



## Research Article

### REVIEW ARTICLE ON DHATURA (DHATURA METAL., LINN)

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#### ABSTRACT

*Datura* is a genus of nine species of poisonous vespertine flowering plants belonging to the family Solanaceae. They are known as angel's trumpets, sometimes sharing that name with the closely related genus *Brugmansia*, and commonly known as daturas. They are also sometimes called moonflowers. It is highly valued from time immemorial because of its vast medicinal properties. Datura metal is well known for its insecticidal, herbicidal, anti-fungal, anti-bacterial, anti-cancer, anti-inflammatory and anti-rheumatoid activity. Datura is also rich in Alkaloidal compounds. The present paper summarizes all necessary information regarding its classical literature.

## INTRODUCTION

Datura, commonly known as thorn apple, jimson weed, locoweed, and devil's weed. Common species encountered are *D. fastuosa*, *D. atroxa* and *D. metal*. *D. fastuosa* is of two varieties- *niger* and *alba*. Datura metal L., with local name "Datura". Is an erect shrub with spreading branches. A perennial herbaceous plant, belonging to Solanaceae family can reach a height of 1.5m. Leaves are simple, alternate, dark green, broadly ovate, shallowly lobed and glabrous. Flowers are large, solitary, and trumpet shaped with a sweet fragrance usually appreciated in the mornings and evenings, with a wide range colours, ranging from white to yellow and light to dark purple. The flowers are hermaphrodite and are pollinated by insects. The fruit is in the form of a capsule covered with short spines. An average sized fruit contains 450 to 500 seeds. Seeds have some similarity with the seeds of capsicum from which datura seeds can be differentiated as being odorless, yellowish brown, which are larger and thicker than those of capsicum, having multiple depressions on the surface, are kidney shaped and have two ridges on their convex margins. Datura has a wide range of traditional applications, including the treatment of epilepsy, hysteria, insanity, heart diseases, and for fever with catarrh, diarrhea and skin diseases.

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Crushed leaves are used to relieve pain. During the Sanskritic period, Indian medicine valued the old world species of Datura metal for treating mental disorders, various fevers, tumors, breast inflammations, skin diseases, and diarrhea.

#### Historical aspect

##### Samhita Kala

##### Charak Samhita

Aacharya Charaka explained the use of Datura in Madhvasava and Manashiladilepa.

##### Sushrut Samhita

Datura root is the content of Mushikakalpa which is used for Alarkavisha (dog bite)

##### Sangraha Kala

##### Ashtang Hridayam

Use of Datura phala (fruit) in Kakkurdansha chikitsa.

##### Ashtang Sangraha

Signs and symptoms of Datura poisoning are mentioned.

Use of Dhatura phala (fruit) in Mushika, alarkavisha.

### Laghutrayi

### Sharangdhar Samhita

Dhatura is one of the content in Dhatura tailam (Ref- 9/ 199) and Sannipatabhairava Rasa (Ref - 12/233-247)

### Bhavprakash

Dhatura included under Guduchyadi Varga (1st part)

Use of Dhatura in Samanyajwara (Ref -2nd part/177-179)

### According to Yogratnakar (Uttarardha)

- Dhatura phala is used in Shwanchikitsa.
- Dhatura Swaras is used in Garudanjanam.
- Dhatura is used in Kameshwari Rasa.
- Dhatura is used in Kameshwari Modak.
- Dhatura Swaras Bhavna is used in Sannipatik jvar.
- Dhatura phala (fruit) Bhasma is used in Sannipatik jvar.
- Dhatura one of the content is used in Bhairava rasa.

### Bhaishajyaratnawali

There is reference of Dhatura as a Upavisha (ref. 2/165)

Reference of Dhatura Shodhan (Ref. 2/166, 176)

### Rastarangini

There is description of Dhatura as a content in Chaturvinshastarang, Bradhna shodhahar, Pralapantak rasa (Ref. Shlok No. 342, 360, 369). Description of Matra of Dhatura (Ref. 367-368)

### CLASSIFICATION

#### According to Ayurveda

Kula : kantakari kula

Varga-According to Nighantus

Nighantu	Varga
1) Priyanighantu	Shatpushapadi
2) Bhavprakash	Guduchyadi
3) Aadarsh	Kantakaryadi

Constituent : Chetan Dravya

Morphology : Karya Dravya

Use : Aaushadhi

### Types of Dhatura

They are 5 types according to colour of flower (Raj nighantu in karaveeradi varg)

- White
- Blue,
- Black,
- Red
- Yellow

Now a days white, black colour plants are seen and Black colored Dhatura having High percentage of active principles and they are used in medicines also. There are 3 types - Raja, Krishna and Shveta dhatura. D. Stramonium is Krishna Dhatura. It is herb is bluish black, seeds are black, thorns on the fruit are pointed and the latter dehisce in 4-5 parts.

