E-ISSN: 2618-0618
P-ISSN: 2618-060X

www.agronomyjournals.com
2022; 5(2): 130-133
Received: 04-06-2022
Accepted: 09-08-2022

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M. pudica L (Mimosaceae) herb with impressive health benefits

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Abstract
M. pudica L. (Mimosaceae), additionally called Do not touch me; live and die; be a modest plant; and be ashamed. Frequently utilised herb in conventional folk medicine to treat a variety of illnesses, such as alopecia, Effective against tumours, sleeplessness, dysentery, among other things in the care of injuries and snakebites. *Mimosa pudica* L is a semi-prostrate, sensitive plant. thorny course plant that is typically found in lowland dry tropical and subtropical rainforests savanna, forest, and thorny scrub, mid-elevation woodland, grassland, and desert in the subtropics. *Mimosa* L. *Pudica*, which is particularly renowned for its biological pharmaceutical actions as well as cooling the bitter, caustic root's therapeutic effects different illnesses in Ayurveda. The current evaluation emphasises the different traditional usage in addition to pharmacological and phytochemical processes *Mimosa pudica*.

Keywords: *M. pudica* L, impressive health, benefits

Introduction
All around the world, medicinal plants have been utilised traditionally to cure a variety of ailments. The basic materials for medicine are derived from all parts of the plant, including the roots, stems, leaves, flowers, seeds, rhizomes, and bark. An astounding number of modern medications have been extracted from these natural sources based on their use in conventional medicine. The tiny, creeping, annual plant *M. pudica* L. a perennial herb with a height range of 45 to 90 cm. It has historically been used to cure a wide range of conditions, including diarrhoea, tumours, insomnia, piles, fever, and fistula. It is also effective as a birth control method and as a treatment for migraines in rural areas. Frequently used as an alexipharmic, emetic, febrifuge, diuretic, and antispasmodic are the roots and leaves. Alkaloids, tannins, mimosine (a nonprotein amino acid), flavonoid C-glycoside, terpinoids, sterols, and fatty acids were found in the plant according to phytochemical research. Two types of leaf movements are seen naturally in *Mimosa pudica* L: one is a very quick movement that is triggered by touch, heat, etc., and the other is a very slow, periodic movement that is regulated by a biological clock.

Common names
It is known by different names in various parts of the world & in India.
English: Touch me not, Hindi: Lajwanti, Sanskrit: Varakranta, Malayalam: Thottavadi.

Table 1: Biological classification

Kingdom	Plantae
Division	Magnoliphyta
Class	Magnolipsida
Order	Fabales
Family	Fabaceae
Subfamily	Mimosoideae
Genus	Mimosa
species	*pudica*

Origin and distribution
The plant is native to South and Central America, and Brazil is where it was initially identified. In South Asia, South East Asia, Tanzania, and several Pacific Islands, it is recognised as an invasive species. It grows in Hawaii, Maryland, Florida, Texas, Puerto Rico, and the Virgin Islands in the United States, and it has almost completely colonised India's tropical and subtropical regions.

Habitat
Common locations for *Mimosa pudica* L. include open areas, particularly farmed land, the side of roads, and waste areas.

Pharmacognostical description
Plant: A small, prostrate or ascending shrub with branches that grow near to the ground and can reach heights of 0.5 metres and a width of 0.3 metres Bipinnate, touch-sensitive leaves with one or two pairs of sessile, hairy pinnae, one to two pairs of alternate, linear, petiolate, glabrous, stipulate, obliquely narrow or linear-oblong leaflets, alternate, linear, petiolate, almost glabrous, and yellowish green in colour. Flower: Lilac pink in the globose head, with prickly peduncles; pink corolla; very small calyx with four ovate-oblong lobes; four stamens; ovary sessile; many ovules. The modes of pollination are entomophily and anemophily. Well-branched, upright, slender, cylindrical stems that are up to 2.5 cm in diameter are prickly, bristly, longitudinally grooved, internal surfaces that are grey, external surfaces that are light brown, and stems that have fibrous bark that can be easily separated from wood. Fruits: Dry, simple, 1-1.6 cm long, 0.4 to 0.5 cm wide lomentums with persistent sutures, indehiscent segments, and 2 to 5 seeds with a 0.3 cm long, glabrous, yellowish spreading bristle.

