

Acrocarpus fraxinifolius Wight. & Arn.

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FABACEAE (BEAN FAMILY)

No synonyms

Acrocarpo, árbol guijarra, cedro rojo, decro rosado, fresno, fresno hindú, Kenya shade tree, lazcar, mundani, pink cedar, shingle tree

Acrocarpus fraxinifolius is native to the tropical regions of Asia. Distributed naturally in India, China, Burma, Borneo, Sumatra, Indonesia, Vietnam, and Bangladesh, the species is part of tropical evergreen and subevergreen forests.

Acrocarpus fraxinifolius is a fast-growing tree, which annually can grow 1.3 to 3 m. The tree can reach 60 m in height and 2.4 m d.b.h. However, 90 cm is the most frequent d.b.h. The straight trunk has spurs and the round crown is composed of rising branches. The leaves are bipinnate, with five to six pairs of pinnae. The species grows in acid and calcareous soils, at elevations between sea level and 2000 m (Troup 1921). In Mexico, it prospers from sea level to 1700 m elevation, in places with annual precipitation between 500 and 3000 mm and temperatures between 15 and 26 °C.

The wood of *A. fraxinifolius* is hard and strong. Because it physically resembles ash and walnut woods, it is used as a substitute for these two species. The wood is used in the construction of houses and in the manufacture of furniture and packing cases. In Africa the tree is planted to provide shade in coffee plantations. *Acrocarpus fraxinifolius* is also cultivated as an ornamental (National Academy of Sciences 1979, Whitmore and Otarola 1976).

The flowers are scarlet red and arranged in axillary racemes. In its natural habitat *A. fraxinifolius* blooms during the dry season, and the fruits ripen 1 month after the bloom. Introduced in the Yucatan Peninsula (Mexico), the species flowers March through May, and the fruits ripen May through August. The fruits remain on the tree for 5 to 6 weeks. The dark brown legumes are 8 to 16 cm long, 1 to 2 cm wide, laterally flattened, narrowly alate on one side and belatedly dehiscent. Each fruit contains 5 to 7 seeds (Holdridge and Poveda 1975, National Academy of Sciences 1979). The seeds are ovate to oval, laterally flattened, 4.6 to 6.8 mm long, 3.4 to

4.2 mm wide, and 1.4 to 1.6 mm thick. The seedcoat is brown to dark brown, smooth, opaque, and cartaceous, and very hard with small fracture lines.

Fruits are collected from the ground or from the trees. A long pole with metal hooks is used to collect fruit from trees. The fruits are placed inside wood boxes with metallic mesh bottoms; the boxes are placed in covered, ventilated areas. When the fruits are dry, they are macerated by hand. The seeds are easily extracted by banging the fruits with a stick. Impurities are removed from the seeds in several ways. One method involves using sieves. The other method involves using the air current of a fan. In this later method, the seeds are placed in a vertical column separator of impurities through which flows a stream of air. The materials that are lighter than the seeds are quickly removed. Clean seeds average 31,600 per kg. The seeds can be stored in polyethylene bags at room temperature for more than 1 year without losing viability (Chavelas and Devall 1988a).

Because the seed teguments are hard and impermeable, pretreatment is required. Two forms of treatment are used: scarifying with concentrated sulfuric acid for 10 minutes or submerging the seeds for 1 minute in water at a temperature of 90 °C. They then are left soaking in cool water for 5 to 6 hours. The treated seeds are planted 2 cm deep in seedbeds, and germination occurs within 15 to 30 days. Germination is epigeal (Chavelas and Devall 1988a).

ADDITIONAL INFORMATION

The hilum is subbasal, circular, and generally covered by a small funicular aril. The micropyle and lens are indiscernible. The endosperm is abundant, whole, located on the lateral surfaces of the embryo, cornaceous, whitish, translucent, and

gelatinous when it comes in contact with water. The yellow embryo has a straight axis and is almost bilaterally symmetrical. The cotyledons are shaped like the seed, whole, expanded, flat, foliaceous, and independent of one another. The plumule is partially developed in pinnae. The radicle is conical, prominent, and slightly oblique (Hutchinson 1964; Watson and Dallwitz 1983a, 1983b).

