deciduous, short-lived shrub or tree to 8 m. BARK: Red-brown, young shoots hairy. LEAVES: Compound to 12 cm long, 10–25 pairs of leaflets, each leaflet to 2 cm oblong, tip notched, narrow. FLOWERS: Pale yellow, speckled maroon, in few-flowered sprays to 15 cm long. FRUIT: Abundant bunches of thin pale brown pods to 20 cm, with separated sections so seeds rattle within.

Propagation

Wildings, direct sowing at site.

Seed

The species is a prolific seeder with a high germination rate. About 110,000 seed per kg. Germination about 80 %.

Treatment: Not necessary for fresh seed, soak stored seed in cold or tepid water for 24 hours before sowing.

Storage: Seed can be stored for long periods if kept in a cool and dry place, but best germination from fresh seed.

Management

Very fast growing. Pruning, short rotation.

Remarks

The species may harbour root-knot nematodes. The genetic diversity of *Sesbania* types allows for selection (e.g. for different uses, management, soil types).

The leaf mulch and nitrogen-fixation features make this a tree of great potential for intercropping and thereby soil improvement on small farms.



Photo: Patrick Maundu



Spathodea campanulata

(*Spathodea nilotica*)

Bignoniaceae



East, Central and West Africa

Eng: *African tulip tree, Flame of the forest, Nandy flame*

Ecology

A decorative tree of forest fringe and a pioneer species, common from Uganda to West Africa, and widely planted throughout the tropics from 2,000 m down to sea level. Once established it is drought resistant. It does well in Dry and Moist Bereha and Dry, Moist and Wet Kolla and Weyna Dega agroclimatic zones.

Uses

Firewood, charcoal, timber (carving), medicine (bark), ornamental, shade, mulch, windbreak.

Description

A deciduous tree but bare many months, crown rounded, usually 10–15 m. **BARK:** Pale grey-brown and smooth, rough with age. **LEAVES:** Compound to 40 cm long, 6 pairs of leaflets, each wavy, tip pointed plus a central leaflet. Yellow-brown hairs on shoots, buds, branchlets and underside of leaves. **FLOWERS:** Fiery orange-red clusters stand out all over the tree, a yellow edge on the frilly petals; a yellow-flowering variety exists. Furry buds contain watery liquid. **FRUIT:** Brown woody capsules to 25 cm split on the ground releasing many flat winged seeds.

Propagation

Seedlings, wildings.

Seed

Collect the pods after they turn brown and leave them to air dry until they split open. Good seed germination rate. About 150,000 seed per kg. Seeds are light and care needs to be taken while watering and mulching seedbeds.

Treatment: Not necessary.

Storage: Seed does not store well; it should be sown fresh.

Management

Fairly fast growing, pollarding. Coppicing on good sites but only when young.

Remarks

Not browsed by domestic animals. A popular decorative tree for avenues.



Steganotaenia araliacea

Apiaceae



Indigenous

- Agn:** *Urao*
Am: *Temene, Etse, Menabe*
Brt: *Sheget*
Eng: *Violet tree, Carrot tree*
Gmz: *Sikida*
Nur: *Leele*
Or: *Jirma-jales, Etse Menabele, Shenkore*
Shn: *Sigida*
Sm: *Gbed-bidanie*
Tg: *Antrokohela, Endur, Benkala, Moad*
Wt: *Sangano*

Ecology

A small savannah tree occurring over a wide range of altitude, especially in low-altitude woodland or on rocky outcrops. It occurs in Dry and Moist Bereha, Kolla and Weyna Dega agroclimatic zones of Gojam, Ilubabor, Shewa, Harerge, Sidamo, and Gamo Gofa, 400–1,900 m.

Uses

Firewood, farm tools, medicine (roots).

Description

A small deciduous shrub or tree, 2–7 m. BARK: Yellow-grey-green, rather waxy, peeling in papery strips or rectangles, later grey-brown, thick and corky, horizontally grooved. LEAVES: Crowded towards the ends of the few branches, compound, 2–3 pairs of leaflets plus one, spaced on a stalk to 10 cm, the base expanded around the stem. Each leaflet ovate, to 5 cm, sometimes stalked, the edge clearly toothed, each tooth bearing a fine hairy point. FLOWERS: Small, green-white, in rounded compound clusters at the end of stout twigs, quite showy as they appear before the leaves; 3–7

long stalks arise together and each bears a crown of small heads (umbels) about 8 cm across. Individual flowers on stalks 5 mm long may be male only, the stamens longer than the 5 petals. FRUIT: In large untidy clusters, cream-brown and papery, each fruit flat and heart-shaped to 12 mm, winged each side with 3 ribs. Fruit dry on the tree splitting to release seed.

Propagation

Seedlings.

Seed

Germination in 11 – 14 days, continues for additional two weeks. About 125,000 seed per kg.

Treatment: Not necessary.

Storage:

Management

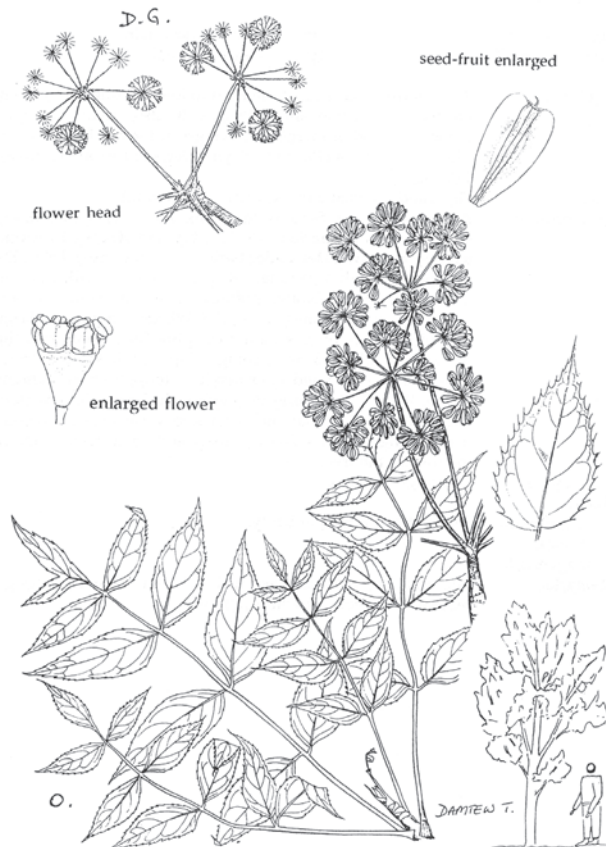
Fast growing, coppicing.

Remarks

The wood is soft and brittle. Stems are hollow.



Photo: Patrick Maundu



Sterculia africana

Sterculiaceae



Indigenous

Agn: *Uriemo*

Mjr: *Gedem*

Tg: *Darle*

Ecology

A common tree of Central and Southern Africa occurring in most types of woodlands and in hot dry areas on rocky hills or the fringes of woodlands where the bare-branched tree with pale bark stands out. In Ethiopia, it grows in moist flat lowland in Dry to Moist Bereha and Kolla agroclimatic zones of Welo, Shewa, Gambella, Benishangul-gumuz, Hararge, Bale, Afar and Gofa, 0-1,400 m.

Use

Its gum is used as additive to medicines. The wood could be used for fuelwood and fencing, pulp, paper and cheap furniture.

Description

A deciduous tree with a thick, fluted trunk, usually 5-12 m but may reach 25 m, the erect branches spreading to a rounded crown. Branches soft and brittle. **BARK:** Smooth, often shiny white, later flaking irregularly into patches to reveal a beautiful purple-green-white-brown under-bark. **LEAVES:** Crowded at the tips of branches, deeply divided with 3-5 lobes, over 10 cm across, on a stalk to 10 cm, lobes pointed. **FLOWERS:** Appear on the bare tree, sexes separate on the same tree, in branched heads to 9 cm, green-yellow sepals (no petals) joined together, 2.5 cm across with red honey-guide lines within. **FRUIT:** 1-5

woody beaked sections, boat-shaped, with short yellow hairs. One side only breaks open to set free 3-10 flat, blue-grey seeds which hang like ticks around the open edge.

Propagation

Seedlings, cuttings, truncheons (large woody cuttings).

Seed

About 24,000 - 28,000 seed per kg.
Germination up to 65 % after 20 days.

Treatment: Not necessary.

Storage: Can retain viability for a couple of months at room temperature.

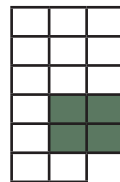
Management

Pruning, coppicing.



Stereospermum kunthianum

Bignoniaceae



Indigenous

Ag: *Arezana*

Agn: *Chipolo*

Am: *Arsinia, Hultabsa, Washta, Zana*

Or: *Botoro, Buturu, Utro*

Tg: *Adi-zana, Gunki*

Ecology

An attractive flowering tree distributed from Ethiopia south to South Africa and from low to high altitudes. In Ethiopia, it occurs at medium to low altitudes, frequently on rocky outcrops and hillsides, in open woodlands and at margins of evergreen forests. Does well in Moist and Wet Kolla and Weyna Dega agroclimatic zones in nearly all regions, 1,000–2,400 m.

Uses

Firewood, medicine (bark, fruit), ornamental.

Description

A deciduous tree, 5–13 m, the trunk waved or spiral, rarely straight, crown rounded.

BARK: Grey and flaking in round patches to show paler under bark (like a gum tree). **LEAVES:** Compound, with 4 pairs of leaflets plus one on a stalk to 7 cm, each leaflet oval-oblong, pointed to 8 cm, young leaves sometimes toothed and hairy.

FLOWERS: Fragrant in large drooping heads on the bare tree, pink-lilac-dark pink, the bell-shaped tube to 3 cm opening to 5-petal lobes, 4 cm across, lobes marked with red lines inside, 2 long, 2 short stamens inside. **FRUIT:** Very long thin

cylindrical capsules, twisted, red-brown to 45 cm but only 1 cm across. They split to release many winged seeds 2–3 cm long and then remain many months on the tree.

Propagation

Seedlings.

Seed

Collect before the capsule splits open otherwise the seeds will be blown away.

About 35,000 seed per kg.

Treatment: Not necessary, the germination is fast, but the germination rate is often low.

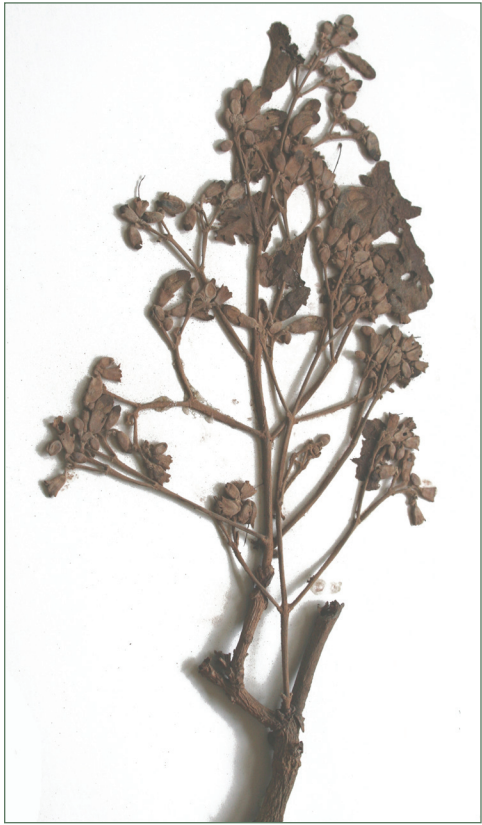
Storage: Can be stored for some months at room temperature.

Management

Fast growing, coppicing, pollarding. Produces root suckers.

Remarks

The fruit capsules, chewed with salt, are used as a cough remedy. The wood is white-yellow.



Strychnos henningsii

Loganiaceae



Indigenous

Eng: *Coffee-bean strychnos*

Sm: *Hadesa*

Ecology

Found in Sudan, Ethiopia and Somalia south to South Africa in dry forests, along riverbanks, in scrub as well as coastal forests. In Ethiopia, it is a small shrubby tree found in Dry and Moist Kolla and Weyna Dega agroclimatic zones of Ilubabor, Sidamo and Bale, m. 500–1,850 m.

Uses

Firewood, posts, tool handles, medicine (roots, fruit, bark), live fence.

