

Review Article

**A brief review of mimosa
pudica**

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Abstract:

Mimosapudica Linn. has been found to be a potent herb and used by different traditional practitioners in different ailments. Different traditional formulations. In *Charakasamhitha*. It is mentioned that decoction of the plant could be used for vaginal wash in vaginal infections. South Asian peoples have been using *Mimosapudica* for several ailments for decades. *Mimosapudica* Linn is an annual or perennial herb found to have several activities like Antihelminthic, anti hyperglycemic, anti-inflammatory, antipyretic, antispasmodic, antitussive, antiviral, calmative, contraceptive, depilatory, diuretic, emetic, expectorant, poison, sedative, tranquilizing. People of different communities used the medicinal value of the plant for the treatment of tooth ache, Urinary tract infections and vulvovaginal infections. It is well justified that there would be a potent antimicrobial

activity against several bacterial and fungal infections.

Keywords: *Mimosapudica* Linn, Antihelminthic, antiviral, calmative, contraceptive.

Introduction: Plants have a significant role maintaining human health and improve the quality of healthy life for thousands of years and have served humans well as valuable components of medicines, seasonings, beverages and cosmetics and dye ⁽¹⁾. 'Mimic' means to allude and 'pudica' means bashful, results the name *mimosapudica* to the plant in legume family, *Mimosa* is one of the largest genera ⁽²⁾. Which distributes more than 500 species Lowland tropical rainforest, savannah, tropical and subtropical dry forest and thorn scrub mid elevation subtropical forest desert and grassland, and wetland are habit of *Mimosa*. To cure all ailments of all mankind, nature provides a complete store house of remedies for time honoured period. In Indian condition it is optimum to collect plant during September to March.

Active constituents from plant improve health and lighten illness. It gains attention because it gives it is money spinning, environmental and true relief from illness.

Mimosapudica is a shrubby plant with the bipinnate leaves. glandular hairs, spinous stipules, campanulate calyx and lilac pinkish axillary flower heads. The stems are erect and well branched. In Indian condition it flowers and fruits in the month of August to October. It contains active constituents like an alkaloid Mimosine, mucilage, tannins and non protein amino acids, flavonoid C-glycosides, sterols and terpenoids. *Mimosapudica* shows certain movements like nyctinastic movements, thigmonastic movements. Semimonastic movements ⁽³⁾.



Fig 01: whole plant mimosa pudica

Taxonomy and Nomenclature: (Fig 01) *Mimosapudica* was first formally described by Carl Linnaeus in *Species Plantarum* (4).

Botany: *Mimosapudica* is a diffusely spreading half woody herb with branched stems up to 1 meter long

Sparingly prickly with numerous deflexed bristly hairs

The leaves are very sensitive both pinnae and leaflets, folding when touched.

Pinnae are usually 4 digitately arranged at the end of petiole, and 4 to 9 centimeters long

The leaflets are narrowly oblong in equilateral 1 to 1.5 centimeter long

Heads are long pediculed, solitary or 2 to 3 in each axil about 1 centimeter diameter

Pods are flat, slightly recurved 1 to 2 centimeters long with 3 to 5 sided joints that fall away on maturity (6).

Biological source: *Mimosapudica* is a diffuse prickly undershrub belonging to the Family: *Mimosaceae*

Parts used: Whole plant, leaves, roots

Synonym: Laajvanti, Touch me not, and chhui - mui

Classical and common names (6):

Ayurvedha: Lajjala, Namaskari, Samanaga, samokchhini, and shamipatra

Siddha: Thottalchuningi

Vernacular names:

Sanskrit – Lajja

English – Sensitive plant

Hindi: Lajjavanti and chuui-mui

Bengali: Lajjabati

Telugu: Attapatti and Peddandrikanni

Tamil: Tottaladi and Thottachnungi

Kannada: Lajja and Nachika and mudugudavare

Malayalam: Thintarami.

Origin and Geographical distribution: The plant is a native of Tropic America and naturalized nearly all through the tropical and subtropical parts of India (7).

Morphological characters:

Stem: It is reddish-brown in color, very much stiff, very much slender and growing to length of 1.5(m). It bears scattered thorns. The stem is erect in young plants, but become creeping or trailing with age (8).

Leaves: The hairy leaves are alternate, bipinnately compound with one or two pinnae pairs and 10-26 leaflets per pinna (8).

Flowers: On close examination, it is seen that the forest petals are red in their upper part are red and filaments are pink to lavender flowers have globose heads, pedicels singly. Usually in auxiliary pairs all along the branches. Flowers are pilonated by the wind and insects.

Fruit: The fruit is straw colored consist of clusters of 2-8 pods of 1-2cm long each, prickly on the margins, The pods break into 2-5 segments and contain pale brown seeds 2.5mm long. The seeds have hard seed coats which restricts germination (8,9).

The whole plants used (10,11,12):

Treats Leprosy, dysentery vaginal and uterine complaints and burning sensation, asthma, leucoderma and inflammation neurological and diabetic, fever and bronchitis, cholera and cough and dyspepsia and fever, smallpox and syphilis and tuberculosis, fatigue and blood disease and whooping cough, fever in children and sore gum.

Used as a blood purifier.

Vesicle calculi are treated internally.

Externally used for oedema myalgia and tumours of the uterus.

