

20. *Albizia lebbbeck* (L.) Benth.

Taxonomy and Commercial Grade

Cambodian name	: Chres
Scientific name	: <i>Albizia lebbbeck</i> (L.) Benth.
Family	: Fabaceae
Commercial grade-Cambodia	: Luxury

Distribution and Habitat: *Albizia lebbbeck* (L.) Benth is found in dense deciduous forests in tropical and sub-tropical countries of Asia, such as Laos, Cambodia, Malaysia, Indonesia and Vietnam, Africa (Dy Phon, 2000) and Australia. It has been widely cultivated and is now pantropical. The species grows poorly on heavy clays, but grows well on fertile, well-drained, loamy soils, in areas that receive from 600-2500 mm of rain per year. However, this species is also capable of tolerating years with as little as 300 mm of rainfall. It is normally encountered below 1800 m a.s.l., and prefers mean annual temperatures from 20-35°C. This tree is nitrogen-fixing, and tolerates acidity, alkalinity, heavy and eroded soils, waterlogged soils, and drought. Older trees can survive grass fires and intense night frost, and although these events will kill off aboveground growth of young trees, new growth normally follows (DFSC, 2000). In Cambodia, it is found in Stung Treng, Ratanakiri, Koh Kong, Battambang, Preah Vihear and Kampong Thom (Khorn, 2002; see map).

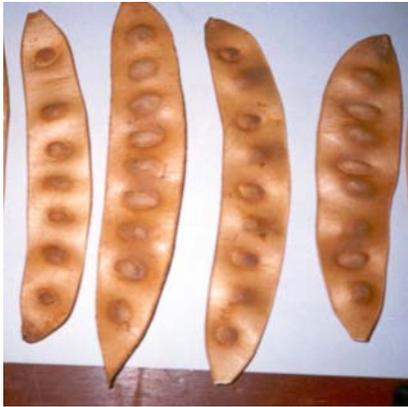


Gene Ecological Zones: Coastal Cardamoms (A), Central Lowlands (d), Central Annamites (G).

Botanical Description: This deciduous tree is 15-20 m tall and sometimes up to 30 m tall (DFSC, 2000). It produces boles from 30-40 cm in dbh (Dy Phon, 2000). The gray, cork-like bark is fissured and somewhat flaky. Compound, bi-pinnate leaves produce 2-4 pairs of pinnae, each of these with 2-11 leaflets. Tree growth is seasonal, with no growth in the early part of the dry season. Leaf loss occurs 2-3 months later, and the tree remains leafless for 1-2 months. Towards the end of dry season growth resumes and flowering begins (DFSC, 2000).

Flowering and Fruiting Habit: Green or creamy-white, fragrant flowers form in large heads around 5-7.5 cm wide. Flowers produce stamens from 1.5-2 cm long. Flowering and seeding occurs in the wet season, and unless the trees have been frequently coppiced, they will produce large amounts of seed every year. Mature pods remain on the tree for 3-4 months. Within its natural area of distribution, flowering occurs September-October and pods mature in May-July. In India flowering is in March-May, with fruit maturing in August-October. In Sudan it flowers in March-May and bears fruit from May-August. In Tanzania ripe pods can be found July-December with a peak in August-October. Pollination is by insects (DFSC, 2000).





Fruit and Seed Description: Fruit pods are indehiscent, pale straw to light brown (at maturity), 15-25 cm long and 3-5 cm wide, papery to leathery, flat and without a constriction between the seeds. Seeds are brown, flat, from 8-10 long and 6-7 mm wide, with 6-12 placed transversely in the pod. There are 7,000- 12,000 seeds per kg (DFSC, 2000).

Seed Collection: The pods are mature when they have turned light yellow and should be harvested when the last patches of green are disappearing. It is important that collection is not delayed as insects can very quickly infest the mature pods. It is possible that early collection followed by after-ripening in the shade could minimize the damage (DFSC, 2000). Seeds are usually collected from the tree or from the ground after shaking the branches. In seed source areas, the ground is usually cleared and sometimes burnt to prepare for seed collection. To ease collection, a cover can be spread out on the ground. The optimal time of collection is reached when the fruits have changed in colour from green to brownish. Maturity can be confirmed by a cutting test.

Seed Handling: Even when the pods are collected early many are insect infested and temporary storage should be as short as possible as the insects develop during this phase. If the pods are collected when they are still green, the bags should be kept open during transport to ensure ventilation. Pods are dried directly in the sunlight until they rattle and become brittle. The seed is extracted by beating or in a flailing thresher, which is very effective for this species. After extraction the seed is dried directly in the sunlight and pod segments and debris are removed in a seed-cleaning machine (DFSC, 2000).

Sowing and Germination: This tree can be established by direct sowing, using container-grown stock or as bare-rooted seedling or cuttings. When sown directly, it is necessary to weed the rows for several years. Germination starts within a few days and is complete in a month (DFSC, 2000).

Seedling Production: To reduce the field establishment period, seedlings can be raised in nursery beds for one year or more and cuttings taken to transplant with about 25 cm root and 10 cm shoot. For production of bare rooted seedlings or cuttings, seeds are sown in lines about 15 cm apart with the seeds spaced about 2-3cm and about 1cm deep. About 40 g seed is required for sowing 1m² of nursery bed. Best seedling development is obtained in full sunlight (DFSC, 2000).

Uses: Timber is in high demand for cabinet-making and other types of interior construction. In local medicine, the flower emollient is used as a poultice to be applied to boils. The bark

and seed astringent are used against diarrhea, dysentery and hemorrhoids. The seed yields oil used as a cure for leprosy (Dy Phon, 2000). This is an excellent fuel-wood and charcoal species. The shallow root system makes it a good soil binder and recommendable for soil conservation and erosion control (DFSC, 2000).

Albizia lebbbeck is one of the most promising fodder trees for semi-arid regions. It has leaves during a large part of the wet season and digestibility of the twigs is considerably higher than that of most fodder trees. The concentration of crude protein is about 20% for green leaves, 13% for leaf litter and 10% for twigs. In vitro digestibility is about 45% for mature leaves, 70% for young leaves and 40% for twigs. Leaves, flowers and pods fall to the ground gradually during the dry season and can be browsed on the ground (DFSC, 2000).

Current Status: Because the wood has a high value and a high demand in the market, this species is over-exploited and in danger of extinction if adequate protection measures are not implemented. Its distribution is scattered and its habits have been destroyed by forestland conversions and selective illegal logging. The number of mature trees has been reduced significantly and it is now difficult to find significant sources of germplasm.

In 2002, the second CTSP meeting on the Forest Gene Conservation Strategy defined *Albizia lebbbeck* (L) Benth as a priority species in need of immediate conservation intervention and appropriate protection. This species is protected by Cambodian Forestry Law No.35.

IUCN Classification: EN A1cd

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