Description

A very variable tree, usually dense and rounded to 5 m, occasionally to 20 m. BARK: Pale grey-brown then darker. LEAVES: Leathery, shiny above, quite sticky, broadly oval to 6 cm, 3 strong veins from the base and net veins clear also, tip usually sharp. Each pair of leaves at right angles to the next pair along the stem. FLOWERS: Small, cream-yellow, in dense heads. FRUIT: Round, fleshy orange then purple about 1 cm, the thin pulp containing 1–2 seeds, each grooved like a coffee bean.

Propagation

Seedlings.

Seed

Treatment: Pulp should be removed from the seeds before sowing.

Storage: Can be stored for some time.

Management

Produces root suckers. Coppicing, pruning.

Remarks

Heavy, termite-resistant and durable heartwood which makes it good for fence posts. Bark and fruit contain bitter alkaloids.

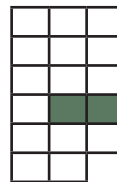


Photo: Patrick Maundu



Strychnos innocua

Loganiaceae



Indigenous

Agn: *Adiiquala leach*

Am: *Inguachia, Merenz, Amburqa*

Gmz: *Oola*

Sh: *Oola*

Sm: *Mungule*

Tg: *Unguaka, Unguak-hebay*

Ecology

Found nearby in Uganda and more rarely in Kenya, from West Africa east to Ethiopia and south to Angola, Zimbabwe and Mozambique. In Ethiopia, it is a shrubby tree which occurs in open woodland and on rocky hills in Moist and Wet Weyna Dega agroclimatic zones in Gojam, Ilubabor, Kefa, and Sidamo, 600 – 1,100 m.

Uses

Food (fruit), firewood, local tools, flavouring (additive to local brew).

Description

A shrub or small straight-stemmed tree, usually 3–6 m and some times up to 10 m, without spines. Branches are often twisted and branchlets hang down. BARK: Pale grey, smooth. Branchlets powdery grey-green to yellow-brown. LEAVES: In opposite pairs, widely spaced apart, tough, dull blue-green, with 3–5 main veins and clear net veining, both sides similar, oblong but wider at the rounded tip, 4–10 cm long. FLOWERS: 8 mm long, green-cream, 2–4 in stalked clusters beside leaves, calyx shorter than petals, a ring of white hairs in the throat. FRUIT: Round, with a thick woody shell, about 5–7 cm across, blue-green ripening yellow-orange, containing many seeds in pulp.

Propagation

Seedlings and wildings

Seed

Treatment: Soak the fruit in cold water for 24 hours and water for 24 hours and macerate the flesh.

Storage: Can store well for one year in an air-tight container kept in cold place.

Management

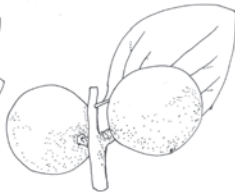
Stem reduction, pruning.

Remarks

It makes excellent firewood that burns even without drying. Seeds are loved by seed borer insects.



Photo: Patrick Maundu



Strychnos spinosa

Loganiaceae



Indigenous

Am: *Merenz*

Eng: *Natal orange, Spiny monkey orange*

Tg: *Gura, Lokua*

Sm: *Delebdoi, Deleddor*

Ecology

A semi-evergreen shrub found all over tropical Africa. It grows in a wide variety of dry woodland and savanna forests, frequently on sandy soils of river banks. In Ethiopia, it grows in Dry, Moist and Wet Kolla agroclimatic zones in Ilubabor, (600—700 m). Tigray, Shoa, Somaliland and Illubabor.

Uses

Firewood, charcoal, timber (furniture, boxes), food (fruit), medicine (fruit, leaves, bark, roots), fodder (leaves), musical instruments (dry fruit shell).

Description

A semi-deciduous thorny tree, often multi-stemmed, 2–5 m, up to 9 m, crown rounded. BARK: Grey-brown, rough, with black-tipped thorns, short and hooked, in pairs, along the branches. LEAVES: Opposite, oval to round, to 10 cm, shiny green and leathery, edge wavy, 3–5 veins from the base. FLOWERS: Small, cream-green-white, in bunches at the end of branches. FRUIT: Round and woody, green then yellow-brown when ripe, to 12 cm across, conspicuous and hanging many months on the tree, 10–100 flat seeds lie in juicy, rather acid but edible flesh.

Propagation

Seedlings.

Seed

The fruit has a hard coat that needs to be cracked to extract the seed. About 1,800 seed per kg.

Treatment: Immerse in hot water, allow to cool and soak for 24 hours, macerate it to release the seeds.

Storage: Can be stored. Protect from stem borer insects.

Management

Produces root suckers from exposed roots or injured roots.

Remarks

Although the fruit is edible, seeds are toxic and unripe fruit may be also. The fruits are often eaten by wild animals. The wood is straight grained and planes well.

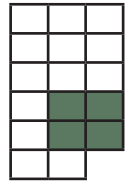


Photo: Patrick Maundu



Syzygium guineense

Myrtaceae



Indigenous

Ag: *Awlish, Bagootsi*

Agn: *Liu*

Am: *Dokma*

Brt: *Anzum*

Eng: *Waterberry*

Gmz: *Banjaha*

Gr: *Dokima*

Or: *Badessa, Gosu*

Sd: *Duwancho*

Sh: *Dequa*

Wt: *Badessa, Ochicha*

Ecology

A large tree widely distributed in Africa. It prefers moist soils with a high water table beside rivers, but will also grow in open woodland. In Ethiopia, it does very well in Moist and Wet Kolla and Weyna Dega agroclimatic zones of all regions, 1,200—2,600 m. There are several subspecies in Ethiopia.

Uses

Firewood, charcoal, timber (general construction, furniture), poles, tool handles, carvings, food (fruit), tea substitute (leaves), medicine (bark, roots, leaves), bee forage, dye and tannin (bark).

Description

A densely leafy forest tree, usually 10–15 m but up to 25 m, the trunk broad and fluted and the crown rounded and heavy, the branchlets drooping, the stems thick and angular. **BARK:** Smooth when young, black and rough with age, flaking, producing a red watery sap if cut. **LEAVES:** Young leaves purple-red, but mature leaves dark green, in opposite pairs, shiny and smooth

on both surfaces, the tip long but rounded, on a short grooved stalk. The leaves are variable in shape. **FLOWERS:** White, showy stamens, in dense branched heads 10 cm across, the honey-sweet smell attracting many insects; stalks angular, square. **FRUIT:** Oval to 3 cm, purple- black and shiny, one-seeded, in big bunches of 20–30.

Propagation

Seedlings, wildings, direct sowing at site.

Seed

Good germination. About 2,400–3,700 seed per kg.

Treatment: Not necessary but remove flesh and wash in water before sowing.

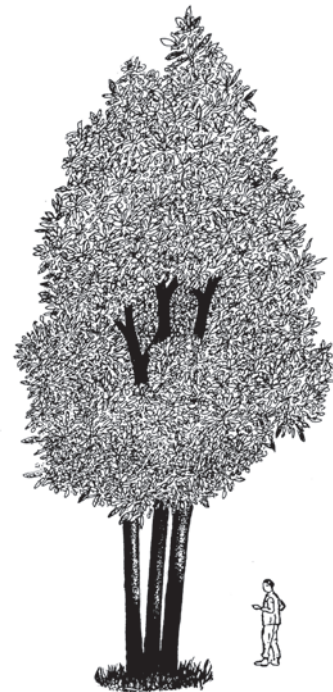
Storage: Must be sown immediately the fruit is picked. Germination is reduced with any attempt to dry and store the seed.

Management

Pollarding, coppicing.

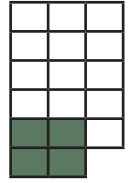
Remarks

The wood is brown, hard and strong. It is easily worked but liable to split. Seeds available from June to September.



Tamarindus indica

Fabaceae



Indigenous

Am: *Humer, Roka*

Eng: *Tamarind*

Or: *Roka*

Sm: *Humer, Roqa*

Tg: *Humer*

Ecology

Indigenous to tropical Africa; widely used in the Sahel, India, South East Asia, the Caribbean and Central America. A very adaptable species, drought hardy, preferring semi-arid areas and wooded grasslands, tolerating salty, coastal winds, even monsoon climates. Grows in most soils, but prefers well-drained deep alluvial soil; often riverine in very dry areas. In Ethiopia, it occurs in Bereha and Dry and Moist Kolla agroclimatic zones of most regions, 0-1,500 m.

Uses

Firewood, charcoal, timber (furniture, boats, general purposes), poles, food (fruit pulp for drink, fruit, spice), medicine (bark, leaves, roots, fruit), fodder (leaves, fruit), shade, ornamental, mulch, nitrogen fixation, windbreak, tannin (bark).

Description

A large tree to 30 m, with an extensive dense crown. The short bole can be 1 m in diameter. Evergreen or deciduous in dry areas. **BARK:** Rough, grey-brown, flaking. **LEAVES:** Compound, on hairy stalks to 15 cm, 10–18 pairs of leaflets, dull green to 3 cm, oblong, round at the tip and base, veins raised. **FLOWERS:** Small, in few-flowered heads, buds red, petals gold with red veins.

FRUIT: Pale brown, sausage-like, hairy pods, cracking when mature to show sticky brown pulp around 1-10 dark brown angular seeds.

Propagation

Seedlings, wildings, direct sowing at site, grafting and budding for best varieties. Choose good mother trees for vegetative propagation.

Seed

350—1,400 seed per kg. Germination rate around 90%.

Treatment: Soak seed in cold water for 12 hours or nick the seed.

Storage: Seed can be stored for more than two years if kept in a dry, cool and insect-free place.

Management

Slow growing but long lived. Pollarding, coppicing.

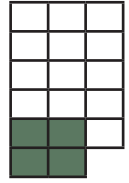
Remarks

The dark brown heartwood is hard and heavy, well grained and easy to polish. The fruit pulp is rich in vitamin C. The fruit has many uses and important for nutrition in many parts of the world, including India. It is budded and grafted on a large scale in the Philippines. Recommended for homesteads.



Tamarix aphylla

Tamaricaceae



Indigenous

Af: *Segentu*

Eng: *Athel tree, Leafless tamarisk, Salt cedar, Tamarisk*

Sm: *Dokon, Dur*

Tg: *Obel, Ubul*

Ecology

This family, mainly of shrubs, is centred in the Mediterranean area. The species, *T. aphylla* is a tree of humid lowland savannah and woodlands as well as open floodplains and along rivers. It is common in the Middle East, extending to north-west India. In Ethiopia, it is usually found with *Acacia albida*, *Balanites* and *Tamarindus* in Bereha and Dry Kolla agroclimatic zones of Welo, Hararge, Shewa and Sidamo, from sea level to 900 m.

Uses

Firewood, charcoal, timber (general purposes), fodder (leafy branchlets), mulch, soil conservation, soil improvement, dune fixation, windbreak, firebreak.

Description

A well-branched evergreen shrub or tree to 9 m. The irregular grey-green crown is rather like that of a conifer. BARK: Light grey to red-brown, becoming thick and rough, deeply ridged. Branches smooth purple-brown. LEAVES: Sprays of slender green-grey branchlets or twigs, very drought hardy, have the function of usual green leaves. Leaves remain as 2 mm scales, encircling the branchlets, each with a sharp tip and appearing as one section along the jointed twig. FLOWERS: At the tips of

branchlets, about 15 cm long, each one less than 3 mm, pink-white, with 5 floral parts. FRUIT: Many narrow pointed capsules, 5 mm, splitting into 3 to release tiny brown seeds each with a tuft of white hairs.

Propagation

From cuttings of the previous year's growth.

Seed

Treatment: No need.