They are useful in ulcers and burning sensation and asthma and smallpox and spasmodic.

It arrest the bleeding and improves the wound healing process.

It is mainly used in herbal preparations for gynaecological disorder

It is also used in conditions like bronchitis, general weakness and impotence.

This herb can replace contraceptive pills.

Mimosa can reduce the onset of baldness.

It relieves the symptoms of Rheumatoid arthritis.

It possesses sedative, emetic tonic properties and ability and treat alopecia, diarrhea, dysentery, insomnia, tumour and urogenital infections.

Plant juices are extremely used in fistulous sores.

Whole plant is used for Scabies and uterine tumour.

Pharmacological activities:

Anti-Ulcer activity (13):

The extracts used for the activity were, 90% ethanol, methanol, chloroform and diethyl ether extract. The activity was investigated in Albino rats. The models used were aspirin induced

model. Alcohol induced model and pylorus ligation induced ulcer and the parameters evaluated were ulcer protection. Gastric ulcer protection and reduction in total volume of gastric juice, free and total acidity of gastric secretion, gastric ulcer respectively 100 and 200mg/kg dose levels of extracts and 20mg/kg of dose levels of standard drug Ranitidine were.

Anti-inflammatory activity ⁽¹⁴⁾:

The extract used find this activity was petroleum ether, ethanol and aqueous extract. The animals used for the investigation of anti inflammatory activity were albino rats. The models were carrageenan induced paw edema and cotton pellet granuloma in rats. Carrageenan induced paw edema was used for evaluating the reduction of paw edema induced by carrageenan. different doses like 50,100,200mg/kg of extracts were used, and indomethacin was used as standard drug used 10mg/kg and the route of administration is oral.

Anti-microbial activity ⁽¹⁵⁾: The methanolic extract of *M.pudica* was tested against micro organisms like *aspergillus fumigates*, *citrobacter diversens* and *klebsiella pneumonia* at various concentrations like 50,100,200 microgram/ml. Terpenoids, flavonoids, glycosides, tannins, quinines, phenols, saponins, and coumarins are active ingredients are present in aqueous extract. which may be responsible for this activity.

Anti-malaria activity ⁽¹⁶⁾: *plasmodium barghei* was the organism used to test the anti-microbial property of methanolic extract of *mimosa pudica*. The presence of active constituents like terpenoids, flavonoids and alkaloids are responsible for the activity.

Anti-Fungal activity ⁽¹⁷⁾: Methanolic extract and aqueous extract leaves of *M.pudica* were tested against *Aspergillus fumigates* by well diffusion at various concentrations like 100,200, and 500 mg.

Analgesic activity ⁽¹⁸⁾: The ethanolic extract of *M.pudica* shows activity at a concentration of 200 and 400 mg/kg. The active substance responsible for this activity is flavonoids. The models used in this activity are hot plate method, tail flick method and acetic acid induced writhing model. Oral administration of ethanolic extract at a dose of 500 mg/kg shows a significant reduction of writhing response induced by acetic acid.

Anti-Convulsant activity ⁽¹⁹⁾: The decoction leaves of *M.pudica* when given intra peritoneal at a concentration of 1000-4000mg/kg showed anti-convulsant activity.

Anti-diarrheal activity ⁽²⁰⁾: Ethanolic extract of leaves of *M.Pudica* at a doses of 200 to 400 mg/kg showed anti-convulsant activity.

Anti-hepatotoxic activity ⁽²¹⁾: The ethanolic extract of *M.pudica* was given at a doses of 200 mg/kg body weight. The animal used was Wistar albino rats. The extract shows dose dependent hepatoprotective effect in CCL₄ induced hepatic damage. The activity was assessed for parameters such as glutamate oxaloacetate transaminase, glutamate pyruvate transaminase, alkaline phosphate, bilirubin and phosphate.

Anti-helminthic activity ⁽²²⁾: Various extracts of seeds of *M.Pudica* like petroleum ether and ethanol and aqueous was used. The test worm used was *pheritima posthuma*. The test was used in the concentration like 100,200, and 500 mg/kg. The standard drug used as albendazole. Petroleum ether showed weak anthelmintic activity. an alcoholic and aqueous extract showed paralysis and also caused death in dose dependent manner compared to standard albendazole.

Diuretic activity ⁽²³⁾: The decoction of leaves of *M.pudica* showed activity at doses of 200, 500,1000 and 2000 mg/kg. The animals used were dogs and rats. And the standard drug used as Hydrochlorothiazide. At a concentration of 2.5 mg/kg.

Anti-depressant activity ⁽²⁴⁾: Aqueous extract of from dried leaves of *M.pudica* was used to test the behavioural actions of at various doses of 2,4,6 and 8 mg/kg. The animal used as a rat. And the standard drug is Diazepam. At a concentration of 1.3 mg/kg.

Conclusion: The present Review article explains the morphology and constituents and its uses in various patterns like –traditional uses, siddha uses and folkloric studies. It also explains various morphological characteristics and taxonomy and various types of species of *M.pudica*. availability. It is commonly grown in waste lands, lawns and pastures and along road side. *Mimosa* is regarded as a plant of high value. Because of its leaves. Since, it has an ability to fix nitrogen. In pharmacology the process of regeneration of the nerves was higher in rats treated with *M.pudica* as compared to Hydrocortisone group.

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