### Gunas (Properties)

Rasapanchak	Ref.
Rasa	Tikta- kashaya- katu (B.P.)
	Katu (N.A.),(D.N.)
Guna	Guru,Laghu,Ruksha,Vyavayi,Vikasi (B.P.)
Virya	Ushna (B.P.)(D.N.)
Vipak	Katu (N.A.)
Prabhav	Jwaraghna,Madakari (N.A.)

Uses and Properties of Krishna Dhatura and the pharmacological action can be explained on the basis of rasapanchaka.

S.NO	Rasapanchaka	Properties
1.	Rasa	kashaya, tikta, madhura
2.	Guna	tikshna, ruksha, guru
3.	Virya	ushna
4.	Vipaka	katu
5.	Doshakarma	vatakaphashamaka
6.	Karma	Kasahara, kaphagna and vedanasthapana
7.	Madakari	vyavayi-vikasi
8.	Varnya	kantikara
9.	Twachya	kandughna, Dipana, krimighna-jantughna, vishaghna
10.	Dosage	30-60mgs
11.	Bahya	Charmavikara-kandu-kharju- Jantu vikara-yuka-liksa, padadari-vipadika, unmada, vrana-stanapeda, visha-jangama- kukkantha-visa-sotha-vedana pradhan vikara-vatarakta-sandhivata-grudhrasi grathni.
12.	Abhyantar	agnimandyā, jwara, kasa-swasa, unmada,vatarakta-sandhivata, vatavyadhi.

### Synonyms of Dhatura

Nighantu	Synonyms
1) Priya Nighantu	Dhattur, Dhurta, Matul, Unmatta
2) Raj Nighantu	Dhattur, Kitav, Dhurta, Unmatta, Kankahya, Shath, Matulak, Shyam, Madan, Shivashekhar, Kahla, Mohan, Kantakphal, Shiva
3) Nighantu Aadarsha	Dhattura, Unmatta, Madkar, Dhustur, Dhurta, Gantapushpa
4) Bhavprakash	Dhattur, Dhurta, Dhuttur, Kitav, Turi, Unmatta, Kankahya, Matul Devata, Madan, Mahamohi, Shivapriya
5) Yadavji Trikamjee	Dhattur, Kanak, Dhurta, Unmattak
6) Madana phala nighantu	Dhattur,Kitav, Dhurth, Devta, Madan, shatt Unmatta, matal, turi, tarak, Kankahya.

### Shodhana

Seeds of Dhatura, shodhana can be done by 2 methods i.e. by using cow's milk and cows urine. The seeds should be boiled in cow's milk for 03 hrs in dolayantra. After that, they should be washed with warm water, dried and powdered to remove the husk which should be discarded alternatively, seeds be soaked

in cow's urine for four days changing the latter daily and subsequently they are dried and powdered and the husk is discarded.

**According to Rasajalanidhi:** Seeds of Dhatura are purified, if they are kept immersed, for 12 hours, in cow's urine, and then deprived of their husks, by being thrashed with an iron rod in an iron morter.

### Action on Doshas

- Vatashamak
- Kaphashamak
- Pittavardhak

### Action and Uses in Ayurveda and Siddha

- **Leaves:** Swasa, kasa, externally fomentations, ulcers, poisonous bites, earache.
- **Fruit:** vata diseases granthi.
- **Seeds:** Diarrhoea, antipoison, intoxicant, fevers. Externally for piles, vata diseases.
- Black variety is more potent & aphrodisiac.-Indian materia medica ( Volume-I)

**Uses:** - Plant contains many useful phytochemicals which renders it of benefit for using treatment of many kind of diseases. Notably the leaves are frequently use as remedy for asthma & proctatilie cough.