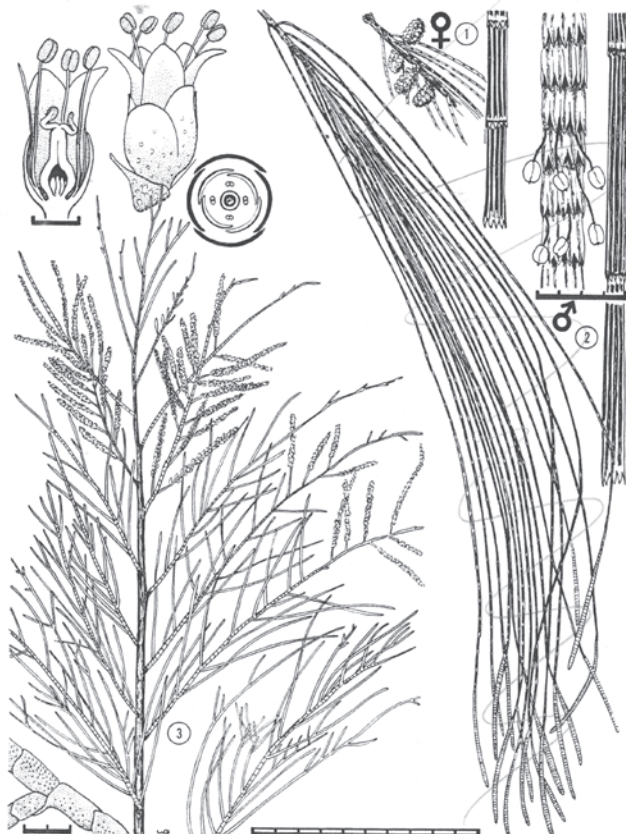
Storage: Seeds lose viability within a few days so trees are normally established by cuttings.

Management

Coppicing.

Remarks

Like other tamarisk, it excretes "salt" which drips from glands in the leaves at night to cover the soil beneath. This salty drip kills any plants under the tree and the fallen leaves are too salty to burn — hence use of this tree as a firebreak. Crops should not be planted close to tamarisk as it can out-compete them for water and plant nutrients in the root zone.



Terminalia brownii

Combretaceae



Indigenous

Am: *Abalo, Weyeba*

Eng: *Brown's myrobalan*

Ga: *Galaldo*

Nur: *Bukwe*

Or: *Alulo, Berensa, Baresa, Birecha*

Sm: *Alulo, Woube*

Wt: *Hare Haiyita*

Ecology

This is one of the very useful trees of semi-arid areas in the Democratic Republic of Congo, Kenya, Nigeria, Sudan, Ethiopia and Somalia. Probably the commonest and most widespread *Terminalia* in Ethiopia, found in deciduous woodland, bushland, wooded grassland and riverine vegetation. One of a very useful group of trees growing in semi-arid areas. Often associated with *Combretum* and other *Terminalia* spp., 300–2,000 m. It does best in well-drained soils. In Ethiopia, it does well in Dry, Moist and Wet Kolla and Weyna Dega agroclimatic zones of Tigray, Gondar, Welo, Shewa, Harerge, Arsi, Bale, Sidamo, Gamo and Gofa.

Uses

Firewood, charcoal, timber (tool handles, mortars, pestles), poles, posts, medicine (leaves and bark), fodder (leafy branches), mulch, soil improvement, shade, dye.

Description

A semi-deciduous tree, 7–13 m, densely shady, somewhat layered, foliage drooping. **BARK:** Grey, fissured, young shoots hairy. **LEAVES:** Oval, 7–10 cm, wider at the tip, pointed or notched, edge wavy, side

veins clear, leaf stalk and under-leaf hairy, leaves turn red before falling. **FLOWERS:** Whitish, unpleasant smell, in spikes to 12 cm. **FRUIT:** A winged oval seed, red to purple, 5 cm, tip rounded or notched, narrowed to base.

Propagation

Seedlings, wildings.

Seed

Prolific seeder, but a low germination rate. Tree seeds more or less continuously. About 3,000 seed per kg.

Treatment: Remove wings and soak in cold water overnight.

Storage: Seed can be stored for very long periods if insect free.

Management

Fairly fast growing on good sites. Lopping, pollarding, coppicing.

Remarks

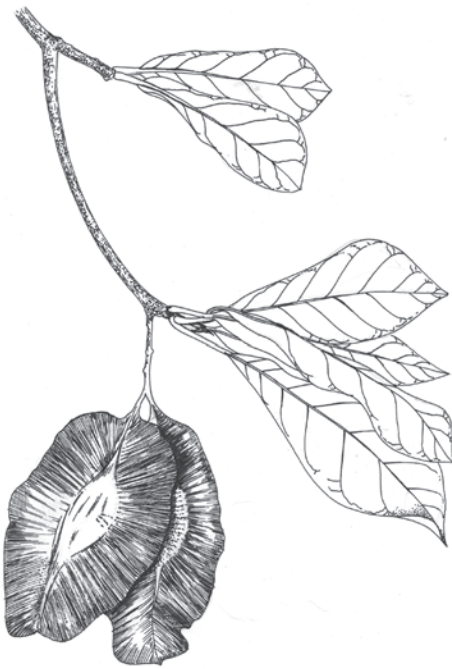
Terminalia timber is yellow–brown, medium hard, light and termite resistant and thus highly valued for house construction, poles, utensils and for building grain stores. In spite of its dense canopy, crops do well underneath it. A very useful tree in semi-arid areas because it is resistant to termites and drought once established.



Photo: Patrick Maundu



Photo: Patrick Maundu



Terminalia laxiflora

Combretaceae

Indigenous

Agn: *Pok*

Am: *Baguri*

Mjr: *Jukul*

Or: *Debeke*

Sh: *Baguwa*

Ecology

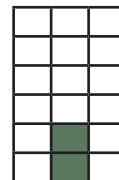
This tree grows in Moist Bereha and Kolla agroclimatic zones in Gojam, Gambella, Benishangul-Gumuz, Gondar and Ilubabor within altitude ranges 400-1,500 m, annual rainfall 1,400-2,000 mm.

Use

Timber (house construction), utensils (for example pounding sticks), medicine (inner bark), bee forage.

Description

A large tree to a height of up to 15 m and a diameter of about 1 m. BARK: brownish, often fissured longitudinally. LEAVES: simple, alternate, margin entire, large in size about 9 cm wide and 20 cm in length, dark green inside and creamy green underneath, leathery, leaf petiole with distinct joint to the stem, hairy, about 3 cm long, protruding single midrib. FLOWER: creamy white, conspicuous like flowers of *Cordia africana*. FRUIT: in pods, 10 – 20 cm.



Propagation

Seedlings, Wildings

Seed

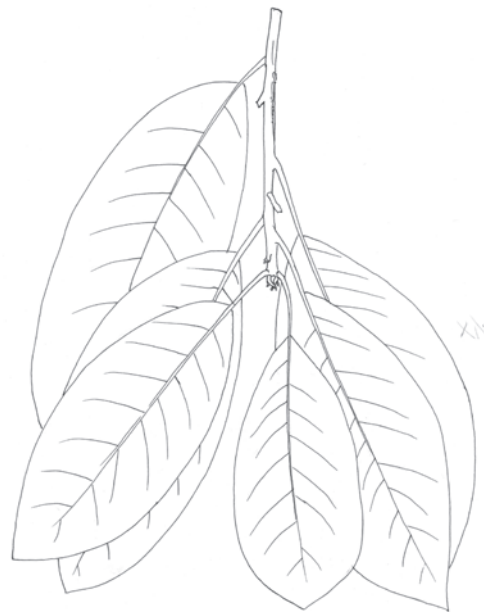
Treatment: Remove pod.

Storage: Can be stored if well dried and in insect-free containers.

Management

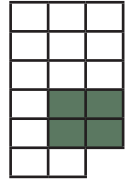
Remark

Flowers in June to September and fruits in October to November.



Trichilia dregeana

Meliaceae



Indigenous

Am: *Bonga*
Gm: *Desb*
Kf: *Luiya*
Or: *Komu, Luya, Shogo*

Ecology

This species occurs in mid-altitude rain forest in West Africa, and from Uganda and Ethiopia to South Africa. A large tree occurring in evergreen forest of the Moist and Wet Kolla and Weyna Dega agroclimatic zones of the southwestern and western highlands of Kefa, Wolega and Ilubabor, 1,100–2,200 m.

Uses

Firewood, timber (construction, furniture), shade.

Description

A very large evergreen tree to 30 m, with a straight trunk dividing into large branches and a rounded crown. **BARK:** Fairly thin and smooth brown with clear breathing pores (lenticels); when cut the bark edges are red and white. **LEAVES:** Compound with 4–6 pairs of leaflets plus one on a stalk, to 10 cm, each leaflet about 12 cm long, always wider towards the pointed tip, often rounded at the base. The 7–12 pairs of veins below are widely spaced with a few hairs. Leaves dry dark brown. **FLOWERS:** Few in branched sprays to 6 cm, each large flower with 5 cream-white hairy petals over 2 cm long, the 10 hairy stamens joined in a ring around the central style. **FRUIT:** A rounded capsule to 3 cm across, pink

to dull yellow-brown and hairy, without a neck to the fruit stalk, splitting into sections when dry to set free large black seeds which are almost covered by a soft red aril.

Propagation

Seedlings (sow seeds in pots), wildings.

Seed

Contained in a fruit capsule that spits open.

Treatment: Not necessary.

Storage: Sow immediately after collection.

Management

Coppicing, pollarding.

Remarks

The timber is susceptible to borer attack, but the pink wood is easily worked and polishes well. It has been used for carving.



DAMTEW T.

Trichilia emetica

Meliaceae



Indigenous

Am: *Mahogani*

Br: *Anona*

Eng: *Cape mahogany*

Ecology

An important tree throughout tropical Africa. It is found in savannah and prefers well-drained rich soil. In Ethiopia it is most frequently found in Dry and Moist Kolla agroclimatic zones of Gojam, Shewa, Hararge, Ilubabor, Gamo Gofa and Sidamo, 450–1,350 m.

Uses

Firewood, timber, furniture, tool handles, boats, poles, medicine (leaves, bark, roots, oil), shade, ornamental, windbreak, oil/soap (seed).

Description

An evergreen tree, 15–30 m, with dark hanging foliage, pyramid-shaped when young, later the crown is rounded and heavy, the trunk rather smooth. **BARK:** Grey-red-brown, finely grooved, later rough, scaling to show green under-bark. **LEAVES:** Compound, stalks and shoots softly hairy, 4–5 pairs of leaflets, thick and shiny, leaflets increasing in size up to the largest central leaflet which may be up to 16 cm long, the midrib below continues into an unusual hairy tip. Leaves dry green to pale brown, 11–18 pairs of veins below are close together. **FLOWERS:** Inconspicuous, fragrant clusters, cream-green, 5 thick petals around a hairy centre of stamens. **FRUIT:** Round, red-brown hairy capsules to 3 cm

across dry and split into 3–4 parts. A clear neck to 1 cm long (unlike *T. dregeana*) connects the capsule to the fruit stalk. Up to 6 shiny black seeds hang out of the open capsules, each one almost covered by a soft orange-red aril.

Propagation

Seedlings, direct sowing at site, wildings.

Seed

Collect capsules when they start opening, dry in the shade, shake out the seed. About 300 seed per kg.

Treatment: Remove the soft orange-red aril by soaking in cold water, use fresh seed for best results.

Storage: Seeds lose viability quickly and should not be dried or stored.

Management

Fairly fast growing, pollarding, coppicing.

Remarks

Seeds are extremely poisonous and should not be eaten but they contain useful oil. Leaves are said to have soapy properties. The pink-grey-brown timber is susceptible to insect attack.

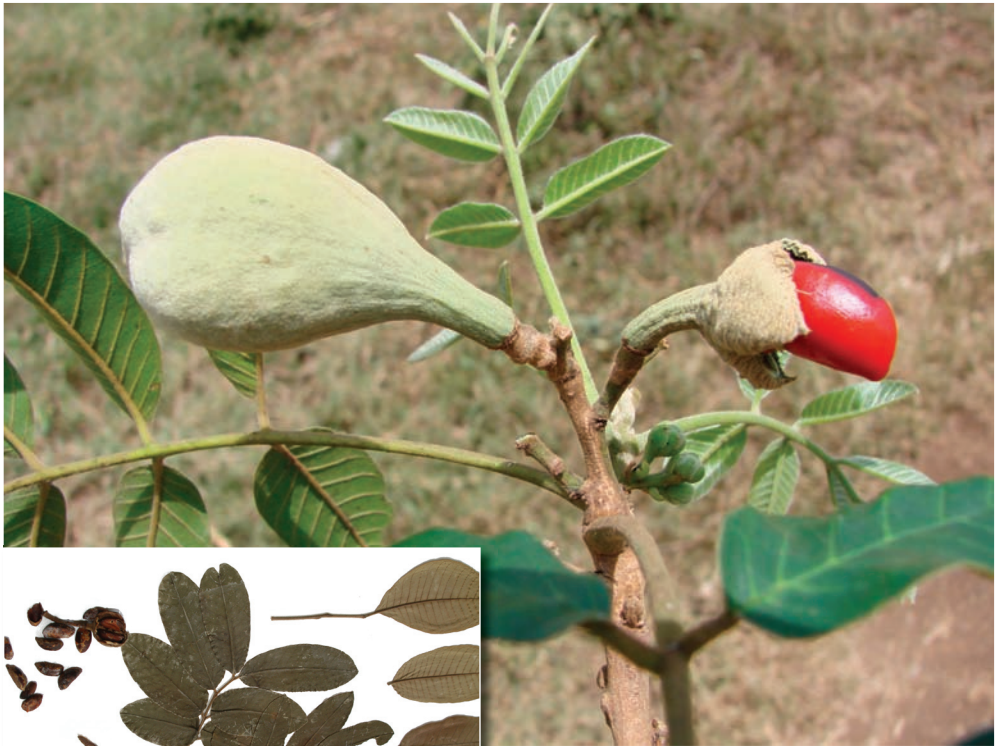


Photo: Patrick Maundu



Trilepisium madagascariense

(*Bosquiea phoberos*)

Moraceae



Indigenous

Am: *Chai*

Eng: *False fig*

Or: *Shero, Yuga*

Ecology

A tall forest tree that dominates the upper canopy of rain forests or grows as an understorey tree in the humid lower highland forests of Moist and Wet Kolla and Weyna Dega agroclimatic zones of Wolega and Kefa, 1,000 - 1,600 m.