Phytochemistry
Mimosine, a poisonous alkaloid found in small amounts in *Mimosa pudica* L, is present. Leucinal and it are interchangeable. Additionally, the plant's leaves include d-pinitol, an inositol derivative, mimosamine, and mimosinic acid. The leaf extracts have been shown to contain a chemical similar to adrenaline, and the presence of crocetin dimethyl ester in the plant's extract has also been noted. The seeds include mucilage made of D-xylose and d-glucuronic acid, and the flowers contain carbs, proteins, and lipids. In addition to benzaldehyde and anise aldehyde, the essential oil also contains geraniol, furnisal, linalool, and numerous other aldehydes. The leaf extract's early phytochemical analysis revealed the presence of tannins, coumarins, flavonoids, terpenoids, alkaloids, glycosides, quinines, and phenols.

Therapeutic uses
Leaves: The leaves are bitter, tonic, and sudorific, and they can treat conjunctivitis, haemorrhoids, and fistula. Hemorrhages, scrofula, hydrocoele, treating cuts and wounds, and haemorrhages. The juice from the leaves is applied topically to sores and piles as well as utilised in dressings for sinuses, diabetes mellitus, vaginal conditions, diarrhoea, and whooping cough. It is also advised as a cure for cervical adenitis and viral hepatitis. The leaf decoction is used to treat asthma and dysentery because it has a diuretic effect. Additionally, it has bitter tonic and expectorant properties. Hydrocele, glandular swells, migraines, burst boils, and itches can all be treated quickly with leaf paste, and furuncles, abscesses, and boils can all be treated with warm leaf paste to cause them to burst and release pus. Intestinal worms and stomachaches are treated with leaf paste with honey (taken twice daily on an empty stomach for 3-4 days), and piles and fistulas are treated with leaf paste with milk. Whole plant decoction is employed as an anti-asthmatic. Roots: The astringent, bitter roots are used as an antidote for diseases and poisons. When applied as a paste to fresh wounds, roots can halt the bleeding, speed up the healing process, and even prevent tooth decay. Premenstrual syndrome (PMS), haemorrhoids, diarrhoea, and irritability can all be treated with *Mimosa pudica* root. Seeds: The seeds have nematicidal activity against second-stage juveniles of Meloidogyne incognita Chitwood and can be used as a coffee substitute. You can apply the seed powder on wounds and sores. Whole plants: This remedy is used to treat a variety of conditions, including dysentery, lerosy, vaginal and uterine complaints, burning sensations, leucoderma, asthma, inflammation, diabetic issues, neurological issues, fever, piles, cholera, bronchitis, coughing up jaundice, dyspepsia, syphilis, tuberculosis, fatigue, whooping cough, blood diseases, and blood purification. Rheumatoid arthritis, edoema, myalgia, scabies, and uterine tumours are all treated with it externally.

Pharmacological properties
Wound-healing activity
A wound is the loss or disruption of the cellular, anatomical, or functional continuity of living tissues. The chloroform extract from *Mimosa pudica* leaves has significant wound healing properties, according to studies in Wistar albino rats; A 5% ointment made from extracts was created. *Mimosa pudica* shoot methanolic extract was discovered to contain phenolic components, demonstrating wound healing properties. Significant wound healing activity was seen in the ointment that contained 2% (w/w) of total aqueous extract and 2% (w/w) of methanolic extract.

