Ailanthus excelsa

Roxb.

Simaroubaceae

maharukh

LOCAL NAMES
Arabic (ailanthus,neem hindi); English (ailanthus,coramandel ailanto,tree-of-heaven); Gujarati (aduso,ardusi,bhutrakho); Hindi (maharuk,ardu,ardusi,arua,horanim maruk,aduso,mahanim,mahrukh,maruf,pedu,Pee vepachettu,pir nim); Nepali (maharukh); Sanskrit (madala); Tamil (periamaram,peru,perumaran,pimaram,pinari); Trade name (maharukh)

BOTANIC DESCRIPTION
Ailanthus excelsa is a large deciduous tree, 18-25 m tall; trunk straight, 60-80 cm in diameter; bark light grey and smooth, becoming grey-brown and rough on large trees, aromatic, slightly bitter.

Leaves alternate, pinnately compound, large, 30-60 cm or more in length; leaflets 8-14 or more pairs, long stalked, ovate or broadly lance shaped from very unequal base, 6-10 cm long, 3-5 cm wide, often curved, long pointed, hairy gland; edges coarsely toothed and often lobed.

Flower clusters droop at leaf bases, shorter than leaves, much branched; flowers many, mostly male and female on different trees, short stalked, greenish-yellow; calyx 5 lobed; 5 narrow petals spreading 6 mm across; stamens 10; on other flowers, 2-5 separate pistils, each with elliptical ovary, 1 ovule, and slender style.

Fruit a 1-seeded samara, lance shaped, flat, pointed at ends, 5 cm long, 1 cm wide, copper red, strongly veined, twisted at the base

The generic name ‘Ailanthus’ comes from ‘ailanthos’ (tree of heaven), the Indonesian name for Ailanthus moluccana.

BIOLOGY
The flowers appear in large open clusters among the leaves towards the end of the cold season. Male, female and bisexual flowers are intermingled on the same tree. The fruits ripen just before the onset of the monsoon. The seeds are very light and are dispersed far and wide by the wind.

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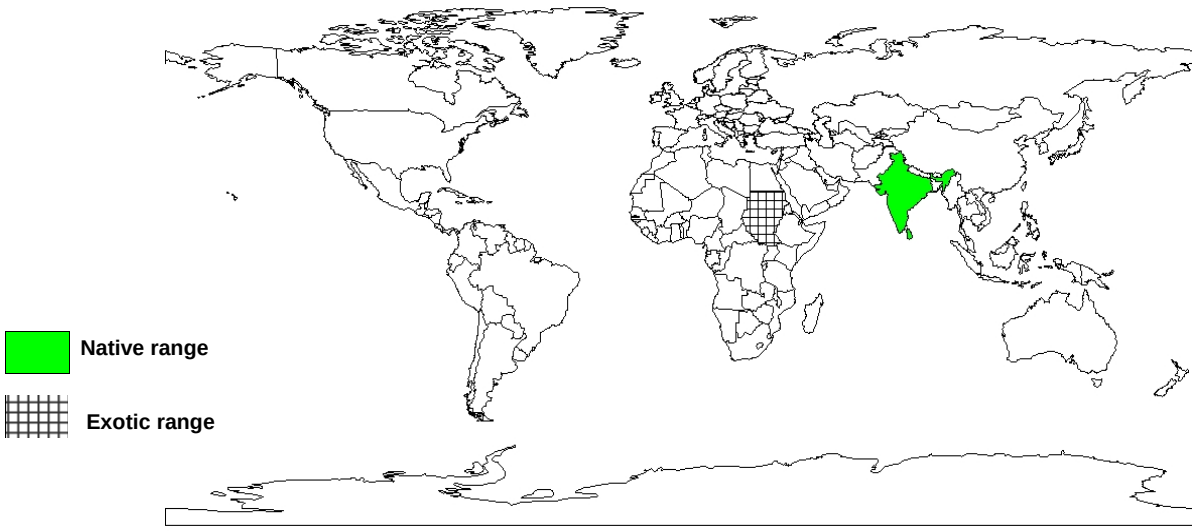
ECOLOGY
A. excelsa grows well in semi-arid and semi-moist regions and has been found suitable for planting in dry areas with annual rainfall of about 400 mm. It is commonly found in mixed deciduous forests and some sal forests, but is rare in moist areas with high monsoons. Plant associations include Acacia catechu, A. leucophloea and Azadirachta indica. It is a relatively salt-tolerant species.

BIOPHYSICAL LIMITS
Altitude: 0-900 m, Mean annual temperature: 0-45 deg C, Mean annual rainfall: 500-2 500 mm.

Soil type: Grows in a wide variety of soils, but thrives best in porous sandy loams. It avoids clayey soils with poor drainage and waterlogged areas. Its growth is poor on shallow dry soils.

DOCUMENTED SPECIES DISTRIBUTION

Native: India, Sri Lanka
Exotic: Sudan



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
Fodder: Sheep do not readily browse the plants because of the offensive smell in young leaves. Mature leaves are lopped for their excellent sheep fodder.

Fuel: Wood makes good firewood.

Timber: The wood is easily worked but is perishable and subject to insect attack and stain. It is used in boxes, crates, poles, fishing floats, tool handles, matches and drums.

Gum or resin: The bark yields a gum of inferior quality.

Medicine: Bark, gum and the bitter aromatic leaves are used medicinally in home remedies.

SERVICES
Shade or shelter: A. excelsa is grown as a shade and avenue tree throughout most of the hotter parts of India.

Boundary or barrier or support: The trees serve as shelterbelts along borders of fields.

TREE MANAGEMENT
A. excelsa has a strong light requirements. The recommended spacing is 6x 6m for Agroforestry and 3 x 3 m in block plantations.The seedlings are susceptible to frost and are easily suppressed by weeds as a result of shading. Prolonged drought also kills the seedlings,although the poles and trees are drought resistant. Waterlogging and poor drainage cause high seedling mortality. It coppices well and produces root suckers that should be thinned to reduce competition.

GERMPLASM MANAGEMENT
Seeds are usually picked before maturity since fully mature fruits are liable to lose most of their seeds through wind dispersal as soon as attempts are made to collect them. Seed storage behaviour is probably orthodox; viability is maintained for 1 year in open storage. There are about 9500 seeds/kg.

PESTS AND DISEASES
Atteva fabriciella, A. niveigutta and Eligma narsissus defoliate the tree. Borers include Batocera rufomaculata. Among the fungi are leaf spot fungi (Cercospora glandulosa) and Alternaria spp.

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SUGGESTED CITATION

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