Uses

Firewood, timber (light construction, furniture, floors, veneer, boxes), dye (sap).

Description

An evergreen tree, usually 20–30 m high, diameter usually 50–100 cm, with straight clean bole to a small rounded crown with drooping branches. BARK: Grey and smooth, when cut white latex drips out; outer part of the cut bark pink-red. The latex soon becomes violet and the whole area turns brown. LEAVES: Simple, alternate, tough and leathery, dark shiny green above to 12 cm on a stalk about 1 cm. The edge is rolled under and the looping veins join up below the edge. The narrow tip is drawn out about 1 cm. FLOWERS: Both male and female flowers develop inside the bell-shaped receptacle, about 1.5 cm long. Receptacle has a wide opening and stamens like a cream-mauve brush hang out, about 1 cm across. The

female parts are hidden inside. FRUIT: When ripe the fleshy oval receptacle, about 2 cm long, turns purple-black (false fig) contains a single seed in a hard nut.

Propagation

Seedlings, wildings, cuttings.

Seed

Treatment: Soak it in cold water for 24 hours and put in the sun. Macerate it to release the nut.

Storage: can store well if the nut is not cracked.

Management

Pruning, lopping, coppicing.

Remarks

The wood is perishable in the ground. The timber is pink-red, fairly straight grained and moderately strong. It is easy to plane, glue and nail.



Vepris dainellii

Rutaceae

Endemic

Or: *Addessa, Kulasa, Meddesa*

Ecology

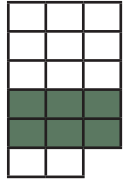
One of four *Vepris* spp. in Ethiopia. This species is an understorey tree found only in Ethiopia. It often grows with *Podocarpus* or *Pouteria adolfi-friedericii* in montane forest. It extends into lowland *Celtis-Pouteria altissima* forest in Dry, Moist and Wet Kolla and Weyna Dega agroclimatic zones of Gojam, Wolega, Ilubabor, Kefa, Sidamo, Bale and Shewa regions, 1,050–2,000 m.

Uses

Firewood, timber (local furniture, farm tools).

Description

An evergreen shrub or small tree, 2–15 m high. **BARK:** Smooth and grey. **LEAVES:** Nearly always opposite along stem, on stalks to 12 cm, compound with 3 similar leaflets, each one leathery, long and narrow, 14–33 cm, the tip pointed, the base narrowed to a short stalk. **FLOWERS:** Tiny male and female flowers are found in large conical heads to 25 cm long at the tips of the branches. Petals are pink-white and female flowers have a stigma within the 4 petals. **FRUIT:** Bilobed soft fruit on branched stalks about 2 cm across, with glands.



Propagation

Seedlings, wildings

Seed

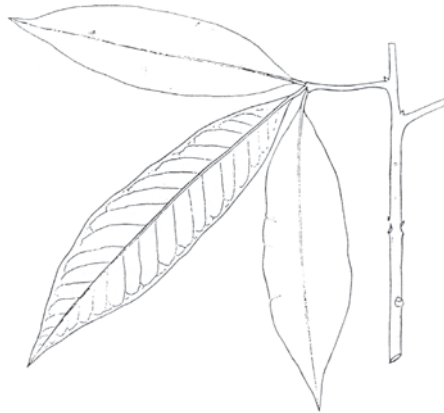
Treatment: No need.

Storage: Can store for a fairly long time.

Management

Remarks

Vepris species have very tough wood suitable for farm tools.

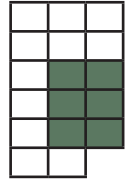


DAMTEW T.

Vepris nobilis

(*Teclea nobilis*)

Rutaceae



Indigenous

Ag: *Sila*

Am: *Atesa, Sni*

Eng: *Small-fruited teclea*

Kf: *Megeto, Mengereto*

Or: *Adessa, Begama, Chae*

Tg: *Tsihila*

Ecology

One of the largest trees in this genus, this tree is widely distributed in wet highland forests — often found with *Podocarpus* and *Juniperus* — extending from Ethiopia to South Africa. In Ethiopia, it grows well in Moist and Wet Kolla, Weyna Dega and Dega agroclimatic zones of nearly all regions, 900–2,800 m.

Uses

Firewood, charcoal, timber, poles, tool handles, clubs, walking sticks, medicine (leaves, roots).

Description

An evergreen shrub or tree 2–12 m or taller in rain forest with a crooked trunk and dark, spreading crown. BARK: Smooth, grey, with ring marks. LEAVES: Compound, 3 leaflets on stalks to 6 cm, leaflets dark shiny green, 5–15 cm long, tapering to the tip, edge wavy, midrib stands out below, leaf stalks and branchlets without hairs. FLOWERS: Very small, cream-yellow, fragrant, in loose sprays to 12 cm. FRUIT: Orange-red and smooth becoming wrinkled, very many on a branched stalk to 20 cm, each ovoid, pointed, 5–6 mm, containing one seed.

Propagation

Seedlings, wildings.

Seed

Not a prolific seeder. Low germination rate. About 20,000 seed per kg.

Treatment: Not necessary.

Storage:

Management

Moderate to slow growing, pruning, pollarding.

Remarks

The wood is tough and pale. It is valued for its strength and durability.



Vernonia amygdalina

Asteraceae



Indigenous

Ag: *Khokhitsi*

Am: *Grawa*

Eng: *Bitter leaf, Tree vernonia*

Gmz: *Banja*

Mjr: *Geshi*

Or: *Aebicha*

Sh: *Banja*

Ecology

Widely distributed throughout tropical Africa, in humid and sub-humid areas. Found in wooded grassland and at forest edges. Cultivated in West Africa for its leaves. In Ethiopia, it grows in sub-humid wooded savannah or wetter highlands in Dry, Moist and Wet Weyna Dega and Dega agroclimatic zones of Gojam, Wolega, Ilubabor, Shewa, Hararge, Arsi, Bale and Sidamo, 600 – 2,700 m. It is found on light shallow soils, often left in pasture land.

Uses

Firewood, charcoal, food (leaves), medicine (roots, bark, leaves), fodder, ornamental, mulch, soil improvement, live fence, toothbrushes (stems), stakes.

Description

A single-stemmed shrub to 3 m, sometimes a tree to 10 m with a wide bole. **BARK:** Pale grey, rather rough, flaking later, branches brittle. **LEAVES:** Ovate, up to 20 x 5 cm, tapering at both ends, dark green above, soft pale hairs below, edge may be widely toothed. **FLOWERS:** White-green, each only 6 mm across, in dense branching flattened heads to 30 cm across, sweet scented in the evening. **FRUIT:** Tiny seeds with stiff white hairs.

Propagation

Seedlings and cuttings.

Seed

About 850,000 seed per kg. Germinate in 10 days time, but germination rate often very low.

Treatment: Not necessary.

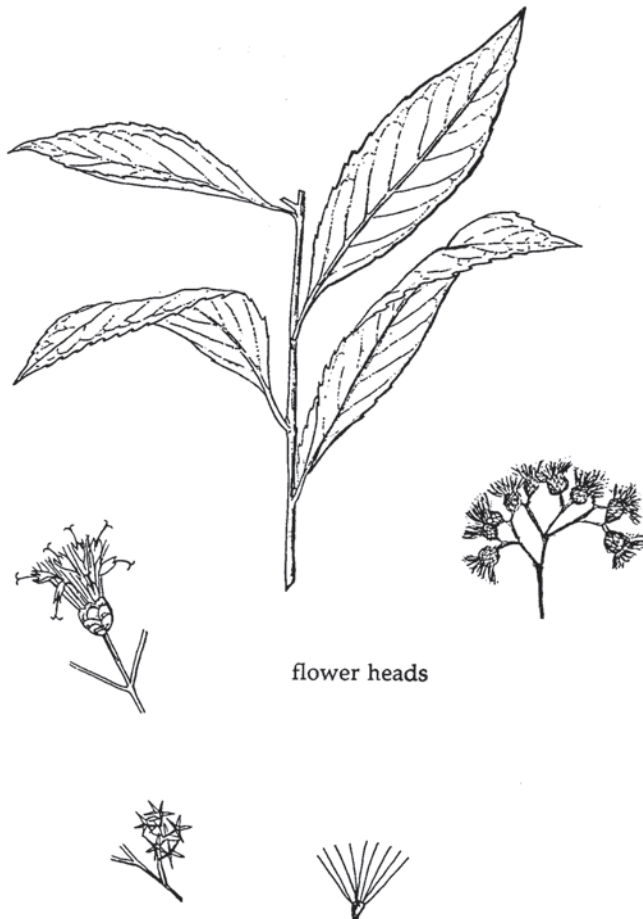
Storage: Often stores for short periods and loses viability gradually.

Management

Medium to fast growing, coppicing.

Remarks

The wood is strong and resists termite attack, making dried branches useful for fencing and as supports for earth works or stakes.

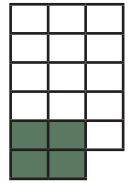


flower heads

Vitellaria paradoxa

(*Butyrospermum paradoxum*)

Sapotaceae



Indigenous

Agn: *Wedo*

Eng: *Shea-butter tree*

Ecology

This well-known and commercially important tree is restricted to the dry savannah and grassed woodlands of northern tropical Africa, from West Africa across Central Africa into Uganda and Ethiopia. In Ethiopia, it grows in Dry and Moist Bereha to Dry and Moist Kolla agroclimatic zones, 300 m, annual rainfall about 1000 mm.

Use

The fruit used as vegetable oil /butter for cooking and skin lotion. Has high potential for soap making. The wood is good for fuelwood.

Description

A small to medium deciduous tree 13-20 m, much branched to a dense rounded crown, the stout bole to about 4 m before branching. Lower branches often fall to the ground, others twisted and thick, with leaf scars. **BARK:** Easy to recognize: dark grey-brown-black, thick and rough, deeply fissured into rectangular shapes like a crocodile skin. **LEAVES:** Crowded at the end of very short, thick branchlets, covered with leaf scars. Young leaves are reddish, hairy. They becoming smooth, dark green and tough, oval-oblong about 20 cm long, tip rounded and base narrowed to a long stalk up to half the length of the leaf

blade, about 10 cm. **FLOWERS:** Small, cream-white and fragrant, appearing in dense clusters on short branchlets when the tree is almost bare. **FRUIT:** A large round green berry, 4-6 cm long. Inside sweet pulp surrounds a single shiny brown seed with a white scar on one side.

Propagation

From cuttings, seedlings and wildings.

Seed

Treatment:

Storage:

Management

Remarks

Flowers in January to February and fruits in last April to June. Initial fruiting takes some 10 years but may be shortened if propagated from cuttings.



