

## Ximenia americana

L.

Olacaceae

### LOCAL NAMES

Afrikaans (kleinsuurpruim); Amharic (inkoy,kol); Arabic (kelto,abu khamira,humaid abiad,ankwi,abu khamier,medica); Bemba (mulebe); Bislama (terengi); English (hog plum,wild plum,false sandalwood,seaside plum,small sourplum,sour plum,tallow nut,tallow wood,wild lime,wild olive); French (cerise de mer,macaby,citron de mer,croc,Prunier de mer); Lozi (mungomba,mulutulwa,musongwasongwa,mutente); Luganda (museka); Lunda (musongwasongwa,muvulama); Mandinka (Nogbé,Séno,Ntogé,Séné); Nyanja (mtundulukwa,mtundu,kamulebe,ntengele); Somali (madarud,mararau); Spanish (hicaco,espino de brujo,ciruelillo,Caimito de monte,Cagalero,Albaricoque,Albaria,Tigrito,almendro de costa); Swahili (mtundakula,mtumbui tumbui,timbui timbui,mpingi); Tamil (chirullantai,kadaranji,siruyilan dai); Tigrigna (mlehtta,mullo); Tongan (muchonfwa)

### BOTANIC DESCRIPTION

*Ximenia americana* is a semi-scandent bush-forming shrub or small tree 2-7 m high. Trunk diameter seldom greater than 10 cm; bark dark brown to pale grey, smooth to scaly. The lax, usually divergent branching forms a rounded or conical crown. Branchlets purple-red with a waxy bloom and the tree usually armed with straight slender spines. Sometimes semi-parasitic with haustoria on the roots.

Leaves alternate, lanceolate to elliptic, 3-8 to 1.5-4 cm, variable thickness (semi-succulent to thin); obtuse or emarginate, 3-7 pairs veins, inconspicuous. Petioles short, slender, up to 6 mm long, canaliculate. Grey-green, hairless and leathery or thin flesh. When crushed, young leaves smell of bitter almonds.

The fragrant white, yellow-green or pink flowers occur in branched inflorescences borne on shortly pedunculate axillary racemes or umbels; pedicles 3-7 mm long, both peduncles or pedicles glabrous.

Fruits globose to ellipsoidal drupes about 3 cm long, 2.5 cm thick, glabrous, greenish when young, becoming yellowish (or, rarely, orange-red) when ripe, containing a juicy pulp and 1 seed. Seed woody, light yellow, up to 1.5 cm long, 1.2 cm thick with a fatty kernel and a brittle shell.

*Ximenia* was named after a Spanish monk, Francisco Ximeniz. The specific name is the Latin form of 'American'.

### BIOLOGY

The species flowers and its fruit ripens throughout the year; flowering and fruiting periods do not seem to be governed by climatic regimes. Fruits are dispersed by animals.



*X. americana* fruit and leaves. (Anthony Simons)



*Ximenia americana* slash (Joris de Wolf, Patrick Van Damme, Diego Van Meersschaut)



*Ximenia americana* foliage (Joris de Wolf, Patrick Van Damme, Diego Van Meersschaut)

**ECOLOGY**

A mostly solitary tree dispersed in open country, savannah, gallery forest, along coastal areas, in the understory of dry forests, in dry woodlands, or on riverbanks. *X. americana* is drought resistant.

**BIOPHYSICAL LIMITS**

Altitude: 900-2 000 m, Mean annual temperature: 14-30 deg.C, Mean annual rainfall: 300-1 250 mm

Soil type: Often poor and dry, including clays, clay loam, loamy sands, sandy clay loam and sands.

**DOCUMENTED SPECIES DISTRIBUTION**

Native: Angola, Argentina, Australia, Benin, Bolivia, Botswana, Brazil, Burkina Faso, Burundi, Cameroon, Chad, Chile, Colombia, Cote d'Ivoire, Democratic Republic of Congo, Ecuador, Eritrea, Ethiopia, French Guiana, Gambia, Ghana, Guadeloupe, Guinea, Guinea-Bissau, Guyana, Honduras, India, Kenya, Liberia, Mali, Mexico, Mozambique, Namibia, New Zealand, Nicaragua, Nigeria, Panama, Paraguay, Peru, Rwanda, Senegal, Sierra Leone, Somalia, South Africa, Sudan, Surinam, Tanzania, Togo, Uganda, Uruguay, US, Venezuela, Zambia, Zimbabwe

Exotic:



The map above shows countries where the species has been planted. It does neither suggest that the species can be planted in every ecological zone within that country, nor that the species can not be planted in other countries than those depicted. Since some tree species are invasive, you need to follow biosafety procedures that apply to your planting site.

**PRODUCTS**

**Food:** The fruits, as well as being pleasant to eat raw, can be used to make juice, jams and jellies, or an intoxicating drink. The pulp of seed and fruit contains hydrocyanic acid, and it is advisable not to chew the seed. Kernel oil is used as a vegetable butter and as a ghee substitute. Young leaves are edible after thorough cooking.

