

Acrocarpus fraxinifolius

mundani

Wight et. Arn.

Fabaceae - Caesalpinioideae

LOCAL NAMES

Bengali (mundani); Burmese (mayahnin,yetama); English (shingle tree,pink cedar,Indian ash,Kenya coffee shade,Australian ash); French (kuranjan); Hindi (belanji,hevulige,kuranjan,malankommao,silchhal); Indonesian (madang pariek,delimas); Javanese (delimas); Lao (Sino-Tibetan) (khan khak,ket 'hoy); Spanish (lazcar,cedro rosado); Thai (khang chang,sadao chang,khang khi mot); Trade name (mundani)

BOTANIC DESCRIPTION

Acrocarpus fraxinifolius is a stately deciduous tree, attaining heights of 30-60 m; stem cylindrical, free of branches for up to 75% of its total height. Even above its massive plank buttresses, it can achieve a diameter of over 200 cm. The branches remain relatively thin and are horizontally deployed. Bark is thin and light grey in colour. Although a legume, it apparently does not have nitrogen-fixing nodules. *A. fraxinifolius* is deep rooting, sometimes upto 4.5 m into the soil.

Leaves bipinnate, about 30 cm with 3-4 compound leaflets and consisting of 5-6 elliptical, lanceolate leaflets 7-10 cm long and arranged in pairs; bright red when young, giving the tree its characteristic appearance.

Flowers appear on tree when leafless, up to 20 dense heads hanging down from branch ends, each 12 cm long, dripping nectar from the reddish-green to orange flowers.

Fruit an elongated and flattened pod, long-stipitate, narrowly winged; (min. 3) 10-18 seeded. Seed slightly lens shaped, brown.

BIOLOGY

The bisexual flowers are produced after shedding its leaves. In India, flowering and fruiting occur almost every year.



Acrocarpus fraxinifolius (Herbert Menendez)



Acrocarpus fraxinifolius (Herbert Menendez)



Acrocarpus fraxinifolius showing flowers still attached to the tree. (Herbert Menendez)

ECOLOGY

A. fraxinifolius grows best in submontane areas in the humid and subhumid tropics with a short, dry spell. It is very sensitive to frost. In Thailand, it occurs in evergreen gallery forest and is more frequent in India and Myanmar. Regenerates primarily in small, burnt areas, on open patches where fresh soil has been exposed and along newly constructed roads. *A. fraxinifolius* is a pioneer and demands light, but it can tolerate slight shade when young. It is most suitable for moderate altitudes with red soil and a moist climate.

BIOPHYSICAL LIMITS

Altitude: 0-1500 m, Mean annual temperature: 19-28 deg. C, Mean annual rainfall: 1500-2000 mm

Soil type: Grows best in deep, well-drained, clayey loam soils with a pH of 4-7. It also thrives in shallow and compacted soils.

DOCUMENTED SPECIES DISTRIBUTION

Native: Bangladesh, Bhutan, China, India, Indonesia, Laos, Myanmar, Nepal, Thailand

Exotic: Colombia, Guatemala, Honduras, Kenya, Malawi, Mexico, Nicaragua, Panama, Taiwan, Province of China, Tanzania, Uganda, Zimbabwe



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.

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PRODUCTS

Fodder: The foliage can be used as fodder.

Apiculture: *A. fraxinifolius* is a good source of nectar and a good bee forage.

Fuel: The wood is sometimes used for firewood in many places.

Timber: The sapwood is whitish; the heartwood is bright red to brownish-red with darker veins, making it very decorative. The wood is not very durable and is prone to attack by fungi and insects, but it impregnates well. It is heavy, moderately hard, and compact; specific gravity varies between 0.55 and 0.7 g/cubic cm. It is easy to work with tools and is well suited for turnery, carving and polishing. The wood is used for interior trim, panelling, furniture and cabinet work. Within its native range it is also used for shingles, general construction, floors, stairways, doors, tea crates, beehive frames, and after being impregnated, for railway ties.

Gum or resin: The wood exudes a gumlike resin when the trees are felled.

SERVICES

Erosion control: *A. fraxinifolius* has been recommended for reinforcing riverbanks and stabilizing terraces.

Shade or shelter: Ideal as a shade tree on tea and coffee plantations, for example, as planted in Kenya and Uganda. Known to have been planted as a windbreak in Tanzania.

Reclamation: Very good for reforestation of open areas.

Soil improver: Leaves are suitable for mulching.

TREE MANAGEMENT

In India, to ensure sufficient natural regeneration of this light-demanding species, the forest floor is cleared of weeds and raked, after which the canopy is gradually removed as young trees become established. Frequent tending is required until the crowns of the young trees close. Periodic weeding is required until they are well into their sapling stage; the 1st thinning should be performed 3-4 years after planting. As the tree requires a large crown for optimal growth, regular thinning is necessary until the stand is fully developed. On favourable sites, a mean annual increment of 10 cubic m/ha may be expected. In Malawi, 2-year-old trees yielded 33 t/ha of total aboveground biomass.

A. fraxinifolius coppices vigorously. Rotation period for fuel is 8-10 years and for timber 30-40 years. The tree should not be planted near houses as dry branches drop off. Competes with crops if grown in fields.

GERMPLASM MANAGEMENT

Seeds exhibit orthodox storage behaviour; seeds should be stored at low temperatures. A few seeds survived 7 years of storage at room temperature (Hong TD et al.,1996). There are about 13 000-47 000 seeds/kg.

PESTS AND DISEASES

So far, a few incidences of pests or diseases have been observed in *A. fraxinifolius*. Young trees are susceptible to termite attack, and in India *Atractomorpha crenulata*, a grasshopper, and the caterpillar of *Eurema blanda* defoliate seedlings in nurseries and young plantations. The tree is also a host for the wood borer *Xylosandrus compactus*, a small *Ambrosia* beetle. *Ganoderma lucidum* causes trunk and root rot wherever *A. fraxinifolius* is cultivated.

FURTHER READING

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SUGGESTED CITATION

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