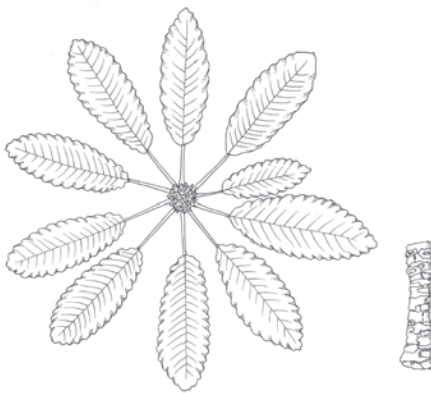
Photos: Patrick Maundu

Photos: Patrick Maundu

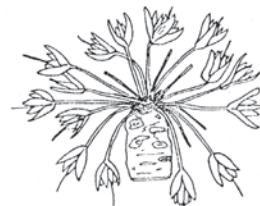
flower cluster



seed

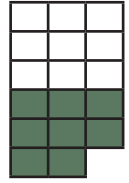


fruit



Vitex doniana

Verbenaceae



Indigenous

Am: *Plem*

Eng: *Black plum*

Gmz: *Kokora*

Sh: *Gorke*

Ecology

A semi-deciduous tree found in the more humid areas of tropical Africa, including the Comoro Islands, the Sudan and Ethiopia, and widespread in East Africa south to South Africa. In Ethiopia, the tree is found in *Combretum-Terminalia* woodlands and wooded grasslands, at low altitude in wetter areas and in upland grassland, and is also riverine in Dry and Moist Bereha and Dry, Moist and Wet Kolla and Weyna Dega agroclimatic zones of Gojam, Wolega, Kefa and Sidamo regions, 0–1,800 m.

Uses

Firewood, charcoal, timber (construction, furniture), poles, food (fruit), medicine (bark, leaves, roots, fruit), fodder (leaves, fruit), bee forage, shade, dye (bark).

Description

A semi-deciduous tree 8–18 m, with a heavy rounded crown, a straight clear bole and thick twisting branches. **BARK:** Smooth and pale at first, finely grooved, becoming darker and scaly. **LEAVES:** Opposite and compound, the 5 finger-like leaflets held up on a stalk to 15 cm. The 2 lowest leaflets smaller, each one wide and oblong to 14 cm, shortly stalked, tip rounded or notched, leathery and shiny. **FLOWERS:** Fragrant, in dense bunches to

12 cm across on a long stalk, each flower bell-shaped, hairy inside, 4 cream petals and one large petal blue-violet, hairy. **FRUIT:** Oblong to 3 cm, green marked with white, ripening red-black; thin edible flesh around a very hard nut which contains 1–4 seeds. The calyx remains around the fruit and curves back.

Propagation

Seedlings, direct sowing at site, wildings.

Seed

About 1,000–1,100 stones per kg. Each stone has 1–4 seed (multi-germ).

Treatment: Remove fleshy part of the fruit and immerse stone in warm but not hot water, allow to cool and soak for 24 hours. Without treatment seeds need a very long time to germinate.

Storage: Sow fresh for best germination results.

Management

Medium growth rate. Pruning. Several seedlings may germinate from one stone. Can be separated and pricked out.

Remarks

The species regenerates naturally by seed and root suckers. Monkeys may disperse the seeds. Forest fires may help break the seed coat before germination. The tree produces a yellowish-white termite resistant timber with an even grain and edible fruits which can be sold.



Photos: Patrick Maundu



Warburgia ugandensis

(*W. salutaris*)

Canellaceae



Indigenous

Am: *Kanafa, Zogdom*

Eng: *East African greenheart*

Or: *Befii*

Ecology

The natural range includes Democratic Republic of Congo, Ethiopia, Kenya, Malawi, Tanzania, Uganda and south to South Africa. Widely distributed in lower montane rainforest and drier highland forest areas. Also found in riverine forest. In Ethiopia, it is found in lower rain forest and drier highland forest areas in Moist and Wet Kolla and Weyna Dega agroclimatic zones of Bale region, only known from the Dolo-mena area and part of Harana Forest, 1,300—2,200 m.

Uses

Firewood, timber (furniture), tools, food (seasoning), medicine (bark, roots, young twigs), fodder (leaves, fruit), shade, ornamental, mulch, resin.

Description

An evergreen tree to 25 m with a dense leafy canopy. **BARK:** Rough brown-black, crack into rectangular scales. **LEAVES:** Shiny dark green above, midrib very clear below, edge wavy, to 10 cm long. **FLOWERS:** Inconspicuous, green-cream. **FRUIT:** Round to egg shaped, to 5 cm long on short stalks, green to purple with a waxy white surface, several seeds inside.

Propagation

Cuttings, seedlings, direct sowing at site, wildings.

Seed

The ripe fruit should be collected from the tree or shaken off the branches and collected from the ground. Fruit that has fallen to the ground rots easily. Germination rate may be over 80%. About 10,000—11,000 seed per kg.

Treatment: Wash the fruit and sow seeds fresh for best results.

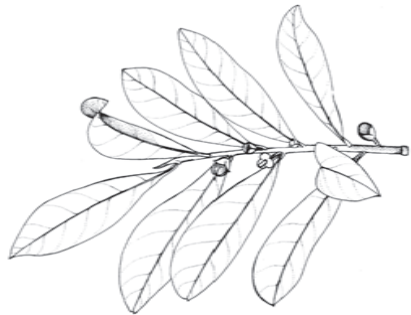
Storage: Seed should not be stored.

Management

Fairly slow growing. Coppicing.

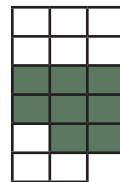
Remarks

After seasoning, the heartwood develops a slight greenish colour, which fades with exposure to light. The wood, though hard and heavy is not durable in the ground and not termite resistant. It has high oil content. The leaves, bark, young shoots and fruit can be used as a spice in curries and the roots in soup.



Woodfordia uniflora

Lythraceae



Indigenous

Or: *Marmarte*

Ecology

A shrub which usually grows along river banks, in dry *Juniperus* or *Combretum-Terminalia-Croton* woodlands on light grey loamy soil. It is also found on rocky hillsides and limestone slopes and is widespread in Gonder, Gojam, Kefa, Sidamo, Bale and Harerge regions in Moist and Wet Kolla, and Dry, Moist and Wet Weyna Dega and Dega agroclimatic zones of most regions, 1,200–2,500 m.

Uses

Firewood, farm tools and food (fruit).

Description

A much-branched shrub to 3 m high. BARK: Smooth grey with white scales distributed on it. LEAVES: Opposite pairs, long oval about 7 cm, the tip long and pointed, the base rounded, veins well marked below run to a vein parallel to the edge, dark green above, scattered black glands on paler leaf below. Leaves turn red. FLOWERS: Few-flowered in heads beside leaves, calyx tubular bearing 6 small orange-red petals, 12 orange-red anthers and red style push through. FRUIT: A small green capsule with a little white edible flesh surrounding 3–4 tiny seeds.

Propagation

Seedlings, cuttings.

Seed

About 500 seed per kg. Germination within 15 days. Seems contradictory!!

Treatment:

Storage: Can be stored for at least 6 months.

Management

Remarks

It has very tasty fruit.



enlarged flower



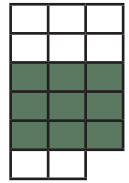
fruit capsule



SAMTEW T.

Ximenia americana

Olacaceae



Indigenous

Ag: *Tutuqa*
Am: *Inkoy, Kol*
Brt: *Viv*
Eng: *Hog plum, Wild plum*
Ga: *Hazte*
Gmz: *Meyo*
Or: *Awre-mudube, Hudi*
Sh: *Kula*
Sm: *Hudaye, Mandarut, Morhod*
Tg: *Mlehtta*
Wt: *Astie*

Ecology

A species with a pan-tropical distribution found in tropical America, Africa and Asia. Common throughout the African savanna. In Ethiopia, it occurs in Dry, Moist and Wet Kolla and Weyna Dega and Dega agroclimatic zones of all regions, 500–2,100 m. It may rarely be found in places up to 2,450 m.

Uses

Firewood, charcoal, timber (utensils), food (fruit), medicine (roots, bark, leaves), fodder, live fence.

Description

Usually a spiny shrub or small tree, 4–8 m. BARK: Brown-black; twigs bear small scales, spines, 1 cm, thin and straight. LEAVES: Alternate, simple or tufts, oblong, up to 7 x 3 cm, blue-grey-green, folding upwards along midrib, tip round or notched. FLOWERS: Very fragrant, small green-white (white hairs in throat) in small branched clusters. FRUIT: Oval to 2.5 cm, thin skin red, yellow to orange pulp, sour but refreshing, around 1 large seed containing oil.

Propagation

Seedlings, wildings.

Seed

About 1,400 seed per kg.

Treatment: Not necessary.

Storage: Seed cannot be stored for long periods. Sow fresh seed for good germination.

Management

Slow growing, coppicing. Trim if grown as a fence. Protect natural regeneration.

Remarks

A useful tree for arid and semi-arid areas as it is drought resistant. The wood is heavy, hard and very durable. The seed contains a non-drying oil suitable for soap and lubrication. In other countries it has also been used as body and hair oil and for softening leather.



Photo: Patrick Maundu

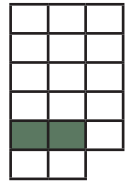


Photo: Patrick Maundu



Ziziphus mauritiana

Rhamnaceae



Indigenous

Am: *Qurqurah*
Br: *Kurkurrah*
Eng: *Jujube*
Nur: *Gaba, Gabi*
Or: *Qurqura*
Sm: *Gob*
Tg: *Geva*

Ecology

A tree widespread in tropical Africa, often naturalized, also Mediterranean to India and cultivated in other tropical and subtropical parts of the world. In Ethiopia, it is common in Dry and Moist Kolla agroclimatic zones in Ilubabor, Gamo Gofa, Bale, Sidamo and Harerge, 400–1,600 m. It has a strongly developed root system and does best in areas with a high water table.

Uses

Firewood, charcoal, timber (utensils), fodder (leaves, fruit), food (fruit), bee forage, soil conservation, live fence, fencing material (dry branches).

Description

A much-branched spiny shrub or tree, to 10 m, drooping angular branches, crown rounded. BARK: Grey-black, pairs of dark brown thorns, both straight and recurved (“thumb-pointer”) or small, single and recurved. LEAVES: Markedly alternate along the stem, small and oval, to 8 cm, leaf bases rounded and equal, shiny yellow-green above, hairy white below, 3 veins from the base, young stems hairy. FLOWERS: Small yellow-green, in clusters by leaves, on hairy stalks, a sharp sweet

smell. FRUIT: Rounded 1–2 cm, shiny yellow then red-brown, pulp edible, 2 seeds in a large stone.

Propagation

Seedlings, direct sowing at site, cuttings.

Seed

Germination rates often low. 2,000—3,300 stones per kg. Each stone contains 2—3 seeds (multigermin).

Treatment: Soak in cold water, crack hard seed cover.

Storage: Uncracked but cleaned stones can be stored. Storage in airtight containers for a year improves germination.

Management

Fast growing in dry areas; coppicing, lopping, pollarding, pruning. Produces root suckers.

Remarks

A very important tree for dry areas because of its many uses. Many parasites attack the leaves and fruits.



Photo: Patrick Maundu



Ziziphus mucronata

Rhamnaceae



Indigenous

Ag: *Geba*
Am: *Ado qurqura, Foch*
Eng: *Buffalo-thorn*
Or: *Ado-qurqura*
Sm: *Eddi-shebel, Harkey*
Tg: *Gaba-harmaz;*
Wt: *Gammo-gadie*

Ecology

Widely distributed in drier parts of Africa from Senegal east to the Arabian peninsular and south to South Africa and Madagascar. It grows in dry temperate and tropical climates and is adaptable to a variety of soils. In Ethiopia, it grows in *Acacia-Terminalia*, *Acacia-Balanites* and *Boswellia* woodlands and bushlands, on alluvial soils, and in dry riverine forests in all regions. It does well in Bereha and Dry, Moist and Wet Kolla and Weyna Dega agroclimatic zones of almost all regions, 100–2,100 m.

Uses

Firewood, charcoal, timber (farm tools, local construction), food (fruit), medicine (roots, fruit), shade, live fence, fencing material (dry branches).

Description

A semi-deciduous shrub or tree to 15 m, sometimes scrambling over other plants, usually armed with strong spines, paired with one straight, one recurved spine (“thumb pointer”). BARK: Dark grey-brown, only smooth when young. LEAVES: Hairless and shiny, a similar green both sides, 3–6 cm long, the edge

with regular rounded teeth to a pointed tip, the base rounded, often very unequal, 3 main veins clear below, vein network raised above. FLOWERS: Very small, yellow-green, crowded in heads by leaves. FRUIT: Rounded to 2 cm across, the skin dark red-brown when ripe, in stalked bunches, very acid pulp around the stone, hardly edible, conspicuous on the bare tree.

