

## **Datura (*Datura stramonium* L.) a well-known potential medicinal herb**

Anand Kumar Yadav

### **Introduction:**

Datura plant belongs to Solanaceae family. This plant is also known as “Thon Apple”. It is one of the deadliest plant species because of its extremely toxic components, yet when ingested raw, it also contains a surprising amount of medicinal properties if properly purified. Datura is an annual herb grows up to height of 2-5 ft. Flowers have 3 distinct colours which are yellow, red, violet or greenish-white in colour with pleasant smell. They are usually large and are bisexual and hypogynous. Fruits have a bitter acid-like taste. The seeds are enclosed within the fruits and are spiny. It is normally found in the tropical parts of India and the temperate regions of the Himalayas. It is a wild plant that has a variety of medicinal and pharmacological uses. Alkaloids, atropine, scopolamine, tannin, saponin, glycosides, phenol, sterols, lignin, lipids, carbohydrates, and proteins are some of the many chemicals found in Datura. The effects of Datura include antiepileptic, anti-asthmatic, analgesic, antioxidant, antibacterial, insecticidal, repellent, and organophosphate protection. Whatever its component parts - leaves, fruits, flowers, stems, or roots; Datura has a long history of usage in both traditional medicine

and alternative treatments. However, because of the plant's potent hallucinogenic properties, Datura is frequently used to treat asthmatic symptoms and lessen discomfort during surgical and bone-stitching treatments. Datura, a traditional medicine plant, has a wide range of health benefits and is frequently used for pain relief, fever treatment, strengthening heart function, enhancing fertility, inducing sleep, easing childbirth, and promoting the health of the hair and skin.

Datura genus comprised of 14-15 species, among those, the most common species of the Datura that are extensively used in medications are:

**Datura metal (Purple Datura):** This species of Datura is extensively used in ayurvedic and religious purposes and is widely used for the treatment of asthma, cough and cold and painful conditions.

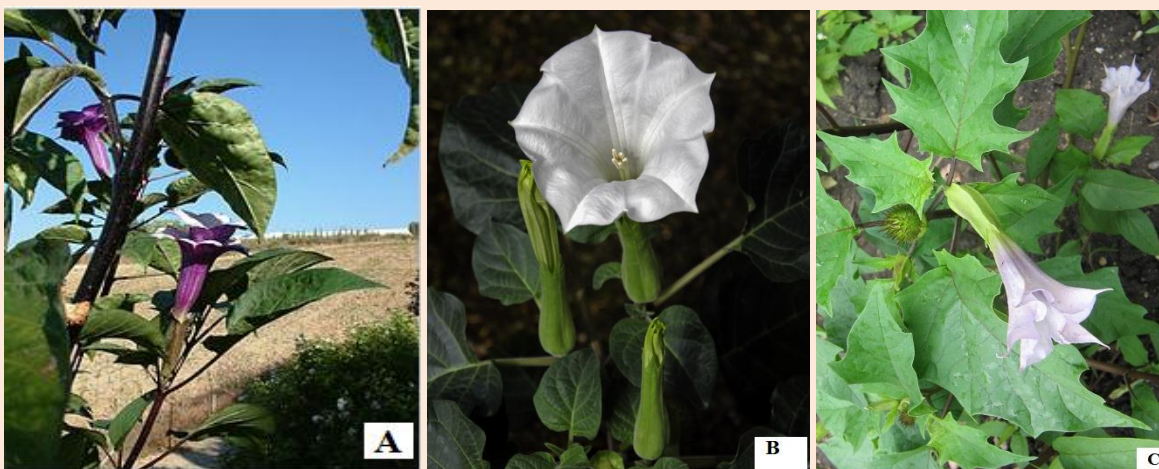
**Datura alba (White Datura):** It usually bears white flowers and grows naturally in the Himalayas from Kashmir to Sikkim.

**Datura stramonium (Black Datura):** Being a source of a hypnotic drug known as

stramonium, this species of *Datura* portrays potent hypnotic and sedative effects.

