VELVET BEAN

velvet bean, Bengal Bean, Poil à Gratter, Mucuna, Picapica, Pwa Grate, Fève De Velours

Mucuna pruriens Fabaceae

ECHO® PLANT INFORMATION SHEET

Description

Vining forms of velvet bean grow rapidly, with climbing or trailing vines 6-8 m long. 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 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

Velvet bean fixes nitrogen, making atmospheric nitrogen available to plants, and produces high amounts of biomass. Thus, it is widely used for soil improvement as a green manure cover crop. Its dense leaf canopy gives farmers an option for controlling aggressive weeds including cogongrass (*Imperata cylindrica*). 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. Velvet bean 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. Velvet bean is also noted for suppression of nematodes.

Common Names

- French
  - pois mascate volubile
  - pois du bengale
- Spanish
  - Frijol Terciopelo Velvet Bean
  - Frijol Terciopelo
  - Chiporozo
  - guisante de Mascate
  - mucuna ceniza
  - ojo de venado
- Hindi
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Cultivation

- **Elevation –** Up to 2100 m, best at altitudes below 1,500 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 –** Flowering increases with shorter days
- **Light –** Prefers full sun

The large seeds germinate quickly. Sow them 3-7 cm deep with 1 m between rows and 20–80 cm between plants (this spacing requires 20–40 kg/ha of seed). Seed does not require scarification or inoculation with rhizobia prior to planting. If interplanting vining velvet bean with maize, the beans should be planted at least a month after the maize to minimize competition. Plants of vining types grow over a longer period of time than non-vining types. Vining varieties are good choices for providing ground cover over an entire rainy season. 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.

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Cooking and Nutrition

Velvet bean seeds 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.

Varieties

The more common 90-Day variety flowers at any time and produces seeds in about 90 days, but is less vigorous. The tropical type lacks the itchy hairs found on other velvet bean pods and produces seeds in short days.

References

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