Propagation

Seedlings, direct sowing at site.

Seed

A prolific seeder. 700-1,100 stones per kg. Each stone contains 1—3 seed (multi-germ).

Treatment: Remove the flesh, crack the cover or soak in cold water for 6 hours.

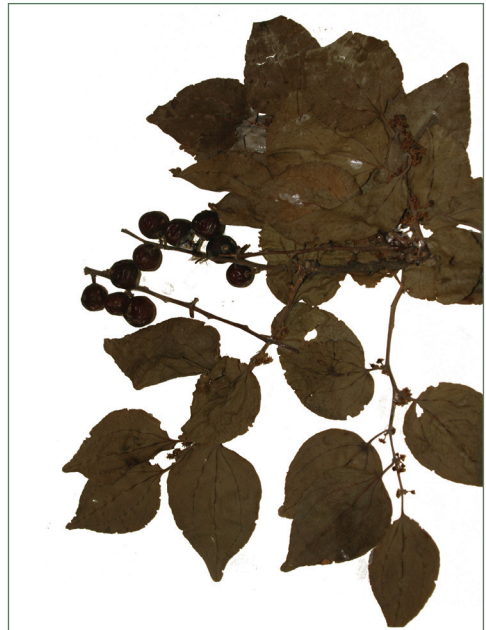
Storage: Uncracked stones can be stored for long periods (1 year).

Management

Pollarding, lopping, coppicing. Produces root suckers. The species is difficult to handle due to its many hooked spines.

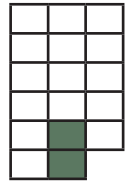
Remarks

The yellow-pink wood is tough and bends well (bows) and although it is termite resistant it is not very durable in the ground. Livestock and wild animals eat the fruit. Seed matures from September to October.



Ziziphus pubescens

Rhamnaceae



Indigenous

Agn: *Lero*

Mjr: *Oleme*

Nur: *Riak*

Ecology

Grows in Moist and Kolla Bereha, 300-1,400 m, annual rainfall 1,400-2,000 mm. The species is common in Gambella and in the Weyto valley around Jinka.

Use

Firewood, timber (general construction), tool handles, food (fruit), fodder (leaves).

Description

It is a huge tree to a height of 15 m and DBH (diameter at breast height) of up to 1.2 m or more. BARK: dark, scaly especially on branchlets, often no scale on young branches, peels off easily from branches. LEAVES: Tomentose (finely hairy), alternate, simple, pale green when young and dark green when old, four coarse leaf veins radiating from its base towards tip, base asymmetric, petiole 4 – 7mm, margin entire up to 6.5 cm in length and ~3.5 cm in width. FLOWER: Not conspicuous, flowers stocks short and many along the branchlets. FRUIT: Bean shaped, slightly bigger than beans, green when young and reddish if mature, few seeds per fruit.

Propagation

From seeds, seedlings and wildings

Seed

Treatment: Soak in cold water and macerate it when loose

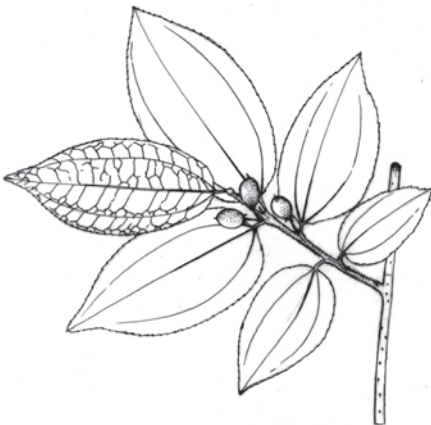
Storage: Can store well in an air-tight container if fruit is not cracked.

Management

Pollarding, thinning

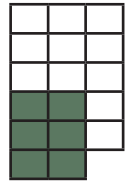
Remarks

Leaves are eaten by goats and cattle. Mainly women and children eat the fruits.



Ziziphus spina-christi

Rhamnaceae



Indigenous

Agn: *Lang*

Am: *Qurqura*

Brt: *Atsoda*

Nur: *Bow*

Or: *Qurqura*

Tg: *Geba*

Ecology

A spiny shrub which grows in the Sahel from Senegal to the Sudan and Arabia in wooded grasslands, on flooded river banks and at edges of cultivation. It prefers alluvial plains with deep soil. In Ethiopia, it occurs in Bereha and Dry and Moist Kolla agroclimatic zones in Afar plains, Dire-dawa, Hararge, Bale, Gamo Gofa, Shewa, Welo, and Tigray, 0–1,900 m.

Uses

Firewood, charcoal, timber (spear shafts, roof beams), furniture, utensils, food (fruit), fodder (fruit, leaves), shade, live fence, fencing material (dry branches).

Description

A thorny shrub becoming a tree to 10 m, evergreen on wet sites but losing all its leaves in a long dry season. The tree lives a long time. **BARK:** Grey-brown, when cut the edge is reddish, mature bark grooved and cracking. The paired spines are “thumb pointer”, the straight thorns long and thin. Branchlets yellow-white, somewhat zigzag. **LEAVES:** Rather small, narrowly ovate, variable in length, 1–8 cm, shortly stalked, usually narrowed to the base where each side is similar, 3 clear veins from the base, the edge lightly toothed. **FLOWERS:**

Small, 10–25 in heads beside leaves, yellow-green, stalks and calyx hairy white. **FRUIT:** Round, 1–2 cm, woolly at first, ripening yellow to red, with edible flesh covering one hard stone that contains 2–3 seeds.

Propagation

Seedlings, cuttings.

Seed

1,000—2,000 seed per kg. Remove the flesh, clean, dry and store.

Treatment: The hard woody stones should be cracked with a hammer and soaked in warm but not hot water overnight.

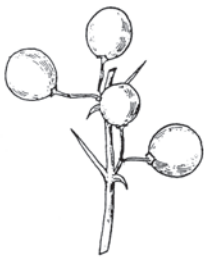
Storage: Stores well.

Management

Coppicing, lopping, pollarding. Produces root suckers.

Remarks

It develops an extremely deep taproot system. It can make an impenetrable thicket. The wood makes excellent firewood and charcoal. It coppices very well.



PART IV

Summary of uses,
families and species

	Wood							Food					Fodder			Environment						Other Uses															
	Firewood	Charcoal	Timber/Furniture	Poles/Posts	Flooring	Veneer/Plywood	Tools/Handles	Carvings/Utensils	Fruit/Food	Seasoning/Flavouring	Drink/Soup	Edible oil / Gum	Medicine/Stimulant	Fodder/Forage	Bee forage	Shade	Ornamental	Mulch	Nitrogen Fixation	Soil Conservation	Soil improvement	Windbreak	Fibre/Weaving	Thatch/Roofing	Resin/Gum/Latex	Tannin/Dye	Toxin/Insecticide	Cosmetic/Soap	Live fence/Dry fencing	Traditional uses	Toothbrushes						
<i>Acacia abyssinica</i>	x	x		x		x						x	x	x	x				x	x																	
<i>Acacia albida</i>	x	x	x	x			x	x	x			x	x			x		x	x	x							x	x									
<i>Acacia asak</i>	x	x	x									x																									
<i>Acacia brevispica</i>	x											x	x																								
<i>Acacia bussei</i>	x											x	x																								
<i>Acacia decurrens</i>	x	x		x									x	x																							
<i>Acacia lahai</i>	x	x		x																																	
<i>Acacia mearnsii</i>	x	x		x								x		x																							
<i>Acacia melanoxylon</i>	x	x	x	x																																	
<i>Acacia nilotica</i>	x	x		x								x	x																								
<i>Acacia oerfota</i>	x			x								x	x																								
<i>Acacia polyacantha</i>	x	x		x								x	x																								
<i>Acacia saligna</i>	x			x								x	x																								
<i>Acacia senegal</i>	x	x		x								x	x																								
<i>Acacia seyal</i>	x			x								x	x																								
<i>Acacia sieberiana</i>	x	x		x								x	x																								
<i>Acacia tortilis</i>	x	x		x									x																								
<i>Acokanthera schimperi</i>												x																									
<i>Adansonia digitata</i>												x	x																								
<i>Albizia grandibracteata</i>	x											x																									
<i>Albizia gummifera</i>	x		x									x	x																								

	Wood						Food				Fodder		Environment					Other Uses																				
	Firewood	Charcoal	Timber/Furniture	Poles/Posts	Flooring	Vener/Plywood	Tools/Handles	Carvings/Utensils	Fruit/Food	Seasoning/Flavouring	Drink/Soup	Edible oil // Gum	Medicine/Stimulant	Fodder/Forage	Bee forage	Shade	Ornamental	Mulch	Nitrogen Fixation	Soil Conservation	Soil improvement	Windbreak	Fibre/Weaving	Tatch/Roofting	Resin/Gum/Latex	Tannin/Dye	Toxin/Insecticide	Cosmetic/Soap	Live fence/Dry fencing	Traditional uses	Toothbrushes							
<i>Albizia lebeck</i>	x	x	x	x								x	x	x	x	x	x	x	x	x		x				x												
<i>Albizia lophantha</i>	x												x	x																								
<i>Albizia malacophylla</i>																																						
<i>Albizia schimperiana</i>	x	x	x			x						x																										
<i>Allophylus abyssinicus</i>	x						x						x																									
<i>Aloe vera</i>																																						
<i>Annona muricata</i>																																						
<i>Annona senegalensis</i>	x		x	x																																		
<i>Anogeissus leiocarpa</i>	x	x	x	x																																		
<i>Antiaris toxicaria</i>	x	x	x	x																																		
<i>Apodytes dimidiata</i>	x		x																																			
<i>Arundinaria alpina</i>			x	x																																		
<i>Arundo donax</i>			x																																			
<i>Azadirachta indica</i>	x	x	x	x																																		
<i>Balanites aegyptiaca</i>	x	x	x	x																																		
<i>Baphia abyssinica</i>	x	x	x	x																																		
<i>Berberis holstii</i>	x																																					
<i>Berchemia discolor</i>			x	x																																		
<i>Bersama abyssinica</i>	x																																					
<i>Blightia unijugata</i>			x																																			

	Wood								Food					Fodder		Environment						Other Uses															
	Firewood	Charcoal	Timber/Furniture	Poles/Posts	Flooring	Veneer/Plywood	Tools/Handles	Carvings/Tenants	Fruit/Food	Seasoning/Flavouring	Drink/Soup	Edible oil / Gum	Medicine/Stimulant	Fodder/Forage	Bee forage	Shade	Ornamental	Mulch	Nitrogen Fixation	Soil Conservation	Soil improvement	Windbreak	Fibre/Weaving	Thatch/Roofing	Resin/Gum/Latex	Tannin/Dye	Toxin/Insecticide	Cosmetic/Soap	Live fence/Dry fencing	Traditional uses	Toothbrushes						
<i>Borassus aethiopicum</i>			X	X		X		X		X	X	X	X										X														
<i>Boswellia papyrifera</i>																								X													
<i>Boswellia rivae</i>																			X					X													
<i>Breonadia salicina</i>	X	X	X	X	X	X	X													X																	
<i>Bridelia micrantha</i>	X	X	X	X		X		X				X																									
<i>Buddleia polystachya</i>	X	X	X									X																									
<i>Caesalpinia decapetala</i>												X																									
<i>Cajanus cajan</i>	X							X				X																									
<i>Calotropis procera</i>	X											X																									
<i>Capparis tomentosa</i>	X											X																									
<i>Carissa spinarum</i>	X											X																									
<i>(C. edulis)</i>												X																									
<i>Casimiroa edulis</i>	X	X						X				X																									
<i>Casuarina cunninghamiana</i>	X	X	X	X									X																								
<i>Casuarina equisetifolia</i>	X	X	X	X									X																								
<i>Catha edulis</i>	X											X																									
<i>Ceiba pentandra</i>												X																									
<i>Celtis africana</i>	X	X	X										X																								
<i>Celtis toka</i>	X	X	X	X	X								X																								
<i>Citrus aurantifolia</i>								X																													

