Samanea saman (Jacquin) Merrill

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Samanea saman (Jacquin) Merrill

Taxonomy and nomenclature

Family: Fabaceae (Leguminosae), Mimosoideae
Synonym: *Albizia saman*, *Pithecellobium saman*, *Enterolobium saman, Mimosa saman*, *Inga saman*.
Vernacular/Common names: Monkey pod, Rain tree, Saman (English), Guannegoul (French, Spanish).

Distribution and habitat

Samanea saman is native to northern South America, central America and Caribbean Islands. It is now spread and cultivated throughout the tropics.

S. saman grows in the humid tropics with short dry season. It mostly grows in lowland but occasionally up to 1400 masl. Rainfall range (700-) 1000-2500 (-3000) mm. It is light demanding and therefore thrives in open areas. It can grow on a wide variety of soil types but is sensitive to acidity; pH should be higher than 5.5. It is tolerant to short periods of water-logging. It rarely suffers serious hurricane damage.

Uses

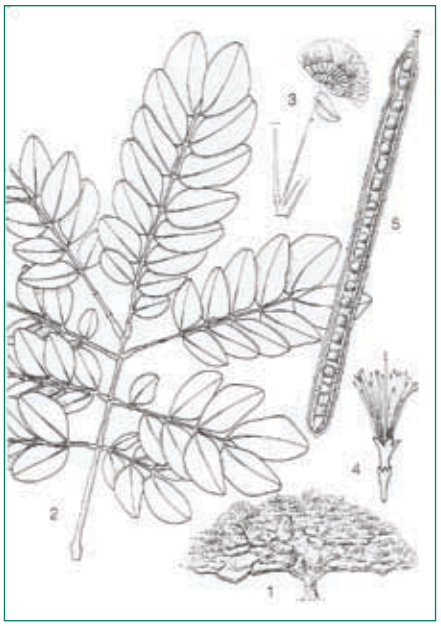
The wood is moderately hard and durable and is easy to work; it is therefore excellent for wood carving, cabinets, household implements and construction.

Abundant flowering and broad shading crown make the species a popular ornamental, especially as a park tree.

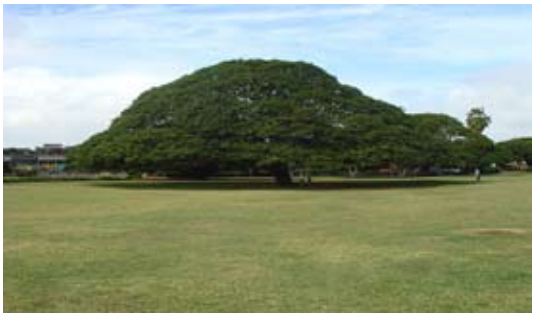
The dome-shaped, low crown provides a very strong shade tree even at low sun positions. Interception is relatively low because the leaves fold during rain. The tree is nitrogen fixing.

Botanical description

S.saman is most conspicuous with its low branching and large, broad, dome shaped crown, with a diameter that is often wider than the height of the tree. The tree tends to increase its width rather than its height when given sufficient space. Young bark is smooth, pale, grey to brownish; it turns gray and rough with age. Branches are often overgrown with epiphytes. Leaves alternate, compound. Petiole 8-10 cm with swollen base. Threadlike stipules. 2-6 pairs of pinnae, each bearing 6-16 diamond shaped leaflets, bright green and smooth above, dull and finely pubescent below. Leaves fold up during night and rainy days. The species is evergreen in humid climates and tends to exhibit a shorter or longer period of deciduousness in seasonal dry climates. Inflorescences consist of 10-15 flowers in each head. Individual flower appearance is dominated by long red and white stamens.



Samanea saman (Jacq.) Merrill - 1, habit; 2, leaf; 3, inflorescence; 4, marginal flower; 5, pod. From Hanum and Maesen 1997



Characteristic wide crown of open growing *S. saman*

Leaf form (left) and flower (right)

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Fruit and Seed description

Fruit: The fruit is an indehiscent pod with 10-20 seeds. The pod is about 10-20 cm long, 1.5-2 cm wide and 5-6 mm thick, straight or slightly curved. The mature pod is brownish-black, leathery, and slightly constricted between the seeds. Seeds are embedded in a sweet and edible, sticky and brownish pulp.

Seed: Seeds are oblong – ellipsoid, flattened, 8-12 mm long, 5-8 mm wide and 4-5 mm thick, with smooth brown surface and a yellowish pleurogram. There are about 4000-6000 seeds per kg.

Flowering and fruiting habit

Open, exposed trees may start flowering after 5-6 years. Trees growing in permanent humid climates often have some flowers any time of the year. In seasonal dry climates flowering starts at the end of the dry season, the same time as the tree changes leaves. Flowering is often prolific with trees covered by thousands of pinkish flowers.

Fruits are eaten by a wide variety of wild and domestic animals which disperse the seed.

Harvest

Seeds are collected by picking up mature pods under the tree. Natural shedding may be accentuated by shaking fruit bearing branches. Pods should have attained the mature dark colour; early picked pods are reported to contain few viable seed.

Processing and handling

Seed extraction can be quite difficult because seeds tend to stick in the indehiscent pods. Dry fruits may be disintegrated by pounding in a mortar or threshing in a hammer mill or the like. Seeds may also be extracted from dung from animals that have eaten the pods. In the Philippines and Vietnam ants and termites are sometimes uses deliberately for removing pulp.

Storage and viability

Seeds are orthodox and can be dried to low moisture content (4-6%) and stored in a dry and cool place. Cold storage in a refrigerator will prolong viability, presumably to several years.

Dormancy and pretreatment

Physical dormancy develops with drying, but few fresh seed will germinate without pretreatment. Manual scarification e.g. hot wire burning, nicking or filing is most efficient. Bulk pretreatment e.g. by pouring seeds in nearly boiling water and letting the seed cool with the water. Alternatively treatment by soaking 4-8 minutes in concentrated sulphuric acid.

Sowing and germination

Once dormancy broken and imbibition taking place germination is fast. Seeds have un-folded paracotyledons in 6-8 days under optimal conditions.

Selected readings

Staples, G.W. and C.R. Elevitch. 2006. *Samanea saman* (rain tree). Species profiles for Pacific Island Agroforestry. www.traditionaltree.org

Hamum, I.F. and L.J.G. van Maesen. 1997. Auxilary plants. PROSEA: 11.

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