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Paraserianthes falcataria

Hidayat, Jajat; Iriantono, Djoko; Ochsner, Peter

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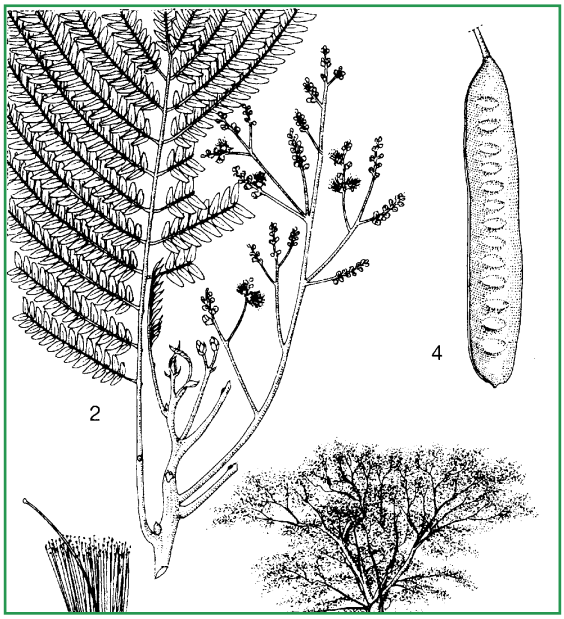
Paraserianthes falcataria (L.) Nielsen

Taxonomy and nomenclature

Family: Fabaceae (Mimosoideae)

Synonyms: *Falcataria moluccana* (Miq.) Barneby & J. W. Grimes, *Albizia moluccana* Miq., *Albizia falcata* Backer, *Albizia falcataria* (L.) Fosberg.

Vernacular/common names: sengon, and jeunjing (Indonesia general); sengon laut (Java); sika (Moluccas); batai (Peninsular Malaysia and Sabah); kayu machis (Sarawak); white albizia (Papua New Guinea); molucan sau, falcata (Philippines).



1, Tree habit; 2, Flowering branch; 3, Flower; 4, Pod.
From: Plant Resources of Southeast Asia No. 5: 1.

Distribution and habitat

Indigenous to Maluku (Indonesia), Papua New Guinea, the Solomon Islands and the Bismarck Archipelago. The species is widely planted in tropical regions. Within the area of natural distribution it is found from sea level up to 1.200 m altitude in areas with mean annual temperature and precipitation of 22-29° C and 2000-4000 mm, respectively. As a pioneer species, it is usually found in secondary lowland rainforest, on river flood terraces or along roadsides near the sea. The species is adapted to deep, well-drained, fertile soils, either alkaline or acid. As a plantation tree it does not tolerate poorly drained or flooded areas, and it is also sensitive to fire and strong wind.

Uses

The species is a multipurpose tree, used for a number of products and services. Products from the species are fodder, fuel, fibre and timber. Cattle can feed on the leaves. The wood is used for fuel and charcoal and for pulp production. It is suitable for light construction, handy crafts, cigar boxes, veneer, matches, musical instruments, particleboards and cabinets. Services provided from the species are erosion control, shade crop (e.g. coffee, cocoa, tea), reclamation of mining land, nitrogen fixing, soil improvement, and as an ornamental tree. In addition to forest plantations, it is commonly planted in agroforestry systems and has shown potential in alley farming. In a trial in Indonesia where it was managed in hedges 4 m apart it produced 2-3 tons of green leaf manure/ha/year.

Botanical description

It is recognised as one of the worlds fastest growing trees. The height of a 1-year-old tree can be 7 m, and a 12-year-old tree can reach 39 m in height and 63.5 cm in diameter. Mature trees can be 100 cm or sometimes more in diameter. The trees are mostly without buttresses. The bark is grey or greenish, smooth; boles are straight and cylindrical. Leaves are compound, up to 40 cm long, with (4-)8-15 pairs of pinnae, each pinna with (8-)15-25 leaflets; leaflets oblong, 3-5 wide and 6-12 mm long. Flowers are bisexual, calyx and corolla bell-shaped, stamens numerous, anthers minute.

Fruit and seed description

Fruit: the fruit is a straight pod, splitting open along both sides, many-seeded, green when immature and yellowish brown when mature.

Seed: seed is flat with thick seed coat, no wings and no endosperm, 3-4 mm in width and 6-7 mm in length, green with a brown circle in the centre part. One kg contains about 40,000 seeds.

Flowering and fruiting habit

The trees will normally begin to produce large quantities of seeds when they are 3-4 years old. In Java, flowering occurs March-June and October-December. Ripe pods usually occur two months after flowering. When ripe, the pods open, and the seeds scatter on the ground.

Harvest

Because scattered seed on the ground is difficult to gather, the pods should be collected just before maturity when the colour is yellowish brown. A climber should collect pods in the morning or afternoon. During the day, the brownish pods are easily opened and a lot of seeds will fall to the ground. The climber must cut twigs or branches bearing ripe pods. It has been reported that the average seed production of a plantation in Kediri, Java, is 0.3-0.7 kg/tree/year.

Processing and handling

Small amounts of seed can be manually extracted while larger amounts of dried fruits are often threshed to extract the seed. Extraction can be done using a stick and beating the fruits in a sack or by beating the fruits on a tarpaulin. Mechanical thresher is used to extract larger seed lots. Seeds are manually separated from other materials by winnowing or using cleaners or screens. The clean seed is dried to reduce the moisture content.

Storage and viability

Storage behaviour of the seed is orthodox. Viability of seed with 8% moisture content is not significantly lost after storing for 1 1/2 years at 4-8°C. During storage, the seed is packed in sealed polythene bags.

Dormancy and pretreatment

The seed will be slow to germinate without proper pretreatment. Before sowing, the seed is immersed in boiling water for 1-3 minutes followed by soaking in water for 18 hours. Seed that has been pretreated germinates within 5-10 days while germination of untreated seed is delayed up to 4 weeks. After pretreatment, germination rate of good seed normally reaches 80-100%.

Sowing and germination

Pretreated seeds are usually broadcasted in a seedbed and covered with a layer of fine sand. 200 g seed usually requires a seedbed of 5x1 meter. The soil of the seedbed must be loose and well drained. Moderate shading is sometimes used during germination. The seedling will be ready to transplant into polybags after two weeks. When seedlings in polybags reach 20-25 cm or approximately at the age of 4-5 months, they are ready to be transplanted to the field. Because of its fast growth, only one complete and three spot weedings are necessary during the first year

Selected readings

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Paraserianthes falcataria at BKPH Pare, Kediri, Java. Photo: Jajat Hidayat, BPTH Bandung.

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Authors: Jajat Hidayat, Djoko Iriantono and Peter Ochsner, IFSP

Danida Forest Seed Centre	Phone: +45-49190500
Krogerupvej 21	Fax: +45-49160258
DK-3050 Humlebaek	Email: dfsc@sns.dk
Denmark	Website: www.dfsc.dk