

## Medicinal Species of Mimosa

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**Abstract:** Mimosa is a perennial (in some cases annual) plant belonging to the legume family (Fabaceae). It mainly grows in tropical and subtropical regions, including South America, India, Sri Lanka, Indonesia, and the warm regions of Africa. In Uzbekistan, it is cultivated mainly as an ornamental plant in greenhouses. The stem of the mimosa may be either climbing or upright.

**Keywords:** medicinal, chemical composition, properties, *Mimosa pudica* L., *Mimosa hamata*, extract, bioactive compounds, shrub, antimicrobial, antioxidant, antiviral, Fabaceae, inflammation, spherical inflorescence, pom-pom, folk medicine, alkaloids, dysentery, glycosides, stem, leaves, root, infusion, poliomyelitis, stomatitis, mimosine, saponins, leprosy, asthma, India.

### **Mimosa pudica L.**

*Mimosa pudica* L. is a tropical plant belonging to the family Fabaceae (Leguminosae). It grows mainly in South America, India, Bangladesh, Sri Lanka, and Indonesia. In Uzbekistan, it is cultivated in greenhouses or laboratories. Its most remarkable feature is sensitivity (plant movement physiology): when touched or shaken, its leaflets quickly fold due to changes in cell turgor pressure.

This creeping or erect herbaceous plant usually grows to a height of 30–80 cm. The stem is slender and sometimes covered with fine spines. The leaves are bipinnate, consisting of small paired leaflets. The flowers are small, pink or purple, and spherical in shape. The fruit is a pod containing 2–4 seeds.

The leaves, roots, and bark of *Mimosa pudica* are rich in the following compounds: Alkaloids (especially mimosine), Flavonoids (quercetin, kaempferol), Tannins and phenolic compounds, Saponins and glycosides, Vitamin C and certain amino acids.

In traditional medicine, *Mimosa pudica* has been used since ancient times. Its medicinal effects include: Sedative (relieves nervous tension and insomnia), Antibacterial and antifungal (heals wounds and skin diseases), Hepatoprotective (protects liver cells), Anthelmintic (combats intestinal parasites), and Antidiabetic (helps lower blood sugar levels).

Scientific studies have confirmed that mimosa extracts show significant antioxidant activity. Its phenolic and flavonoid compounds neutralize free radicals, strengthening cellular protection.

In Ayurveda (the ancient Indian system of natural medicine), *Mimosa pudica* is known as “Lajjalu.” It is used to stop bleeding, heal wounds, soothe the nerves, and treat skin disorders. Modern pharmaceuticals also use mimosa extracts in herbal medicines and natural sedatives.

The leaves exhibit rapid movement (nastic reaction) in response to environmental stimuli due to changes in water flow and cell turgor. The plant has a deep root system, enabling it to absorb moisture from lower soil layers and adapt temporarily to semi-arid conditions.

Throughout India, its roots are traditionally used to treat jaundice, leprosy, dysentery, asthma, and leukoderma, while the seeds act as an effective emetic.

### **Mimosa hamata**

*Mimosa hamata* is a flowering shrub belonging to the Mimosaceae family. It is widely used in traditional medicine for treating various diseases. The plant grows up to about 1.5 meters in height and has a semi-shrub form with small thorns along its stem and branches. It forms dense thickets in arid regions.

Its leaves are bipinnate, feathery, and consist of many small leaflets. Unlike *Mimosa pudica*, they do not fold when touched. The flowers are small, pink, and spherical — resembling a “pom-pom.” The fruit is a spiral or curved pod containing several seeds.

It blooms from July to October and bears fruit from August to November. *Mimosa hamata* is commonly found in arid and desert tropical areas, especially in Rajasthan and Maharashtra (India).

Traditional uses include treating bronchitis and diarrhea in children, being used in religious rituals, worn as ornaments by some tribes, and used as fodder for goats and camels.

Pharmacological properties: Antimicrobial — ethanol extracts are effective against bacteria and fungi; root and leaf extracts show the strongest effect. Antiviral — active against herpes simplex, poliomyelitis, and stomatitis viruses; methanol extracts show notable antiviral activity. Antioxidant — neutralizes free radicals effectively, observed in extracts of leaves, stems, roots, and seeds.

Ethnomedicinal applications: Used for asthma, wound healing, pain relief, anti-inflammatory purposes, contraception, dysentery, diarrhea, and blood purification.

Major chemical constituents identified: 4-ethyl-gallic acid, triterpene saponins A and B, ethyl gallate, mimonosides A, B, and C.



*Mimosa pudica*



*Mimosa hamata*

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