### Systemwise uses

**Local:** Being Jantughna,

Vedanastapana and Kushthaghna. A paste of its leaf juice or the paste made with cow's urine be applied to inflammatory oedema and beejasiddha sarshapa tail is applied to vipadika (ptyelosis) to eliminate pain and to heal the cracks. A suppository (varti) made of dhaturakalka be kept in the anus to suppository (varti) made of Dhaturakalka be kept in the anus to eliminate anal pain caused by piles. Leaf juice is massaged to indralupta. A paste of leaf juice mixed with haridra churna should be applied to inflamed breast in stanavidradhi.

### Internal

**Anna and Purishava:** Dhatura diminishes excessive hyperperistalsis of stomach and duodenum whereby it relieves pain in abdomen and controls secretion of Pitta. Hence, it is used in amlapitta, parinamashula and Pittashmari to relieve pain and to control secretion of acid and bile. It is also useful to relieve pain present in amashayagata vata, Vatajagrahani and pravahika.

### Pranavaha

It relieves bronchial spasm and absorbs mucus whereby it eliminates shvasa and kasa due to removal of obstruction to the movement of prana.

### Rasa – Raktavaha

It improves rate of contraction of the heart and the pulse by stimulating vagus nerve (pranada vatavahini).

**Jvara-** It is very good Kapha-Vatashamaka. Its seed powder is useful to overcome bhrama (dizziness) and pralapa (delirium) associated with vishamajvara. Since, It pacifies doshas causing vishamajvara, seed powder be given with curd to prevent rigor preceding vishamajvara.

### Majjavaha

It is vedanasthapana and madaka. It acts as a cholinergic blocking agent of the nerves and hence works as shoolaghna (antispasmodic). It should be used as vedanashamaka (analgesic) in Vatavyadhi.

### Shukra Artavavaha

Useful in kashtartava (dysmenorrhoea) as it removes uterine spasm. It is also useful in premature ejaculation being shukra stambhana due to its kashaya and rooksha gunas.

### Mutravaha

It acts as antispasmodic of ureters and bladder and hence should be used in renal colic. Should also be used to overcome bed wetting in children.

### Svedavaha

Since it raises body temperature by decreasing rate of perspiration due to its ruksha guna, it is used to prevent or to treat chills and rigors.

### As antidote (Vishaghnatva)

6 to 7 gms of a mixture of 12 parts of punarnava root and 1 gms of Dhaturamula be given with cold water or milk for the treatment of rabies. It ameliorates its signs and symptoms.

### USEFUL PART (Prayojyaanga)

- Patra(leaves)
- Puspha (flower)
- Beeja (seeds) and
- Root are useful parts.

### POISONOUS PART

- All parts of plants are poisonous but seeds & fruits are more.

### DOSE / MATRA

#### Fatal Dose

- Commonly 100 - 125 seeds.
- Alkaloid = 60mg-adult and 4mg-children.

#### Fatal Period

- Death usually occurs in 24 hrs.

### Amayika prayogas

- Guggulu cooked in Dhatura leaf juice should be applied to traumatogenic oedema (abhigata shotha).

- Dhatura seed powder should be cooked with oil and applied to scabies (pama).
- Heated black soil mixed with leaf juice should be applied to apache, granthi and ganda (mumps) to eliminate inflammation.

### Treatment Dhatura poisoning

According to rasa jala nidhi –1) Poison of Dhatura is nullified by drinking four tolas of the juice of seeds of egg fruits (brinjals). Poison of Dhatura is destroyed by drinking the decoction of flowers of cotton combined with their stones. Drinking of saline water also serves the same purpose. One prastha (64 tolas) of cow's milk and eight tolas of sugar, drunk together, counter-act the poison of Dhatura. According Basavarajeeeyam text "visha prativishani kanake nimbu rasa jeerakam" this shloka is denoted for -nimburasa mixed with Jeeraka churna which counter-act the poison of Dhatura.

According to Rasadhatuprakash for the treatment of Dhatura poisoning.

- Kalka of samudra phala mixed with cow urine.
- Acorus clamus (Vacha) powder along with curd.
- The Kalka of erandmoola (ricinus communis) + kashaya (decoction) of karpasa beeja kashaya + cow milk and sugar for the treatment of Dhatura poisoning.

**Important Formulations:** Kanakasava, Ekangavira Rasa, Puspadhanva Rasa, Tribhuvana Kerti Rasa, Sri Jayamangala Rasa, Laghu Vishagarbha Taila, Vishatinduka Taila, Dhattura Taila.

### Conclusion

The present review is indicative of multiple uses of Dhatura in clinical conditions, however the exact mechanism of drug action and possible toxicity effects needs to be evaluated in further animal and clinical studies.

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