	Wood								Food				Fodder		Environment						Other Uses															
	Firewood	Charcoal	Timber/Furniture	Poles/Posts	Flooring	Veneer/Plywood	Tools/Handles	Carvings/Tenails	Fruit/Food	Seasoning/Flavouring	Drink/Soup	Edible oil // Gum	Medicine/Stimulant	Fodder/Forage	Bee forage	Shade	Ornamental	Mulch	Nitrogen Fixation	Soil Conservation	Soil improvement	Windbreak	Fibre/Weaving	Thatch/Roofting	Resin/Gum/Latex	Tannin/Dye	Toxin/Insecticide	Cosmetic/Soap	Live fence/Dry fencing	Traditional uses	Toothbrushes					
<i>Citrus medica</i>								x				x																								
<i>Citrus reticulata</i>								x																												
<i>Citrus sinensis</i>								x		x																										
<i>Combretum aculeatum</i>	x									x			x																							
<i>Combretum collinum</i>	x											x																								
<i>Combretum molle</i>	x	x	x	x				x				x																								
<i>Commiphora africana</i>	x							x		x		x																								
<i>Commiphora erythraea</i>																																				
<i>Commiphora habessinica</i>	x																																			
<i>Cordeauxia edulis</i>	x																																			
<i>Cordia africana</i>	x							x				x																								
<i>Croton macrostachyus</i>	x	x	x	x								x																								
<i>Cupressus lusitanica</i>	x																																			
<i>Cyathea manniana</i>																																				
<i>Chamaecytisus proliferus</i>	x																																			
<i>Dalbergia melanoxylon</i>	x											x																								
<i>Dalbergia sissoo</i>	x	x	x	x																																
<i>Delonix regia</i>																																				
<i>Dicrostachys cinerea</i>	x	x	x	x																																

	Wood								Food				Fodder			Environment						Other Uses																	
	Firewood	Charcoal	Timber/Furniture	Poles/Posts	Flooring	Veneer/Plywood	Tools/Handles	Carvings/Utensils	Fruit/Food	Seasoning/Flavouring	Drink/Soup	Edible oil / Gum	Medicine/Stimulant	Fodder/Forage	Bee forage	Shade	Ornamental	Mulch	Nitrogen Fixation	Soil Conservation	Soil improvement	Windbreak	Fibre/Weaving	Thatch/Roofing	Resin/Gum/Latex	Tannin/Dye	Toxin/Insecticide	Cosmetic/Soap	Live fence/Dry fencing	Traditional uses	Toothbrushes								
<i>Diospyros abyssinica</i>	x	x	x			x									x																								
<i>Diospyros mespiliformis</i>	x		x				x		x			x			x																								
<i>Discopodium penninervium</i>	x					x																						x											
<i>Dobera glabra</i>	x		x					x					x			x								x								x							
<i>Dodonaea viscosa</i>	x	x		x								x		x																									
<i>Dombeya torrida</i>	x		x	x														x																					
<i>Dovyalis abyssinica</i>								x				x																					x						
<i>Dracaena steudneri</i>																	x																						
<i>Ehretia cymosa</i>	x		x				x						x																										
<i>Ekebergia capensis</i>	x		x	x								x																											
<i>Embelia schimperi</i>	x											x																											
<i>Ensete ventricosum</i>								x																															
<i>Entada abyssinica</i>	x											x																											
<i>Erica arborea</i>	x	x											x																										
<i>Eriobotrya japonica</i>	x			x				x						x																									
<i>Erythrina abyssinica</i>	x						x					x																											
<i>Erythrina brucei</i>	x						x					x																											
<i>Erythroxylum fischeri</i>	x	x										x																											

	Wood								Food				Fodder		Environment						Other Uses													
	Firewood	Charcoal	Timber/Furniture	Poles/Posts	Flooring	Veneer/Plywood	Tools/Handles	Carvings/Utensils	Fruit/Food	Seasoning/Flavouring	Drink/Soup	Edible oil / Gum	Medicine/Stimulant	Fodder/Forage	Bee forage	Shade	Ornamental	Mulch	Nitrogen Fixation	Soil Conservation	Soil improvement	Windbreak	Fibre/Weaving	Tatch/Roofing	Resin/Gum/Latex	Tannin/Dye	Toxin/Insecticide	Cosmetic/Soap	Live fence/Dry fencing	Traditional uses	Toothbrushes			
<i>Eucalyptus camaldulensis</i>	X	X	X	X									X	X		X						X												
<i>Eucalyptus citriodora</i>	X	X	X	X								X										X												
<i>Eucalyptus globulus</i>	X	X	X	X		X						X		X								X												
<i>Eucalyptus grandis</i>	X	X	X	X		X						X		X								X												
<i>Eucalyptus saligna</i>	X	X	X	X		X						X		X								X												
<i>Eucalyptus viminalis</i>	X	X	X	X		X								X								X												
<i>Euclea racemosa</i>	X						X	X									X												X					
<i>Euphorbia abyssinica</i>	X		X																				X											
<i>Euphorbia candelabrum</i>	X		X																				X						X					
<i>Euphorbia tirucalli</i>												X												X				X						
<i>Fagaropsis angolensis</i>	X		X																															
<i>Ficus carica</i>								X				X																						
<i>Ficus elastica</i>																	X																	
<i>Ficus sur</i>			X					X								X																X		
<i>Ficus sycomorus</i>	X						X	X				X				X		X																
<i>Flacourtia indica</i>	X						X	X				X																			X			
<i>Flueggea virosa</i>	X							X				X																						

	Wood								Food				Fodder		Environment						Other Uses																	
	Firewood	Charcoal	Timber/Furniture	Poles/Posts	Flooring	Veneer/Plywood	Tools/Handles	Carvings/Tenails	Fruit/Food	Seasoning/Flavouring	Drink/Soup	Edible oil / Gum	Medicine/Stimulant	Fodder/Forage	Bee Forage	Shade	Ornamental	Mulch	Nitrogen Fixation	Soil Conservation	Soil improvement	Windbreak	Fibre/Weaving	Thatch/Roofting	Resin/Gum/Latex	Tannin/Dye	Toxin/Insecticide	Cosmetic/Soap	Live fence/Dry fencing	Traditional uses	Toothbrushes							
<i>Gaiinera saxifraga</i>	x		x															x																				
<i>Gardenia ternifolia</i>	x	x					x					x						x																				
<i>Gardenia volkensii</i>	x	x	x		x							x						x																				
<i>Gmelina arborea</i>	x	x	x	x			x											x																				
<i>Grevillea robusta</i>	x	x	x	x														x																				
<i>Grewia bicolor</i>	x			x			x					x																										
<i>Grewia ferruginea</i>	x		x				x																															
<i>Grewia villosa</i>	x						x																															
<i>Hagenia abyssinica</i>	x		x	x								x						x																				
<i>Hevea brasiliensis</i>																																						
<i>Hypericum</i>	x	x																																				
<i>Hypericum quinarianum</i>																																						
<i>Hypericum revolutum</i>	x		x																																			
<i>Hypericum roeperianum</i>	x	x																																				
<i>Hyphaene thebaica</i>			x																																			
<i>Ilex mitis</i>	x	x	x									x																										
<i>Jacaranda mimosifolia</i>	x		x	x																																		
<i>Jatropha curcus</i>	x																																					
<i>Juniperus procera</i>	x	x	x	x																																		

	Wood								Food				Fodder					Environment					Other Uses													
	Firewood	Charcoal	Timber/Furniture	Poles/Posts	Flooring	Veneer/Plywood	Tools/Handles	Carvings/Utensils	Fruit/Food	Seasoning/Flavouring	Drink/Soup	Edible oil // Gum	Medicine/Stimulant	Fodder/Forage	Bee forage	Shade	Ornamental	Mulch	Nitrogen Fixation	Soil Conservation	Soil improvement	Windbreak	Fibre/Weaving	Thatch/Roofting	Resin/Gum/Latex	Tannin/Dye	Toxin/Insecticide	Cosmetic/Soap	Live fence/Dry fencing	Traditional uses	Toothbrushes					
<i>Justicia schimperiana</i>	X								X			X		X																						
<i>Kigelia africana</i>	X	X							X			X		X											X											
<i>Lannea welwitschii</i>	X	X	X	X	X	X	X	X					X		X	X	X	X				X														
<i>Lawsonia inermis</i>												X		X			X						X			X										
<i>Lepidotrichilia volkensii</i>	X	X				X		X	X											X												X	X			
<i>Leucaena leucocephala</i>	X	X		X									X	X	X		X																			
<i>Lonchocarpus laxiflorus</i>	X	X				X		X					X	X	X																		X	X		
<i>Maesa lanceolata</i>	X											X																								
<i>Malus domestica</i>	X							X							X		X																			
<i>Mangifera indica</i>	X							X						X	X		X																			
<i>Manilkara butugi</i>	X	X			X	X		X																												
<i>Markhamia lutea</i>	X	X		X								X																								
<i>Maytenus arbutifolia</i>	X					X		X					X																							
<i>Maytenus senegalensis</i>	X											X																								
<i>Mimusops kummel</i>	X	X				X		X																												
<i>Moringa oleifera</i>								X	X		X	X	X	X	X	X	X	X	X	X	X	X	X				X									
<i>Morus alba</i>	X							X				X	X	X	X	X	X	X	X	X	X	X	X													
<i>Morus mesozygia</i>	X	X			X							X	X	X	X	X	X	X	X	X	X	X	X													
<i>Myrica salicifolia</i>	X	X										X																								

	Wood							Food				Fodder				Environment							Other Uses												
	Firewood	Charcoal	Timber/Furniture	Poles/Posts	Flooring	Veneer/Plywood	Tools/Handles	Carvings/Lensils	Fruit/Food	Seasoning/Flavouring	Drink/Soup	Edible oil / Gum	Medicine/Stimulant	Fodder/Forage	Bee forage	Shade	Ornamental	Mulch	Nitrogen Fixation	Soil Conservation	Soil improvement	Windbreak	Fibre/Weaving	Thatch/Roofting	Resin/Gum/Latex	Tannin/Dye	Toxin/Insecticide	Cosmetic/Soap	Live fence/Dry fencing	Traditional uses	Toothbrushes				
<i>Pinus radiata</i>	x	x	x	x												x						x													
<i>Pithecellobium dulce</i>	x	x	x	x						x			x	x	x	x						x													
<i>Pittosporum viridiflorum</i>	x	x	x				x																												
<i>Podocarpus falcatus</i>	x	x	x			x						x																							
<i>Polyscias fulva</i>	x	x	x															x																	
<i>Premna schimperi</i>	x	x										x																							
<i>Prosopis juliflora</i>	x	x	x	x								x		x	x	x																			
<i>Prunus africana</i>	x	x	x	x								x		x	x																				
<i>Prunus persica</i>	x																																		
<i>Psidium guajava</i>	x																																		
<i>Psychrax schimperiana</i>	x																																		
<i>Pouteria adolfi-friedericii</i>																																			
<i>Pouteria altissima</i>																																			
<i>Rhamnus prinoides</i>	x																																		
<i>Rhamnus staddo</i>	x																																		
<i>Rhoicissus revouilii</i>	x																																		
<i>Rhoicissus tridentata</i>																																			
<i>Rhus glutinosa</i>	x																																		
<i>Rhus natalensis</i>	x	x																																	

	Wood								Food					Fodder		Environment						Other Uses															
	Firewood	Charcoal	Timber/Furniture	Poles/Posts	Flooring	Veneer/Plywood	Tools/Handles	Carvings/Utensils	Fruit/Food	Seasoning/Flavouring	Drink/Soup	Edible oil / Gum	Medicine/Stimulant	Fodder/Forage	Bee forage	Shade	Ornamental	Mulch	Nitrogen Fixation	Soil Conservation	Soil improvement	Windbreak	Fibre/Weaving	Thatch/Roofting	Resin/Gum/Latex	Tannin/Dye	Toxin/Insecticide	Cosmetic/Soap	Live fence/Dry fencing	Traditional uses	Toothbrushes						
<i>Rhus retinorrhoea</i>	x					x		x																													
<i>Rhus vulgaris</i>	x					x		x																													
<i>Ricinus communis</i>												x															x										
<i>Rosa abyssinica</i>	x							x				x																x									
<i>Salix mucronata</i>	x																															x					
<i>Salvadora persica</i>	x							x				x				x																x					
<i>Sapium ellipticum</i>	x																																				
<i>Sarcocephalus latifolius</i>	x							x																													
<i>Schefflera abyssinica</i>			x																																		
<i>Schinus molle</i>	x																																				
<i>Sclerocarya birrea</i>																																					
<i>Securidaca longipendunculata</i>	x																																				
<i>Senna alexandrina</i>																																					
<i>Senna diymobotrya</i>	x																																				
<i>Senna siamea</i>	x																																				
<i>Sesbania sesban</i>	x																																				
<i>Spathodea campanulata</i>	x																																				
<i>Steganotaenia araliacea</i>	x																																				

