



GOKSHURA –"A Multifaceted Medicinal Plant in Ayurveda and Modern science"

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ABSTRACT

Gokshura (*Tribulus terrestris*) is an important medicinal herb widely used in Ayurveda for its therapeutic and rejuvenating properties. It is a small, herb commonly found in dry and sandy regions. Traditionally, it is known for its beneficial effects on the urinary system, reproductive health, and overall vitality. The plant possesses *Madhura rasa* (sweet taste), *Sheeta virya* (cooling potency), and *Madhura vipaka*, which help in balancing *Vata* and *Pitta* dosha.

Pharmacologically, *Gokshura* is recognized for its diuretic, anti-inflammatory, and strengthening actions. It is frequently used in the management of urinary disorders such as dysuria, kidney stones, and urinary tract infections. In classical Ayurvedic formulations, it is a key component of preparations like *Dashamoola* and also used as a *Rasayana* to promote longevity and health.

INTRODUCTION -

Gokshura (*Tribulus terrestris*) has a long history of use in traditional Indian medicine, especially in Ayurveda. Ancient Ayurvedic texts such as the *Charaka Samhita*, *Sushruta Samhita* and *Nighantu-s* describe *Gokshura* as an important herb for maintaining kidney disorder, improving strength, and supporting reproductive functions.

In classical texts it is found to be documented in *Ganas*–

Mutravirechaniya mahakashaya (*Charak*)

Viratvadi gana (*Sushrut*)

Guduchyadi varg (*Bhavprakash*)

Haritikadi varg (*PriyaNighnatu*)

Satavhadi varg (*Raj Nighnatu*)

Aushadhi varg (*Kaidev Nighnatu*)



Classification–

Sr. n	Classification	Name
1	Kingdom	Plantae – Plants
2	Sub-kingdom	Vascular plants - Tracheobionta
3	Distribution	Flowering plants - Magnoliphyta
4	Category	Dicotyledons - Magnoliospida
5	Order	Giraniales
6	Family	Zygophyllaceae
7	Genus	Tribulus
8.	Species	Terrestris Linn.

Synonyms (पर्याय) –

गोकुरः क्षुरकोऽपि स्यात्त्रिकण्टः स्वादुकण्टकः । गोकण्टको गोकुरको वनशृङ्गाट इत्यपि । ॥४४॥
पलकषाश्वदंष्टा च तथा स्यादिक्षुगन्धिका ।(भा.प्र. गुडूच्यादि वर्ग)

Regional name –

Region	Name
Sanskrit name	Gokshura, Trikantaka, Shvadamstra
Hindi name	<i>Gokhru</i>
English name	Land Caltrops, Puncture vine
Punjabi name	<i>Gokhru</i>
Gujrati name	<i>Gokhru</i>
Bengali name	<i>Gokhuri, Gokshur</i>
Kannada name	<i>Negilu / Nerinjilu</i>
Urdu name	<i>Khar-e-Khasak</i>
Malayalama name	<i>Nerinjil</i>
Teluguh name	<i>Palleru</i>
Tamila name	<i>Nerunjil</i>

Morphological characteristics–

Sr no.	Plant part	Characteristics of <i>Pedalium murex</i>
1	Habit	Glabrous annual herb.
2	Leaf	Opposite, petioled, irregularly toothed or amost lobed.
3	Inflorescen	Solitary axillary with two glands at the base.
4	Flower	Yellow coloured with small calyx, four stamens are present.
5	Phal(Fruit)	Indehiscent, hard, capsule, ovoid or pyramidal with four patent spines arising from the bas



Sr no	Plant parts	Characteristics of <i>Tribulus terrestris</i>
1	Habit	Prostrate herb.
2	Leaf	Compound, sub-opposites, stipulate, leaflets in 4 or 5 pairs, pairs unequal, leaf oblong.
3	Flower	Actinomorphic, bisexual, pentamerous, hypogynous and bright yellow, sepals are and free.
4	Fruit	Schizocarp with 5 spinous cocci, each contain one seed.
5	Seed	Obliquely pendulous.



Pedalium murex



Tribulus terrestris

Distribution –

Gokshura grows commonly in sandy soil throughout the India. *Brahat Gokshura* is common in south India.

Varieties (जातियां)–

Two *bheda* – 1. *Laghu* 2. *brahat* (*Bhavprakash NIGHANTU*)

Pharmaceutical properties (Ayurvedic attributes / *guna-karma*)

Guna – *Guru, snigdha*

Rasa – *Madhura*

Vipaka– *Madhura*

Veerya– *Sheeta*

Prabhava– *Kapha-pitta shamak*

Part used (प्रयोज्यांग) –

Mula (Root), *Phala* (Fruits)

	<i>Phala</i>	<i>Mula</i>
<i>Rasa</i>	<i>Madhura</i>	<i>Madhur</i>



<i>Guna</i>	<i>Guru, Snigdha</i>	<i>Guru, Snigdha</i>
<i>Vipaka</i>	<i>Madhura</i>	<i>Madhura</i>
<i>Virya</i>	<i>Shita</i>	<i>Ushna</i>



Fruit



Root

Chemical composition (रासायनिक संघटन)

Total plant contains Diosgenin, Gitogenin, Chlorogenic, Harmane, Harmine, Kaemperal, Quercitin Rutin, Steroidal glycosides (Trillin, diosgenin D, gracillin, dioscin, protodioscin), Saponin C & G, astragaline.

