Introduction:

Velvet bean is an indigenous legume and a tropical crop native to Southeast Asia. It is related to soybean and kudzu and also is found in Africa, India, and the West Indies. In the Philippines, it has been planted as intercrop in backyard kaingin of our ancestors. Some farmers in the south use this fast-growing vines as shade around their homes and as survival food.

The velvet bean is a renovating plant, having the power to enrich the land on which it grows. Velvet beans and all the commonly-cultivated leguminous plants, have the advantage over other cultivated plants of being able to obtain a large proportion of their nitrogen from the air. Nitrogen, if purchased in commercial fertilizers costs more expensive. It is several times more expensive than an equal weight of phosphoric acid or potash, two compounds that make fertilizers useful but costly.

Characteristics

Velvet bean is an annual climbing vine that grows 3-18m in height. The slender stems may grow to 30 feet. The stems bear numerous, alternate, trifoliate leaves on short, hairy, fleshy petioles, with large, ovate leaflets which are about 10cm long x 8cm wide. Its flowers are white to dark purple and hang in long clusters. The plant produces clusters of pods up to 6 inches long, hard, curved, slightly ridged and covered with soft black, white or grey hairs giving them a velvety appearance. Each pod contains 3 to 6 seeds covered with reddish-orange hairs that are readily dislodged. The species name “pruriens” (from the Latin, “itching sensation”) refers to the result when one comes in contact with the hairs of the pods. The seed coat is hard, thick and glossy. One hundred seeds weigh approximately 109g. The roots are fleshy, with many nodulates produced near the soil surface.

Uses of Velvet Beans (Mucuna)

A. As Human Food

Velvet beans have potential to be a significant food. One major use of velvet bean by humans is to make a coffee substitute. (The coffee is called “nutri cafe” in Central America and the bean is sometimes called “Nescafe bean.”) It is still grown as a food crop by the Ketchi indigenous people in Guatemala where the bean is cooked as a vegetable. Ideally, the dopa would either be destroyed by the heat or remain in the grounds, leaving the coffee free of dopa.

According to Dr. Buckles, many people in Ghana eat velvet beans most days, using them primarily as a soup thickener. People in Benin mix 10-30% velvet bean flour with corn meal.

Velvet beans can be used as a human foodstuff but requires considerable care in their preparation, because of the toxic principle they contain. The toxic principle can be removed by boiling and soaking the seeds in several changes of water. In parts of Asia, the seeds are sometimes roasted before being eaten. In other parts of Asia, notably Java, the seeds are sometimes boiled, the seed-coat removed, and the decorticated seeds soaked in water, after which they are chopped, steamed, and left to ferment to produce a bean cake, ‘tempe benguk’, which resembles tempe produced from soybeans. The immature pods and leaves are occasionally boiled and eaten as a vegetable.

B. Velvet as Ruminant Feed

Velvet beans are a nutritious animal feed and are used mainly for grazing, although the mature seeds are also used in the manufacture of compound feeds, or fed directly to the animals. Before feeding, they are often soaked in water for 24 hours, or ground into a meal.

In rotation pasture component, it is one of the avenues for crop and livestock integration. It produces fodder for work animals like oxen and small ruminants like sheep and goats during the wet season. Stored mucuna haulms added to food crop and cereal residues provide the supplementary feedstuffs needed by work animals during the dry season.

Velvet bean vines can be used either for pasture, for feeding green, or for hay. The large proportion of leaves are highly nutritious and rich in nitrogen.

C. Velvet Beans as a Non-Ruminant Animal Feed

In Mexico, velvet beans are cooked for half-hour, mixed with an equivalent amount of maize and then ground into pig feed but should constitute less than 25% of the diet. They are considered unsuitable for poultry. The residual cake has a protein content of 15-20%.

D. Velvet Beans for Soil Fertility Improvement and Soil Cover

Because velvet beans are legumes, they can fix nitrogen from the air and return it to the soil, so many farmers used it in lieu of nitrogen fertilizers. In organic farming, the basic concern is to rebuild soil fertility through the use of compost materials. It is one of the endemic legumes that can give large biomass in a short period of time because of its many large leaves Velvet beans as a soil cover control soil fertility loss and soil erosion.

The velvet bean is a great cover crop with corn in the tropics. It adds nitrogen fertilizer to the soil for sustainable agriculture on one fixed plot of land. A simple N balance calculation indicated that the velvet bean-maize sequence would lead to a build up of soil nitrogen as
compared with groundnut-maize sequence would, in the long term, deplete soil N reserves.

The velvet bean is creating a lot of enthusiasm among farmers and environmentalists. This Nitrogen-fixing herbaceous legume protects the land and helps crops yield well with few inputs. In addition, *Mucuna* offer the likelihood that aside from it being a groundcover, it may restore various extreme soils and seemingly impossible tropical sites.

**E. Mucuna as Weed Control**

“Weeds don’t like velvet beans”, because they suppress the growth of weeds. It is a means of crowding or shading troublesome weeds, such as bermuda, nut grass, and johnson grass. In a study of uncontrolled cogon grass that reduced maize yield to zero, planting of velvet beans for cogon grass control proved to be a better alternative for farmers who can not afford to purchase herbicides.

**F. Mucuna as plant disease and insects control**

Velvet beans are viewed as organic sustainable pesticide crop. It is a natural control for several types of nematodes infesting southern soils, including root-knot, cyst, reniform and lesion nematodes, thereby providing additional financial benefits for farmers. Thus, it restricts access and use of synthetic chemical nematicides (Rodriguez-Kabana).

**G. Mucuna as nutraceutical.**

The seeds of velvet beans contain *L*-dopa, which is used in the treatment of Parkinson’s disease. It also contains other substances like: *beta-sitosterol*, a potential anti-inflammatory, antileukemic, antitumor, cancer preventive, and estrogenic agent; *gallic acid*, a potential antioxidant, antiseptic, antiviral agent, and cancer preventive; and *lecithin*, a potential Alzheimer’s preventive. Velvet bean is also used in India, Venezuela, and Mexico to treat asthma, snake bites, cancer, coughs, diarrhea, mumps, ringworm, syphilis, tumors and as a scorpion antidote.

**References:**

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Udensi E. Udensi, I. Okezie Akobundu, Albert O. Ayeni, and David Chikoye. Management of cogongrass (*Imperata cylindrica*) with velvetbean (*Mucuna pruriens var. utilis*) and herbicides


**Common Names:** mucuna, nescafé bean (Central America), pô de mico, cowhage, cow-itch, bengal bean, mauritius bean, itchy bean, buffalo bean, sea bean

**Local Names:** Sabawil (Ilocano), Futakor (Barlig, Mt. Province)

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