

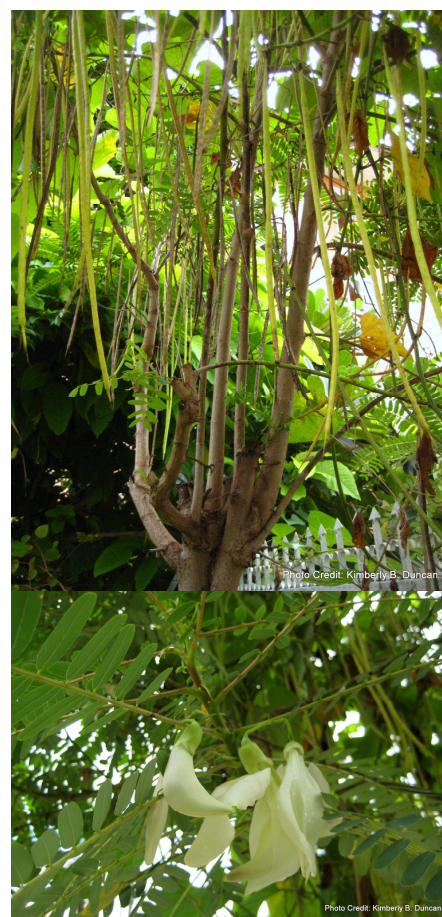
ECHO Asia Seed Fact Sheet

Scientific name – *Sesbania grandiflora*

English common name – Agati, hummingbird tree, vegetable hummingbird

Asian common names – (from Multilingual Multiscript Plant Name Database <http://www.plantnames.unimelb.edu.au/Sorting/Sesbania.html#grandiflora>)

- Bengali: Agati, Augusta, Bagphal, Bak, Buko.
- Chinese: 大花田菁 (白色花品种) Da hua tian jing (Bai se hua pin zhong), 木田菁 Mu tian jing.
- Hindi: अगस्ति Agasti (Aagasti), अगासती Agasati, बसना Basna, गाछ मूंगा Gaach-munga, Hathya, हटिया Hatiya, सेसवैनिया ग्रैन्डीफ्लोरा, अगेति/समय से पहले
- Japanese: アガチ Agachi, シロゴチョウ Shiro gochou, 白胡蝶 Shiro gochou.
- Khmer: Angkièdèi (Angkea dey), Pka angkea dey.
- Korean: 아가티 A ga ti, 웨스트인디안콩나무 We-seu-teu-in-di-an-kong-na-mu.
- Laotian: ແຄ ຂາວ Kh'ê: kha:w.
- Malay: Daun turi, Kacang turi, Kembang turi, Petai belalang, Pokok turi, Sesban getih, Toroy (Indonesia), Turi, Tuwi (Indonesia).
- Nepalese: अगस्ति Agasti .
- Sinhalese: Katura murunga, Katurumurunga kolle (leaves), Katurumurunga mala (flowers).
- Tagalog: Katurai, Katuray.
- Tamil: Agathi, Agatti, Akatti, அகத்தி Akatthi, அகத்திக் கீரை Agathi keeray, Peragathi.
- Thai: ดอกแสด Dok khæe (Daawk), ดอกแสดบ้าน Dok khæe baan, แสดบ้าน Khæe baan (Central Thailand), แสดแดง, แสดขาว แสดแดง Khæe daeng (Chiang Mai).
- Vietnamese: So đũa.



Variety – Local Thai variety with white flowers

General description and special characteristics – *Sesbania* is a small, quick-growing, loosely-branching tree with compound, alternate leaves. Large pea-like flowers, white to pink, grow in clusters of 2-5 at the base of leaves. Bears narrow pods 30-50 cm long and 8 mm wide.

Crop uses (culinary) – *Sesbania* flowers are eaten both cooked and raw, in salads, curries, and as a steamed vegetable. Young leaves and green pods can also be cooked and eaten. The dried leaves are used in some countries as a tea, which is considered to have antibiotic, anti-helminthic, anti-tumour, and contraceptive properties.