Antifertility activity
Mimosa pudica root extract was given orally daily to Albino mice at a dose of 300 mg/kg body weight, and it was discovered that this decreased the number of litters by lengthening the estrous cycle and greatly lengthening the diestrous phase. The release of gonadotropins and the secretion of estradiol were discovered to be altered by the extract, which changed how the estrous cycle is regulated. Given intragastrically at a dose of 150 mg/kg body weight, *Mimosa pudica* root powder disrupted the pattern of the estrous cycle in female Rattus norvegicus, and a significant decrease in the amount of eggs was also noted.

Diuretic activity
At dosages of 100 and 200 mg/kg, the ethanolic extract of *Mimosa pudica* reportedly exhibited substantial diuretic action and increased the overall amount of urine. At dosages of 200, 500, 1000, and 2000 mg/kg, the leaf decoction of *Mimosa pudica* exhibited diuretic action in dogs and rats, with a notable decrease in Cl- and Na+ production without influencing K+ excretion. A rise in Na+, K+, and Cl was observed at 100 mg/kg body weight in a diuretic activity study conducted on Wistar albino rats fed with 100, 200, and 400 mg/kg of an aqueous extract of *Mimosa pudica* leaves. The *Mimosa pudica* plant's ethanolic and aqueous extract was reportedly tested for diuretic efficacy using furosemide (20 mg/kg).

Immunomodulatory activity
The alcohol-based extract of several Mimosa aerial components According to reports, the *pudica* plant greatly improves both humoral and cell-mediated responses.

Hyperglycemic activity
A 250 mg/kg dose of *Mimosa pudica* leaf ethanolic extract has been shown to have antihyperglycemic effects in type-1 diabetes and to lower plasma levels of free fatty acids; as a result, it is utilised in the treatment of other metabolic disorders. The presence of glycosides in the chloroform extract of *Mimosa pudica* may have contributed to the atherogenic index and protection against hyperlipidemia observed in Wistar albino rats.

Central nervous system (CNS) depressant activity
It has been demonstrated that *Mimosa pudica* aerial parts fed as a methanolic extract to Wistar albino rats exhibit strong antinociceptive and good CNS depressive properties.

Antimicrobial activity
Citrobacter divergens, Klebsiella pneumonia, and Aspergillus fumigates have all been shown to be resistant to the antimicrobial effects of chloroform extract of *Mimosa pudica* leaf at various doses like 50, 100, and 200 g/ml. Glycosides, alkaloids, terpenoids, flavonoids, phenol, quinins, tannins, coumarin, and saponin are examples of active ingredients that may be in charge of this activity.

Anti-oxidant activity
With an IC50 value of 296.92 /ml, the methanolic extract of *Mimosa pudica*'s aerial portions has been demonstrated to exhibit modest antioxidant activity.

Anti-diarrhoeal activity
The anti-diarrheal and gastrointestinal motility-reducing effects of the ethanolic and aqueous extracts of *Mimosa pudica* roots were assessed at two doses (150 and 250 mg/kg), and the result was significant.

Toxicity studies
When examined for acute toxicity in animal models, the aqueous extract of *Mimosa pudica* exhibited no clinical symptoms of toxicity. Even at a dose of 2000 mg/kg P.O., the plant was shown to be safe Chromoblastomycosis is an infection that is caused by the plant *Mimosa pudica* from its thorn and has resulted in a person becoming isolated. Fonsecaea pedroso, a fungus.

Conclusion
The entire *Mimosa pudica* plant exhibits a variety of biological and pharmacological actions, and it has been used in traditional medicine for centuries to treat a wide range of illnesses. Herbal treatments can be utilised to create novel medicines as well as to improve quality of life and patient compliance while reducing the negative effects of drug use. The main advantages of *Mimosa pudica* include its accessibility, economic viability, and wealth of valuable medical characteristics. As a result, the pharmaceutical industry can employ this plant to create new drugs.

Conflict of interest statement
The authors declare that there is no conflict of interest.

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