**Fuel:** Firewood and charcoal are the chief uses of the wood, because the trunk is usually too small to make it useful for timber.

**Tannin or dyestuff:** Bark is used for tanning; it contains approximately 17% tannin, which gives leather a reddish colour. Roots also used in tanning. Bark is used to strengthen indigo dyes.

**Lipids:** The fruit yields up to 67.4% oil from the seed that has been used as a body and hair oil. The oil is not edible, and the presence of a rubberlike substance excludes it from many industrial uses.

**Essential oil:** Heartwood contains an essential oil used for fumigation. The flowers have an essential oil that could be a good substitute for orange blossom.

**Alcohol:** In South Africa, the fruits have been used to make a kind of beer.

**Poison:** Sambunigrine has been identified as the main cyanogenetic principle in the plant. Leaves at 100 ppm cause 100% mortality of *Bulinus globus*, the vector in the transmission of schistosomiasis. Bark and crushed fruit rind are applied to sores on domestic animals and to keep off fleas.

**Medicine:** Leaves and twigs are used for fevers, colds, as a mouthwash for toothache, as a laxative and an eye lotion. Leaves are used for headaches, angina, and as a poison antidote. Roots treat skin problems, headaches, leprosy, haemorrhoids, sexually transmitted diseases, guinea worm, sleeping sickness, oedema, and act as an antidote to poison. The fruit is useful in treating habitual constipation. The bark is used in decoction, dried or powdered as a cicatrisant and applied to skin ulcers; it is put on the head for febrile headache, placed in bath water for sick children, and used for kidney and heart complaints. The fruit eaten in large quantities acts as a vermifuge. A decoction of the roots or fruits is used to treat dysentery in calves.

**Other products:** The seed contains a non-drying oil suitable for soap manufacture and lubrication.

**SERVICES**

**Ornamental:** *X. americana* has attractive foliage and flowers.

**Boundary or barrier or support:** Suited to cultivation as a hedge plant.

**TREE MANAGEMENT**

For life fence purposes, trimming is necessary. Coppicing is also a recommended practice.

**GERMPLASM MANAGEMENT**

Seed storage behaviour is recalcitrant. There are 1400 seeds/kg.

**FURTHER READING**

- Anon. 1986. The useful plants of India. Publications & Information Directorate, CSIR, New Delhi, India.
- Beentje HJ. 1994. Kenya trees, shrubs and lianas. National Museums of Kenya.
- Bein E. 1996. Useful trees and shrubs in Eritrea. Regional Soil Conservation Unit (RSCU), Nairobi, Kenya.
- Bekele-Tesemma A, Birnie A, Tengnas B. 1993. Useful trees and shrubs for Ethiopia. Regional Soil Conservation Unit (RSCU), Swedish International Development Authority (SIDA).
- Booth FEM, Wickens GE. 1988. Non-timber uses of selected arid zone trees and shrubs in Africa. FAO Conservation Guide. No. 19. Rome.
- Coates-Palgrave K. 1988. Trees of southern Africa. C.S. Struik Publishers Cape Town.
- Dale IR, Greenway PJ. 1961. Kenya trees and shrubs. Buchanan's Kenya Estates Ltd.
- Eggeling. 1940. Indigenous trees of Uganda. Govt. of Uganda.
- FAO. 1983. Food and fruit bearing forest species. 1: Examples from Eastern Africa. FAO Forestry Paper. 44/1. Rome.
- Hines DA, Eckman K. 1993. Indigenous multipurpose trees for Tanzania: uses and economic benefits to the people. Cultural survival Canada and Development Services Foundation of Tanzania.
- Hong TD, Lington S, Ellis RH. 1996. Seed storage behaviour: a compendium. Handbooks for Genebanks: No. 4. IPGRI.
- ICRAF. 1992. A selection of useful trees and shrubs for Kenya: Notes on their identification, propagation and management for use by farming and pastoral communities. ICRAF.
- Katende AB et al. 1995. Useful trees and shrubs for Uganda. Identification, Propagation and Management for Agricultural and Pastoral Communities. Regional Soil Conservation Unit (RSCU), Swedish International Development Authority (SIDA).
- Mbuya LP et al. 1994. Useful trees and shrubs for Tanzania: Identification, Propagation and Management for Agricultural and Pastoral Communities. Regional Soil Conservation Unit (RSCU), Swedish International Development Authority (SIDA).
- Storrs AEG. 1995. Know your trees: some common trees found in Zambia. Regional Soil Conservation Unit (RSCU).
- Vaughan JG. 1970. The structure and utilization of oil seeds. Chapman and Hall Ltd.
- Vogt K. 1995. A field guide to the identification, propagation and uses of common trees and shrubs of dryland Sudan. SOS Sahel International (UK).

**SUGGESTED CITATION**

Orwa C, Mutua A, Kindt R, Jamnadass R, Simons A. 2009. Agroforestry Database: a tree reference and selection guide version 4.0 (<http://www.worldagroforestry.org/af/treedb/>)