	Wood						Food				Fodder		Environment						Other Uses																
	Firewood	Charcoal	Timber/Furniture	Poles/Posts	Flooring	Veneer/Plywood	Tools/Handles	Carvings/Lensils	Fruit/Food	Seasoning/Flavouring	Drink/Soup	Edible oil // Gum	Medicine/Stimulant	Fodder/Forage	Bee Forage	Shade	Ornamental	Mulch	Nitrogen Fixation	Soil Conservation	Soil improvement	Windbreak	Fibre/Weaving	Tatch/Roofting	Resin/Gum/Latex	Tannin/Dye	Toxin/Insecticide	Cosmetic/Soap	Live fence/Dry fencing	Traditional uses	Toothbrushes				
<i>Sterculia africana</i>	x	x	x			x	x				x	x						x				x													
<i>Stereospermum kauntianum</i>	x											x					x																		
<i>Strychnos henningsii</i>	x					x				x		x																	x						
<i>Strychnos innocua</i>	x						x																												
<i>Strychnos spinosa</i>	x	x	x					x				x		x																					
<i>Syzygium guineense</i>	x	x	x				x					x																							
<i>Tamarindus indica</i>	x	x	x							x		x		x																					
<i>Tamarix aphylla</i>	x	x	x										x																						
<i>Tealea nobilis</i>	x	x	x									x																							
<i>Terminalia brownii</i>	x	x	x									x		x																					
<i>Terminalia laxiflora</i>	x	x																																	
<i>Trichilia dregeana</i>	x	x	x																																
<i>Trichilia emetica</i>	x	x	x									x																							
<i>Trilepisium madagascariense</i>	x	x																																	
<i>Vepris dainellii</i>	x	x																																	
<i>Vernonia amygdalina</i>	x	x										x																							
<i>Vitellaria paradoxa</i>	x	x										x																							

	Wood								Food				Fodder		Environment						Other Uses															
	Firewood	Charcoal	Timber/Furniture	Poles/Posts	Flooring	Veneer/Plywood	Tools/Handles	Carvings/Utensils	Fruit/Food	Seasoning/Flavouring	Drink/Soup	Edible oil / Gum	Medicine/Stimulant	Fodder/Forage	Bee forage	Shade	Ornamental	Mulch	Nitrogen Fixation	Soil Conservation	Soil improvement	Windbreak	Fibre/Weaving	Thatch/Roofting	Resin/Gum/Latex	Tannin/Dye	Toxin/Insecticide	Cosmetic/Soap	Live fence/Dry fencing	Traditional uses	Toothbrushes					
<i>Vitex doniana</i>	x	x	x	x				x				x	x	x	x	x																				
<i>Warburgia ugandensis</i>	x		x			x			x			x	x			x	x							x												
<i>Woodfordia uniflora</i>	x					x		x					x																							
<i>Ximenia amricana</i>	x	x	x				x	x				x	x														x									
<i>Zizyphus mauritiana</i>	x	x	x				x	x					x	x														x								
<i>Zizyphus mucronata</i>	x	x	x					x				x				x												x								
<i>Zizyphus pubescens</i>	x	x		x									x	x		x																				
<i>Zizyphus spina-christi</i>	x	x	x					x						x		x																				

Families and species

Acanthaceae

Justicia schimperiana (*Adhatoda schimperiana*)

Aloaceae

Aloe vera (*A. barbadensis*)

Anacardiaceae

Lannea welwitschii

Mangifera indica

Rhus glutinosa

Rhus natalensis

Rhus retinorrhoea

Rhus vulgaris

Schinus molle

Sclerocarya birrea

Annonaceae

Annona muricata

Annona senegalensis (*A. chrysophylla*)

Apiaceae

Steganotaenia araliacea

Apocynaceae

Acokanthera schimperii

Calotropis procera

Carissa spinarum (*C. edulis*)

Aquifoliaceae

Ilex mitis

Araliaceae

Polyscias fulva (*P. ferruginea*)

Schefflera abyssinica

Arecaceae

Borassus aethiopum

Hyphaene thebaica

Phoenix dactylifera

Phoenix reclinata

Asteraceae

Vernonia amygdalina

Balanitaceae

Balanites aegyptiaca

Berberidaceae

Berberis holstii

Bignoniaceae

Jacaranda mimosifolia

Kigelia africana (*K. aethiopum*, *K. pinnata*)

Markhamia lutea

Stereospermum kunthianum

Bombacaceae

Adansonia digitata

Ceiba pentandra

Boraginaceae

Cordia africana

Ehretia cymosa

Burseraceae

Boswellia papyrifera

Boswellia rivae

Commiphora africana

Commiphora erythraea

Commiphora habessinica

Canellaceae

Warburgia ugandensis

Capparidaceae

Capparis tomentosa

Casuarinaceae

Casuarina cunningghamiana

Casuarina equisetifolia

Celastraceae

Catha edulis

Maytenus arbutifolia

Maytenus senegalensis

Maytenus undata

Combretaceae

Anogeissus leiocarpus
Combretum aculeatum
Combretum collinum
Combretum molle
Terminalia brownii
Terminalia laxiflora

Cupressaceae

Cupressus lusitanica
Juniperus procera

Cyatheaceae

Cyathea manniana

Dracaenaceae

Dracaena steudneri

Ebenaceae

Diospyros abyssinica
Diospyros mespiliformis
Euclea racemosa subsp. *schimperi*

Ericaceae

Erica arborea

Erythroxylaceae

Erythroxylum fischeri

Euphorbiaceae

Bridelia micrantha
Croton macrostachyus
Euphorbia abyssinica
Euphorbia candelabrum
Euphorbia tirucalli
Flueggea virosa (*Securinega virosa*,
Phyllanthus virosus)
Hevea brasiliensis
Jatropha curcus
Ricinus communis
Sapium ellipticum

Fabaceae

Acacia abyssinica subsp. *abyssinica*
Acacia albida (*Faidherbia albida*)

Acacia asak
Acacia brevispica
Acacia bussei
Acacia decurrens (*Racosperma decurrens*)
Acacia lahai
Acacia mearnsii (*Racosperma mearnsii*)
Acacia melanoxylon (*Racosperma melanoxylon*)
Acacia nilotica
Acacia oerfota (*A. nubica*)
Acacia polyacantha subsp. *campylacantha*
Acacia saligna (*Racosperma saligna*)
Acacia senegal
Acacia seyal
Acacia sieberiana
Acacia tortilis
Albizia grandibracteata
Albizia gummifera
Albizia lebbeck
Albizia lophantha
Albizia malacophylla var. *ugadensis*
Albizia schimperiana
Acacia mearnsii (*Racosperma mearnsii*)
Baphia abyssinica
Caesalpinia decapetala
Cajanus cajan
Chamaecytisus proliferus (*Cytisus palmensis*,
Chamaecytisus palmensis)
Cordeauxia edulis
Dalbergia melanoxylon
Dalbergia sissoo
Delonix regia
Dichrostachys cinerea
Acacia mearnsii (*Racosperma mearnsii*)
Entada abyssinica
Erythrina abyssinica
Erythrina brucei
Leucaena leucocephala
Lonchocarpus laxiflorus
Millettia ferruginea
Parkinsonia aculeata
Piliostigma thonningii
Pithecellobium dulce
Prosopis juliflora
Senna alexandrina (*Cassia alexandrina*)

Senna didymobotrya (*Cassia didymobotrya*)

Senna siamea (*Cassia siamea*)

Sesbania sesban

Tamarindus indica

Flacourtiaceae

Dovyalis abyssinica

Flacourtia indica

Oncoba spinosa

Hypericaceae

Hypericum quartinianum

Hypericum revolutum (*H. lanceolatum*)

Hypericum roeperanum

Icacinaceae

Apodytes dimidiata

Lamiaceae

Otostegia integrifolia

Lauraceae

Ocotea kenyensis

Persea americana

Loganiaceae

Buddleia polystachya

Strychnos henningsii

Strychnos innocua

Strychnos spinosa

Lythraceae

Lawsonia inermis

Woodfordia uniflora

Meliaceae

Azadirachta indica

Ekebergia capensis (*E. rueppelliana*)

Lepidotrichilia volkensii

Melia azedarach

Trichilia dregeana

Trichilia emetica

Melanthaceae

Bersama abyssinica subsp. *abyssinica*

Moraceae

Antiaris toxicaria

Ficus carica

Ficus elastica

Ficus sur (*F. capensis*)

Ficus sycomorus

Milicia excelsa (*Chlorophora excelsa*)

Morus alba

Morus mesozygia (*M. lactea*, *Celtis lactea*)

Trilepisium madagascariense (*Bosquiea*

phoberos)

Moringaceae

Moringa oleifera

Musaceae

Ensete ventricosum (*E. edule*)

Myricaceae

Myrica salicifolia

Embelia schimperi

Embelia schimperi

Myrsinaceae

Maesa lanceolata

Myrtaceae

Eucalyptus camaldulensis

Eucalyptus citriodora

Eucalyptus globulus

Eucalyptus grandis

Eucalyptus saligna

Eucalyptus viminalis

Myrtus communis

Psidium guajava

Syzygium guineense

Oleaceae

Ximenia americana

Olea capensis **subsp.** *macrocarpa* (*O. hochstetteri*)

Olea europaea subsp. *cuspidata* (*Olea africana*)

Olea welwitschii

Olinia rochetiana

Phytolaccaceae

Phytolacca dodecandra

Pinaceae

Pinus patula

Pinus radiata

Pittosporaceae

Pittosporum viridiflorum

Poaceae

Arundinaria alpina

Arundo donax

Olyra latifolia

Oxytenanthera abyssinica

Podocarpaceae

Podocarpus falcatus (*P. gracilior*)

Polygalaceae

Securidaca longipendunculata

Proteaceae

Grevillea robusta

Rhamnaceae

Berchemia discolor

Rhamnus prinoides

Rhamnus staddo

Ziziphus mauritiana

Ziziphus mucronata

Ziziphus pubescens

Ziziphus spina-christi

Rosaceae

Eriobotrya japonica

Hagenia abyssinica

Malus domestica

Prunus africana (*Pygeum africanum*)

Prunus persica

Rosa abyssinica

Rubiaceae

Galiniera saxifraga (*G. coffeoides*)

Gardenia ternifolia

Gardenia volkensii

Pavetta oliveriana

Psydrax schimperiana subsp. *schimperiana*

(*Canthium schimperianum*)

Sarcocephalus latifolius

Rutaceae

Casimiroa edulis

Citrus aurantifolia

Citrus medica

Citrus reticulata

Citrus sinensis

Fagaropsis angolensis

Vepris dainellii

Vepris nobilis (*Teclea nobilis*)

Salicaceae

Salix mucronata (*S. subserrata*)

Salvadoraceae

Dobera glabra

Salvadora persica

Sapindaceae

Allophylus abyssinicus

Blighia unijugata

Dodonaea viscosa (*D. angustifolia*)

Sapotaceae

Manilkara butugi

Mimusops kummel

Pouteria adolfi-friedericii (*Aningeria adolfi-friedericii*)

Pouteria altissima (*Aningeria altissima*)

Vitellaria paradoxa (*Butyrospermum niloticum*)

Discopodium pennineroum

Sterculiaceae

Dombeya torrida subsp. *torrida* (*D. goetzenii*)

Sterculia africana

Tiliaceae

Grewia bicolor

Grewia ferruginea

Grewia villosa

Ulmaceae*Celtis africana**Celtis toka***Verbenaceae***Gmelina arborea**Premna schimperi**Vitex doniana***Vitaceae***Rhoicissus revouilii**Rhoicissus tridentata*

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*The author
documenting flora
information in
Gambella*



This handbook makes available information on the most useful trees and shrubs in Ethiopia. It provides valuable information on a wide range of mainly indigenous species that are important for farmers, pastoralists and other rural people. The trees and shrubs covered may be used for food, medicine, forage, timber and many other purposes.

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