

New herbage plant cultivar

B. Legumes

24. Sesban

(a) *Sesbania sesban* (L.) Merrill (sesban) cv. Mount Cotton

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Origin

Sesbania sesban cv. Mount Cotton was originally collected by the University of Hawaii in Uganda. The seed was donated to the International Livestock Centre for Africa (ILCA) and given the ILCA Germplasm Number 15036. Seed of a number of accessions of *S. sesban* including ILCA 15036 was sent to The University of Queensland for evaluation in Australia.

Morphological description

Sesbania sesban is a shrub or small tree to 6 m in height. It branches well from the main stem which can be up to 10 cm in diameter. Stems are usually pubescent. Leaves are 2-18 cm long, pinnately compound with 6-27 pairs of linear oblong leaflets up to 26 × 5 mm in size. Racemes are 2-20 flowered up to 20 cm long. Flowers are yellow, commonly flecked or speckled with red-brown. The standard is ovate 11-20 cm × 13-21 mm, keel 11-21 mm × 6-9 mm. Pods are subcylindrical, slightly curved 20-30 cm × 2-5 mm, straw coloured, 10-50 seeded and glabrous. Seeds are subcylindrical 3-4.5 mm × 2 mm × 2 mm, olive green or brown and usually mottled. (Evans and Rotar 1987).

Cv. Mount Cotton has glabrous stems with a red-brown colouration at the base. It has a larger number of branches from the mainstem than the species norm.

Agronomic characters

S. sesban regenerates rapidly after cutting or grazing. In south Asia and Africa it is widely used as a forage in "cut and carry" livestock feeding systems. It has been reported to grow over a wide range of climatic and edaphic conditions (National Academy of Sciences 1983). It tolerates extremes of soil pH, waterlogging (Galang 1988) and soil salinity up to 1.4% soil salt concentration (Hansen and Munns 1985). It is reasonably tolerant of cool temperatures but does not withstand frost.

Cv. Mount Cotton has proved outstanding in forage production trials at 5 locations close to the coast in Queensland, from Brisbane in the south to Innisfail in the north. At all sites cv. Mount Cotton and ILCA 15022 (a similar accession) were superior in terms of persistence and dry matter yield to other accessions of *S. sesban* and to *Leucaena leucocephala* cv. Cunningham (Gutteridge and Shelton 1991).

In other studies at The University of Queensland, *S. sesban* was found to have a high nutritive value with up to 28% crude protein in the leaf and a high *in sacco* dry matter digestibility of 86% (Ahn *et al.* 1989).

A grazing study over 15 months indicated that *S. sesban* is an excellent fodder species for young growing cattle. Liveweight gains of 0.7 kg/head/d were recorded for yearling heifers grazing a mixed association of *S. sesban* and signal grass (*Brachiaria decumbens*). This compared with liveweight gains of 0.4 kg/head/d for similar cattle grazing signal grass fertilised with 200 kg/haN per year (Gutteridge and Shelton 1991). There was no apparent toxicity or anti-nutritive effects of the *S. sesban* on the health or well-being of the cattle. Browsing by cattle caused some damage to individual *S. sesban* plants which are quite brittle in comparison with other trees and shrubs.

Flowering of cv. Mount Cotton is prolific and will occur within 12 months from sowing.

Flowering appears to be seasonal and may be linked with photoperiod as peak flower production occurs in April–May in south-east Queensland. Seeds mature in 2–3 months and require scarification for uniform germination. There are 55 000–80 000 seeds per kilogram.

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