LOCAL NAMES
Swahili (mlindaziwa)

BOTANIC DESCRIPTION
Sesbania macrantha is a soft woody, slender shrub or small tree, 2-6 m tall; glabrous throughout except for the calyx margin and inner surface of the calyx teeth; a few hairs on the stipules and often on the rachis and leaflet margins of juvenile leaves; stems greyish-green, tinged purplish-black, aculeate or completely without prickles; stem of S. macrantha var. macrantha has prickles, but stem of S. macrantha var. levis does not.

Leaves 10-33 cm long; rachis aculeate or not; petioles 0.5-2.9 cm long; leaflets in 15-55 pairs, 14-31 x 3-8 mm, oblong, obtuse to slightly emarginate at apex, apiculate, slightly asymmetrical at the base, entire; stipule 14-25 x 3-5 mm, lanceolate to ovate-lanceolate, acuminate, slightly falcate, erect, early deciduous or occasionally rather persistent.

Raceme 11-26.5 cm long, flowers 6-20; peduncle 3-9 cm long, aculeate or completely without prickles; pedicles 9-22 mm long; bracts 5-10 mm long, linear to linear-lanceolate, acuminate, early deciduous; bracteoles 3-7 mm long, linear, early deciduous; calyx 5-12 x 6-10 mm, the teeth 1-2 mm long, broadly acuminate.

Pods 14-31 cm long, 3.5-6.5 mm wide, curved, long acuminate, thicker at the centre than at the sutures (which are sometimes slightly constricted between the seeds, particularly along the upper margin); the sutures of younger fruits drying green in contrast to the brown area; the septa 9-12 mm apart; pod 12-30 seeded; seeds dark olive-brown to almost black, not mottled, 6-8 x 2.5-3.5 mm, 2-3 mm thick, sub-cylindrical to cylindrical, hilium in central circular pit surrounded by a white rimmed-aril.

The specific epithet means large flowered in Greek.

BIOLOGY
It is not known whether self or cross-pollination or a mixed breeding system with preferential out-crossing produces seeds in perennial sesbanias. In the absence of information on reproductive systems of these species, it is recommended that seed collection be based on a large number of trees.

Provenance trial at Chipata, Zambia (Anthony Simons)

ECOLOGY
S. macrantha grows under a variety of climatic conditions. It is found in tropical and frost-free subtropical regions and is sometimes grown as an annual where frosts occur. Frequently found in tall grasslands associated with Acacia campylantha. Naturalized at elevations as high as 2000-2300 m in East Africa. However, growth rates and yield are lower than at lower elevations.

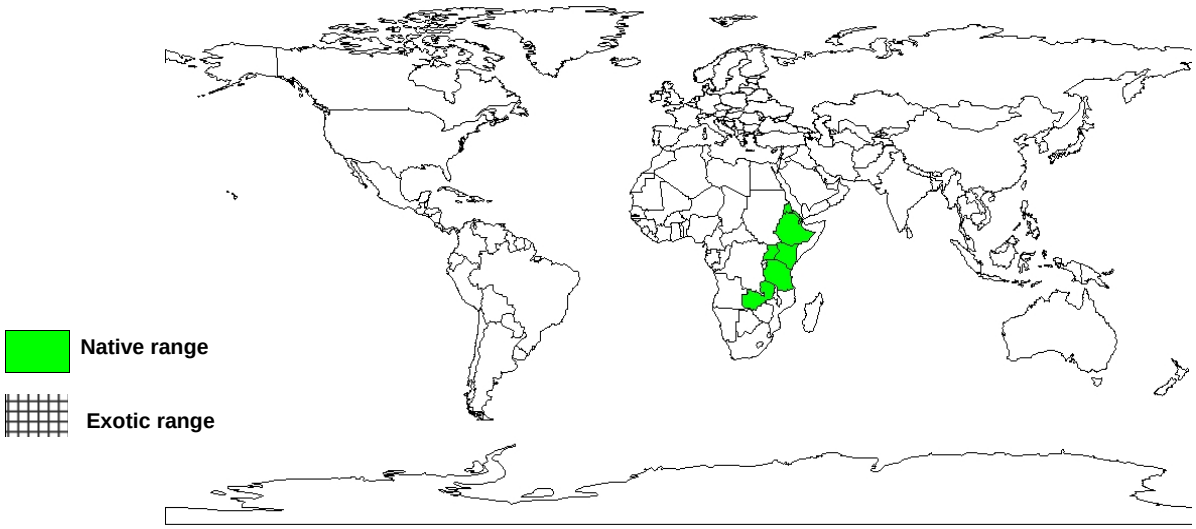
S. macrantha var. macrantha grows in swamps, streams and lake margins except in the moistest parts of its range; it is tolerant to cool temperatures. S. macrantha var. levis is found on riverbanks. Generally, it is not found in the same areas as S. macrantha var. macrantha.

BIOPHYSICAL LIMITS
Altitude: S. macrantha var. macrantha: 1100-2300 m; S. m. var. levis: 800-900 m, Mean annual rainfall: 900-2000 mm

Soil type: Grows on a variety of soil types.

DOCUMENTED SPECIES DISTRIBUTION

Native: Djibouti, Eritrea, Ethiopia, Kenya, Tanzania, Uganda, Zambia
Exotic:



The map above shows countries where the species has been planted. It does neither suggest that the species can be planted in every ecological zone within that country, nor that the species can not be planted in other countries than those depicted. Since some tree species are invasive, you need to follow biosafety procedures that apply to your planting site.

PRODUCTS
Food: Seeds are eaten after removing the seed coat by roasting. This generally occurs in times of food scarcity.

Fodder: Dry-matter digestibility of sesbania leaves and soft stems is often high, exceeding 60%. The fodder has a high protein value and so should not be fed as a sole ration but combined with roughage that is low in protein and high in energy. Fodder can be fed fresh, wilted or dried. Dried fodder can be stored and rationed over time or saved for times of shortage.

Fuel: For fuelwood, S. macrantha can be grown as individual plants, in hedgerows or in solid stands in many types of farming systems.

Other products: S. macrantha is used as a soap substitute for washing clothes; when mixed with water the saponins in its tissues produce a foam.

SERVICES
Shade or shelter: S. macrantha is grown to shade coffee.

Nitrogen fixing: Rapid growth, vigorous nodulation and high levels of nitrogen fixation make sesbanias excellent for soil fertility improvement. Rhizobium nodules on sesbanias are often abundant. They are thought to be relatively short lived, senescing when the trees flower or are coppiced. This is believed to result in a release of nitrogen into the soil at those stages of development or management.

Soil improver: With a life span of only a year but with outstanding growth and biomass production, S. macrantha is an ideal candidate for improved fallows, enrichment of fodder banks and green manure production in biomass transfer systems for soil improvement.

TREE MANAGEMENT
Their early rapid growth helps sesbanias overcome weed competition better than most multipurpose tree species, reducing the amount of weeding required during establishment. When coppicing, lower cutting heights produce higher foliage. S. macrantha reaches maturity after 12 months, with a mean height of 3.98 m.

GERMPLASM MANAGEMENT
Seed storage behaviour is orthodox. There are approximately 20 000 seeds/kg.

PESTS AND DISEASES
Nematodes infest sesbanias, reducing their growth. Nematodes induce root galls quite distinct from the nitrogen-fixing nodules that arise from the root surface.

FURTHER READNG

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SUGGESTED CITATION

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