Crop uses (soil improvement) – *Sesbania* is a nitrogen fixing species which can be used as a green manure, either planted in the field as an annual cover crop or grown on rice paddy bunds. It has been reported to cover the ground in less than four weeks, and grow to a height of 6 feet (1.8 m) in 50 days, producing over 2 tons per acre (about 4.5 kg per hectare) of biomass (Nolte). When grown at the edges of fields or on paddy bunds, the side branches can be trimmed and incorporated as a green manure. It also casts sparse shade, making it a suitable inter-cropping species.

Crop uses (livestock production) – Sesbania is a high-quality livestock feed. It contains over 30% crude protein, with low levels of condensed tannins and high digestibility. Due to the presence of some anti-nutritive substances, however, sesbania should not be fed to chickens or other non-ruminants. Some authors recommend limiting ruminant's consumption of sesbania to 30% of their diet, although studies in Indonesia report up to 70% consumption in the dry season, when other species are not available.

Other uses – Sesbania can be used to cast light shade for tree nurseries or vegetable crops, as a living trellis for vining plants, and as a windbreak. Sesbania wood can be used for pulp and paper production.

Seasons of production – In Thailand, Sesbania flowers in the hot season, around April-May. As a fodder, it can be harvested for most of the year, at 3-4 month intervals.

Length of production and harvest period – When managed for fodder, side branches are removed every 3-4 months. Repeated pruning of main stem shortens the life of the tree. Some farmers use sesbania as an annual cover crop, planting into rice paddies then harvesting or tilling in the foliage before the next cropping cycle.

Pollination – The large hermaphroditic flowers are pollinated by birds.

Plant spacing – Commonly planted as individual trees or in rows, space 1-2 m (2 - 6.5 ft) apart in fence lines, field borders and on the bunds of rice paddies. Can grow as much as 5-6 m (16-20 ft) in its first 9 months. Can be planted in high densities (up to 3000 plants/ha) for pole timber production, or in low densities to produce dry season forage and fuelwood. For reforestation, it is recommended to space seedlings or 1 m long cuttings at 4x4 m (13x13 ft).

Production methods – Proper cutting management can greatly influence the productivity of Sesbania, as it cannot survive repeated cuttings. Farmers in Lambok, Indonesia cut only the side branches for fodder, leaving the main growing stem untouched. When foliage is no longer within reach, the trees are felled. The long straight poles can be used for firewood or light construction (although it is reported that Sesbania firewood burns poorly and produces much smoke).

Sesbania has been grown in windbreaks and in association with guinea grass. The sparse canopy and erect habit enables it to be grown on crop margins with little reduction in sunlight, while still providing N fixation. It can also be used to shade nurseries and gardens.

The harvesting of side branches has yielded 4.5-9 kg (10-20 lb) of leaves per year. A green manure yield of 55 t/ha of green material in 6.5 months was achieved in Java. Wood yields of 20-25 m³/ha/year have been achieved in commercial plantations in Indonesia.

Known environmental conditions for production – Sesbania is well adapted to hot, humid environments and does not grow well in the subtropics with cool temperatures reaching below 10°C (50° F). It is reportedly outstanding in its ability to tolerate waterlogging, which makes it ideally suited to seasonally waterlogged or flooded environments. Is adapted to rainfall conditions of 200 – 400 cm (80 – 160 in) but will grow in areas receiving only 80 cm (31 in).

Known soil requirements – Sesbania is known to tolerate both saline and alkaline soil conditions. It grows best in soils with pH 6.6 to 8.5, but is tolerant of a high variety of soil types, including heavy and very poor soils.

Known pests – Sesbania is thought to be relatively pest free in some environments, but it is susceptible to severe attacks from leaf webbers (*Azygophleps scalaris*), leaf feeders and stem borers, and can be highly susceptible to root-knot nematode (*Melodogyne incognita*). It is also susceptible to grey leaf spot (*Pseudocercospora sesaniae*), and Sesbania mosaic virus is reported in India.

Seed saving – Sesbania can be propagated by cuttings as well as seed. It seeds in lengthening days in pods of 15-50 seeds. Allow pods to dry before breaking open, then dry seeds and store. Viability deteriorates more rapidly than most seeds. Sesbania seed germinates easily without scarification, although scarification has been shown to increase evenness of germination.

References –

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