**Datura Health Benefits:**

Improves Respiratory Health: *Datura* is most



**Fig. 1: *Datura metal* (A), *Datura alba* (B) and *Datura stramonium* (C)**

**Parts of *Datura* Used In Medicinal Formulations:**

The entire *Datura* plant possesses a number of distinguishing qualities, including anti-spasmodic, analgesic, sleep-inducing, expectorant, sedative, hypnotic, intoxicating, uterine stimulant, and bronchodilator qualities. The entire plant, whether it be the fresh or dried leaves, seeds, roots, or fruits, *Datura* has made its way into many conventional and alternative medicines because of its many therapeutic capabilities. *Datura* seeds must undergo a series of *sodhana*, or purifying, processes before being employed in any formulation since they are exceedingly dangerous and poisonous when consumed in raw form. This process helps to reduce toxicity levels in the body and enhances the part's medicinal effectiveness.

effective as an alternative treatment for asthmatic conditions, despite of its reputation as a traditional cure-all for respiratory issues of all kinds. The entire plant holds considerable significance in treating all types of respiratory problems such as the common cold, flu, whooping cough, asthma, bronchitis, etc. due to its potent anti-inflammatory, expectorant, and anti-spasmodic properties. Being a natural expectorant, it aids in removing mucus buildup in the chest and nasal cavities, which facilitates breathing. When used properly, this herb helps to improve lung function by enhancing lung muscle strength.

**Aids in Cardiac Functioning:** It has been discovered that *Datura* has a positive effect on the heart. It is essential in treating a variety of cardiac conditions because it is a natural antioxidant and a cardio-protective herb. By

soothing the mind, it relaxes the cardiac system, which is highly beneficial for patients suffering from palpitations and arrhythmias. Additionally, it helps to prevent lipid buildup, lower blood cholesterol levels, and strengthen cardiac muscles, all of which minimise the risk of atherosclerosis, heart attacks, blood clots, and other problems.

**Reduces Stress:** Datura is renowned for its psychological effects. In addition to elevating mood, the existence of adaptogenic, hypnotic, and sedative properties also reduces stress. It has a significant impact on balancing the Vata and Pitta Doshas in the body, which helps to maintain healthy levels of the stress hormone serotonin. This helps to lessen a variety of anxiety symptoms, such as unease, restlessness, cold hands and feet, etc. It is also essential for treating various forms of psychological issues like depression, dementia, etc. by calming the mind.

**Improves fertility and birth:** Datura provides a traditional one-shot treatment for increasing libido and enhancing fertility in both men and women. It exhibits potent aphrodisiac properties, which not only aid in relieving mental stress and anxiety but also stimulate the production of hormones that boost libido. It is essential for improving male virility and stamina. Purified Datura seeds can be consumed by soaking them in milk, which is

known to boost genital blood flow and the production of male hormones like testosterone and luteinizing hormone, which in turn enhances the motility and quality of sperm in males. For females, it not only enhances fertility by balancing progesterone production, but also significantly lessens discomfort and soothes the body by relaxing the uterine muscles following a difficult delivery.

**Supports the immune system:** Datura is one of the most well-known folk treatments for boosting the immune system, fighting germs, and protecting the body from numerous infections due to the abundance of antioxidants and ascorbic acid it contains. Datura also demonstrates the presence of potent antiviral, anti-bacterial, and anti-fungal properties that aid in wound healing in addition to eradicating bacteria or germs from the body. It significantly increases the production of white blood cells and aids in the body's ability to combat free oxygen radicals. The biochemical constituents also aid in lowering general sluggishness, fatigue, and heaviness and boost the body's vitality.

**Promotes Digestion:** Datura exhibits potent digestive and carminative qualities that provide an effective treatment for a variety of digestive abnormalities. In order to cure flatulence, gassy stomach, bloating, constipation, abdominal distension, and

abdominal cramps, it helps to reduce the formation of gas in the alimentary canal. It also aids in lowering the production of high stomach acid levels and promotes normal nutrient digestion, assimilation, and absorption.

**Remedies Insomnia:** Datura holds significant value in reducing stress by lowering cortisol levels, which is a stress hormone. Due to Datura's sedative effects, it is frequently used to increase the duration and quality of sleep. For those who suffer from insomnia or other sleep disorders, Datura can effectively give a restful, uninterrupted night's sleep by calming the nerves, regulating the right hormone release, lowering pain, and inducing sleepiness.

**Reduces Pain And Inflammation:** Datura is often used to provide comfort in cases of painful conditions like arthritis, muscle spasms, etc. since it has potent pain-relieving and anti-inflammatory effects. Using formulas containing Datura can help relieve the discomfort associated with rheumatoid arthritis, also known as amavata, which typically results from an accumulation of toxins in the joints and an imbalance of the Vata Doshas. To treat rheumatoid arthritis-related inflamed and swollen joints, prepare a juice from the leaves of Datura, Castor, and Calotropis

**Treats Fever:** The fruit of the Datura plant is beneficial in treating various types of fever since it contains strong anti-parasitic and temperature-lowering properties. The purified fruit, which has historically been used to combat the malaria parasite, lowers body temperature and stops the parasite's growth exactly at the ring stage, preventing the infection from becoming worsened inside the body. Datura is beneficial against fever caused by the common cold, flu, or influenza in addition to malaria.

