

Botanical Characters and Toxic and Curative Properties of *Mucuna pruriens* Linn.

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Abstract: *Mucuna pruriens* Linn. is a well-known Indian medicinal plant that has been used for many years in traditional Ayurveda Indian medicine to treat illnesses including parkinsonism. Pharmacological research on this plant has focused on its potential as an anti-diabetic, aphrodisiac, anti-cancer, anti-epileptic, and anti-microbial agent. This plant has produced a broad variety of phytochemical components that have been identified. In light of the numerous new results on this plant that are significant, a detailed explanation of the morphological, phytochemical contents, traditional usage, pharmacological actions, and analytical methodologies are given.

Key words: Medicinal plant, Ayurveda, *Mucuna pruriens*, pharmacological actions.

I. INTRODUCTION

Over 150 species of annual and perennial legumes fall within the genus *Mucuna*, which is a member of the Fabaceae family and subfamily Papilionaceae. The velvet bean, *Mucuna pruriens*, is a common plant in tropical and subtropical areas of the world and is one of the many underutilized wild legumes. Due to its high protein content (23–35%) and comparable digestion to other pulses like soybean, rice bean, and lima bean, it is regarded as a feasible source of dietary proteins. As a result, it is considered a reliable source of nourishment.

There are several crosses and hybrids among the twenty or so farmed *Mucuna* spp. present in the tropics, which likely arise from fragmentation originating with an Asian cultigen. The features of the growth on the pod, the colour of the seed, and the amount of days till pod harvest are the key variations among farmed species. The colloquial names for *Mucuna* species with many, sharp stinging hairs on their pods are "cowitch" and "cowhage." *Mucunain*, which is produced when humans come into touch, causes a very irritating dermatitis. The "velvet bean" species, which do not sting, have appressed, velvety hairs.

The plant *M. pruriens*, sometimes referred to as "velvet bean," is a robust annual climbing legume that was once widely produced as a green food crop in china and north-east India. Velvet beans, one of the most well-known green crops in the tropics right now, have a lot of promise as both food and feed, as evidenced by experiences all over the world. Certain ethnic groups have long used the velvet bean as a food source in a number of nations. It is grown in Asia, America, Africa, and the Pacific Islands, where its young leaves are used as animal fodder and their pods as a vegetable for human use.

Long, thin branches, alternating, lanceolate leaves, and whitish flowers with blue-purple, with a shape of butterfly petals are all features of the plant. The four to six seeded pods, which resemble violin sound holes and are hairy in appearance thick, and leathery, have an average length of four inches. They have thick, dense hair that has a deep, dark brown colour. A Southern Indian hill community known as the Kanikkars regularly consumes ripe *Mucuna* bean seeds after many boils to eliminate antinutritional elements.

Although they are susceptible to frost and perform badly in cold, wet soils, the majority of *Mucuna* species are tolerable to a variety of abiotic stimuli, such as drought, low soil fertility, and high soil acidity. The genus does well in warm, wet environments that are below 1500 m above sea level and have regular rainfall. The velvet bean, like the majority of legumes, has the capacity to fix nitrogen from the atmosphere through a symbiotic partnership with soil microbes.

Toxic Properties of *Mucuna pruriens* Linn

According to reports, the poisonous substances L-dopa and hallucinogenic tryptamines, as well as antinutritional elements including phenols and tannins, are present in *Mucuna* spp.. Velvet bean is a commercial source of L-dopa, which is used to treat Parkinson's disease due to its high quantities (4–7%). The plant's low vulnerability to insect pests may be explained by the toxicity of unprocessed velvet bean. The nematicide properties of velvet bean are widely recognized; nevertheless, it also apparently exhibits substantial allelopathic activity, which may serve to discourage rival plants.

Various kinds of *Mucuna* are produced as a minor food crop despite their poisonous nature. Raw velvet bean seeds are high in minerals and have a protein content of around 27%. *Mucuna* was a popular green vegetable growing in Mauritius and the foothills and lower slopes of the eastern Himalayas during the 18th and 19th centuries. The ripe beans and the green pods were both cooked and consumed. *M. pruriens* has been used to manufacture a coffee replacement in Guatemala and Mexico for at least a few decades; as a result, the seeds are well-known as "Nescafé" in the area.

Curative Properties of *Mucuna pruriens* Linn

Popular Indian medicinal plant *M. pruriens* has been used for many years in traditional Ayurvedic Indian medicine to treat illnesses such parkinsonism (Sathiyarayanan et al., 2007). The ancient traditional medicinal discipline of Ayurveda, which has been practised in India since the Vedic period (1500–1000 BC), makes extensive use of this plant. L-dopa is said to be one of the components of *M. pruriens*. The beans have also been used to treat neurological illnesses and arthritis in Ayurveda, in addition to being a potent aphrodisiac. The bean is considered to absorb the poison when applied as a paste to scorpion stings.

According to Sathiyarayanan et al. (2007), *M. pruriens* has been studied for its anti-diabetic, aphrodisiac, anti-neoplastic, anti-epileptic, and anti-microbial activity. All sections of the plant have excellent therapeutic characteristics. Guerranti et al. (2002) explored its anti-venom properties, while Jalalpure (2007) established its anti-helminthic activity. In addition to having been proven to be analgesic and anti-inflammatory, *M. pruriens* has also been shown to be neuroprotective (Misra and Wagner, 2007). Now it is used in Parkinson diseases (Yadav et al 2017, Rai et al 2017)

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