

BUSH VELVET BEAN

Velvet Bean, Bengal Bean, Mucuna, Picapica, Pwa Grate, itchy bean

Mucuna pruriens

Fabaceae

ECHO® PLANT INFORMATION SHEET

Description

Bush forms of *Mucuna pruriens* grow rapidly, but have a more compact growth habit than vining types. The leaves are large and trifoliate with lateral leaflets 7–15 cm long, 5–12 cm wide. Flowers are light purple or white, resulting in pods 4–13 cm in length. Wild forms of *M. pruriens* have pods with hairs that, due to a protein called mucunain, are irritating to the skin and can cause severe itching; cultivated varieties (var. *utilis*) have non-stinging hairs. Mature, dry pods have a hard shell with each pod containing 4–6 seeds which, depending on the variety, vary in color (from black to white, brown, or mottled) and are 1–2 cm long.

Uses

M. pruriens fixes nitrogen and is, thus, widely used for soil improvement as a green manure cover crop. It also produces high biomass, though not as much as vining velvet bean. Bush forms of *M. pruriens* are less likely than vining types to climb adjacent plants, limiting the ability of bush types to suppress weeds but making them an excellent choice for intercropping between rows of maize. Though the seeds have been used as a coffee substitute, human consumption is not generally recommended due to the presence of antinutritive substances including L-dopa, a compound used to treat Parkinsons disease that is toxic if not taken in correct doses. *M. pruriens* seeds, pods, and foliage are used in a variety of ways as animal feed, usually as a supplement for ruminants; exercise caution by consulting the literature for appropriate quantities, feeding in small amounts, and taking any needed steps (e.g., ensiling, fermentation) to reduce L-dopa. *M. pruriens* is also noted for suppression of nematodes.

Common Names

- French
 - pois mascate arbustif
 - fève de velours
 - poil à gratter
 - pois du bengale
- Spanish
 - Frijol Terciopelo
 - chiporozo,
 - guisante de Mascate
 - mucuna ceniza
 - mucuna ceniza

Cultivation

- **Elevation** – Up to 2100 m
- **Rainfall** – 400–2500 mm/year; a good option for the humid tropics
- **Soil Types** – Prefers well-drained soils with pH 5–8, intolerant to water logged soils
- **Temperature Range** – 19–27° C.
- **Day Length Sensitivity** – Shorter days induce flowering and rapid decline of vines
- **Light** – Prefers full sun

The large seeds germinate quickly. Sow them 3–7 cm deep with 1 m between rows and 20–80 cm (closer to 20 cm for bush *M. pruriens*) between plants (this spacing requires 20–40 kg/ha of seed). Seeds do not require scarification or inoculation with rhizobia prior to planting. If interplanting bush *M. pruriens* with maize, the beans should be planted a few weeks after the maize to minimize competition; but they can be planted sooner than vining. Plants of bush types may not persist in the field as long as vining varieties. Seeds left on the ground will regrow.

Harvesting and Seed Production

Seeds mature 100–280 days after onset of flowering with most varieties. Pods should be picked after turning dark brown or black.

Pests and Diseases

There are few pest problems due to production of toxic compounds.

Cooking and Nutrition

M. pruriens grains can be toxic to humans and non-ruminant animals. Extensive soaking and boiling is required for human consumption. Anti-nutrients include alkaloids, trypsin, phytate, lectins, saponins, and L-dopa.

References

Cook *et al.* 2005. [Tropical Forages: an interactive selection tool](#). [CD-ROM], CSIRO, DPI&F(Qld), CIAT and ILRI, Brisbane Australia

Heuzé *et al.* 2015. [Velvet bean \(Mucuna pruriens\)](#). Feedipedia, a programme by INRA, CIRAD, AFZ and FAO.

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