**Augments Skin And Hair Health:** Datura, which is rich in vitamin C and antioxidants, is used to cure oxidative free radical damage caused by the sun's rays, which helps to reduce the appearance of wrinkles, fine lines, spots, dark circles, and other ageing symptoms. It also leaves behind smooth, luminous skin by greatly eliminating acne and pimples. Datura plays a crucial role in boosting hair development in addition to enhancing skin quality. It is very important for boosting blood flow to the hair follicles and scalp since this feeds the roots by bringing in more nutrients through the blood supply and aids in the development of new hair. According to Ayurveda, applying a Datura juice-based scalp salve on a regular basis can treat male pattern baldness, as well as prevent premature

greying, unexpected hair loss, and other hair-related issues.

**Induces Lactation:** On a regular basis, Datura or any of its formulations help boost the production of prolactin and corticoids, which aid in the production of breast milk, improving lactation and the quality of breast milk. This is very advantageous for the infants because breast milk provides the best nutrition and supports the development of their immune systems. premature greying, unexpected hair loss, and many kinds of scalp infections.

**Combats Urinary Troubles:** Antioxidants included in Datura are very helpful in treating kidney illnesses such as urolithiasis and stones as well as other kidney conditions. The bio-active ingredients actively aid in reducing calcium and magnesium buildup and deposition, which eventually results in kidney and ureter stones. Being a strong antispasmodic, it also makes it possible for kidney stones that have already developed to transit through the urinary system painlessly. Even painful micturition, urine incontinence, and other urinary infections can be treated.

**Prevents Oral Infections:** The presence of germ-killing elements in Datura oil and powder aid in removing bacteria from the oral cavities and foul breath, preventing swelling, bleeding, and other oral issues. Datura

powdered formulations are frequently used as teeth-brushing agents to improve general oral health by reducing bad breath and gum pain.

**Datura Dosage:** Depending on the patient's age, body strength, effects on appetite, severity, and condition, the precise therapeutic dosage of Datura may change from person to person. It is strongly encouraged to speak with an ayurvedic physician or practitioner, who will assess the patient's symptoms and prescribe an effective dose for a given time.

**Risk Factors of Datura:** The following conditions are said to make people exceedingly toxic and deadly when exposed to Datura:

- ✓ Increased heartbeat
- ✓ Glaucoma
- ✓ Patients having pacemaker
- ✓ Elevated intraocular pressure
- ✓ Pregnant women and lactating mothers

**Datura Side Effects:** It is strongly advised to use or consume any part of the plant—which is toxic—only after a proper diagnosis and consultation with a specialist. Particularly, Daturine and albumen, together with mucilage and ash, are highly concentrated in the leaves and seeds of the Datura plant. About 25% of these alkaloids are potassium nitrate. Raw



plant components can be exceedingly harmful to your health if you consume them without first purifying them.

The following health issues can arise from taking *Datura* in excess or when it has been purified:

- Hallucination and intoxication
  - Fever
  - Vertigo
  - Restlessness
  - Dry mouth
  - Heart palpitation
  - Muscle stiffness
  - Urticaria
  - Allergic reactions
  - Increased heart rate
  - Increase in Intraocular pressure
- ✓ In certain chronic cases, it can be extremely lethal and can ultimately cause unconsciousness, coma and even death.

**Conclusion:** It must be made clear that while being a medical plant with a plethora of benefits, including the treatment of fever, heart difficulties, respiratory disorders, psychotic

illnesses, sleeplessness, depression, and skin disorders, the plant should only be used with a doctor's permission. Utilizing an unclean plant part or taking the wrong dosage might be incredibly fatal and have a negative impact on your health.

1. [https://www.rxlist.com/Datura\\_wrightii/supplements.htm](https://www.rxlist.com/Datura_wrightii/supplements.htm)
2. Reema Srivastava, Pankaj Srivastava (2020): The Medicinal Significance of *Datura stramonium*: A Review. Biomed J. Sci. & Tech. Res., 29(2). DOI: 10.26717/BJSTR.2020.29.004761
3. <https://www.netmeds.com/health-library/post/Datura-benefits-uses-formulations-ingredients-method-dosage-and-side-effects>
4. Soni, P.; Siddiqui, A. A.; Dwivedi, J. and Soni, V. (2012): Pharmacological properties of *Datura stramonium* L. as a potential medicinal tree: An overview: *Asian Pac J Trop Biomed*; 2(12): 1002-1008
5. <https://www.moolihai.com/health-benefits-of-Datura/>

Anand Kumar Yadav, Technical Assistant, Crop Improvement Division, ICAR-IIPR, Kanpur (UP)