

***Mimosa Pudica: Sensitive Marvel of nature***

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**Introduction**

Touch me not plant is botanically known as *Mimosa pudica* L. which is a creeping annual or perennial blooming plant from family Fabaceae. Originating in tropical America, it is currently flourishing in the tropical and subtropical parts of India. It is also known as Laajvanti, Chhui-mui, live and die, humble plant or shame plant and commonly seen in open locations, such as roadways, farms, and waste areas. Being a sensitive plant it can thrive in bright, indirect sunshine but may tolerate partial shade. This versatility makes it appropriate for a variety of landscape settings. Plant's greatest distinguishing characteristic is its quick responsiveness to touch. Thigmonasty is the folding inward and drooping of leaflets when they are touched. This protective strategy is considered to deter herbivores by making the plant appear less desirable or accessible. It is commonly used in traditional folk medicine to cure a variety of ailments such as diarrhea, alopecia, tumors, sleeplessness, dysentery and is especially good for wounds and snake bites.

*Mimosa pudica* contains the poisonous alkaloid mimosine, which has been discovered to have antiproliferative and apoptotic properties. The leaves and roots are widely used as astringents, alexipharmics, diuretics, antispasmodics, emetics, and febrifuges. The plant's phytochemical analysis revealed the presence of alkaloids, tannins, mimosine (a non-protein amino acid), flavanoid C-glycoside, terpinoids, sterols, and fatty acids.



This plant is typically grown as an indoor annual, although it can also be used as groundcover. Seeds are commonly used to propagate plants. *Mimosa pudica* thrives in nutrient-poor soil with ample water drainage.

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On the other hand, it has been shown that this plant does well on subsoils that are damaged and scalped. *M. pudica* typically requires damaged soil to establish itself in a given region. Furthermore, the plant is shade intolerant and frost-sensitive, which means it cannot endure low light levels or cold temperatures. It does not compete for resources with bigger vegetation or forest canopy undergrowth. It must be planted under protection in temperate zones where temperatures drop below 13 °C (55 °F).

This species can be a weed for tropical crops such as cotton, soybeans, tomatoes, upland rice, bananas, sugarcane, coffee, oil palms, papayas, coconuts, and rubber. However, the thorns and woody roots can cause a headache for farmers. Wherever it invades, it has the power to change the chemical and physical properties of the soil. It removes heavy metals including copper, lead, tin, and zinc from polluted soils. Nitrogen-fixing bacteria transform atmospheric nitrogen into plant-usable form through root nodules. They also serve as food for certain animals.

**Stem:** In young plants, the stem is erect, but as they grow older, they creep or trail. It can droop quite low and become floppy. The stem is thin, branched, and sparsely to densely thorny, reaching a length of 1.5 metres (5 feet). The plant's erect height normally reaches around 30 cm.

**Leaves:** The plant has five bipinnate, compound sessile main leaves, which are petiolate, stipulate, and linear lanceolate. Secondary leaflets measure 0.6-1.2 cm in length and 0.3-0.4 cm in width, with 10-20 pairs present. The sensitive tree gets its name from its symmetrically arranged leaves that close when touched.

**Flower:** In mid-summer, pedunculate (stalked) pale pink or purple flower heads emerge from the leaf axils, with the number of blooms increasing as the plant matures. A single bloom lives for less than a day and usually dies by the following day. *M. pudica* flowers are extremely fragile and delicate. The globose to ovoid heads measure 8-10 mm (0.3-0.4 in) in diameter (without the stamens). Close scrutiny reveals that the upper section of the floret petals is red, while the filaments range from pink to lavender. Pollens are round, measuring about 8 microns in diameter. The flowers are pollinated by insects and the wind.

**Fruits:** The fruit comprises of clusters of two to eight pods, each 1-2 cm (0.4-0.8 in) long and thorny on the sides. The pods are divided into two to five segments and contain pale brown seeds measuring 2.5 mm (0.1 in) long.

**Seeds:** The seeds are compressed, oval-elliptic, brown to grey in hue. The seeds measure 0 - 0.3 cm length and 2.5 mm wide. The seeds have stiff coverings that limit

germination. High temperatures are the primary stimuli that cause seeds to break dormancy.

**Roots:** The roots of *Mimosa pudica* produce carbon disulfide, which prevents certain pathogenic and mycorrhizal fungi from developing in the plant's rhizosphere. This permits the plant's roots to produce nodules containing endosymbiotic diazotrophs that fix atmospheric nitrogen and transform it into a form that the plant can use.

### Uses of *Mimosa pudica*

It has antipyretic, antimalarial, antihelminthic, antimicrobial, antifungal and antiviral properties and can be used for the treatment of various discomforts like piles, tooth ache, diarrhea, dysentery, depression, migraines, cough asthma and high blood pressure.

Root paste can provide comfort from wounds. A paste of fried root in castor oil is applied to severe wounds to halt bleeding and promote healing. It lowers nose bleeding and inflammation, possibly due to its phenolic content. Apply crushed leaf juice or paste to a fresh wound to halt bleeding and heal skin disorders. Sesame oil can be added as an antimicrobial. *Mimosa* root is commonly used in Western medicine to treat bleeding, urinary infections, and blood purification. Apply warmed leaf paste on furuncles, abscesses, and boils to relieve itching and pus and promote

rapid healing. It regulates hormones and alleviates severe menstrual bleeding. Grind the plant's leaves, filter the juice, blend with honey, and drink once or twice a day.

*Mimosa pudica* leaf extract in methanol, ethanol, and chloroform significantly lowers mice's temperature compared to the common medication paracetamol. Leaf components such as terpenoids, flavonoids, and alkaloids exhibit antimalarial properties.

### Some other uses of *Mimosa pudica*

- The leaves of Uterine prolapse, together with those of other medicinal plants, have been used to cure hemorrhoids, urinary infections, and rheumatoid arthritis.
- The juice can treat sinus infections, sores, piles, and fistulas, as well as eye and skin burns.
- Root decoction treats syphilis, leprosy, venereal illnesses, bug bites, sleeplessness, nervousness, and piles.
- Apply the paste to reduce vaginal or anal prolapse or treat bone fractures.
- *Mimosa*'s capacity to stimulate healthy cell growth makes it useful in shampoos, lotions, capsules, and soaps. It also aids in collagen synthesis and regeneration of new skin cells.
- In Ayurvedic and Unani medicine, the roots of *Mimosa pudica* are used to

treat jaundice, leprosy, albinism and blood disorders.

**Conclusion:** The plant is utilized for ornamental purposes and has therapeutic benefits. It can thrive in poor soils and favors well-drained conditions because to its nitrogen-fixing capacity. It has been used in traditional medicine for centuries to cure a variety of ailments. Bioactive substances, including alkaloids, flavonoids, and tannins, contribute to the reported pharmacological actions. It is a cost-effective and readily available option for generating novel drugs in pharmaceutical industry. More attention should be placed on exploring natural resources, such as medicinal plants, to benefit humanity.

## References

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