Fruits yielded flavonoid components like Kaempferol, Steroid sapogenins, neotigogenin and hecogenin.

Phytochemical studies-

Fruit Phytochemistry

The fruit (especially the spiny seeds) is the most pharmacologically active part of *Gokshura*. It is rich in steroidal saponins, particularly protodioscin, which is considered a key active compound responsible for many of its therapeutic effects, including support for urinary and reproductive systems.

Fruits also contain significant amounts of flavonoids, which act as antioxidants and help in reducing oxidative stress. Alkaloids, tannins, and phenolic compounds are present and contribute to anti-inflammatory and antimicrobial activities.

In addition, the fruit contains fixed oils and resins, which enhance its overall medicinal value. These compounds collectively support its well-known diuretic and rejuvenating actions.

Root Phytochemistry

The root of *Gokshura* contains a moderate amount of steroidal saponins, though generally less concentrated than in the fruit. These saponins contribute to its strengthening and restorative properties. The root also contains alkaloids and glycosidic compounds, which may support its mild analgesic and anti-inflammatory effects.

Additionally, the presence of tannins and phenolic substances gives the root its astringent nature and helps in tissue healing and reducing inflammation. Trace elements such as calcium and potassium are also found,

Properties and actions

गोक्षुरः शीतलः स्वादुर्बलकृद्वस्तिशोधनः । मधुरो दीपनो वृष्यः पुष्टिदश्चाश्मरीहरः । प्रमेहश्वासकासार्ष कृच्छ्रहृद्रोगवातनुत् ॥
(भा.प्र. गुडूच्यादि वर्ग 45-46)



श्वदंष्ट्रो बृंहणो वृष्यस्त्रिदोषशमनोऽग्निकृत् । शूलहृद्रोग कृच्छ्रघ्नः प्रमेहविनिवर्तकः ॥ (ध.नि. गुडूच्यादि वर्ग 103)

गोक्षुरो मधुरो वृष्यो दीपनो बलपुष्टिकृत् । शीतलो वस्तिवातघ्नो दोषत्रयनिबर्हण । हृद्रोगमेहकृच्छ्राश्मश्वसकासरुजाहरः ॥ (कै.नि. ओषधि वर्ग 69-70)

स्यातामुभौ गोक्षुरकौ सुशीतलौ बलप्रदौ तौ मधुरौ च बृंहणौ । कृच्छ्राश्मरीमेहविदाहनाशनौ रसायनौ तत्र बृहद्गुणोत्तरः ॥ (रा.नि. शताव्हादि वर्ग 43)

गोक्षुरस्य तु मूलं स्यादुष्णं वातकफापहम् । तत्फलं शीतलं स्वादु बल्यं वृष्यञ्च मूत्रलम् ॥ (प्रि.नि. हरीतक्यादि वर्ग 45)

Phytochemical studies -

1. Diuretic Activity

Gokshura extracts of the fruit and whole plant increase urine output and help in flushing out toxins.

2. Anti-urolithiatic (Anti-Kidney Stone) Activity

Gokshura helps in preventing the formation and promoting the dissolution of kidney stones.

3. Anti-inflammatory Activity

Gokshura possesses significant anti-inflammatory effects. It helps reduce swelling and inflammation.

4. Antioxidant Activity

The presence of flavonoids and phenolic compounds contributes to its antioxidant properties.

5. Aphrodisiac and Reproductive Effects

Gokshura has been widely studied for its role in improving reproductive health.

6. Antimicrobial Activity

Gokshura extracts exhibit mild antimicrobial effects against certain bacteria and fungi, supporting use in infections, and urinary tract.

7. Cardioprotective and Hypolipidemic Effects

Gokshura may help in reducing cholesterol levels and improving heart health.

8. Nephroprotective Activity

Gokshura helps in maintaining kidney function and preventing damage caused by toxins or disease conditions.

Uses of *Gokshura* as per classical texts–

1. *Mutrakricchra* (Dysuria)

श्वदंष्ट्रा कण्टकारिभ्यां मूत्रकृच्छ्रे सफाणिताम् । (च.सु. 2/22)

Gruel prepared from *Shwadamshtra* (*Tribulus terrestris*) and *Kantakari* (*Solanum xanthocarpum*) is taken with jaggery relieves *Mutrakricchra* (Dysuria).

समूलगोक्षुरकाथः सितामाक्षिकसंयुतः । नाशयेत् मूत्रकृच्छ्राणि तथा चोष्ण समीरणाम् ॥

(शा.म. 2/2/109)

Kwatha (Decoction) of total plant of *Gokshura* (*Tribulus terrestris*) is mixed with sugar and honey is given to drink. It alleviates *Mutrakricchra* (Dysuria).

2. *Ashmari* (Calculus)

त्रिकण्टकस्य बीजानां चूर्णं माक्षिकसंयुतम् । अविक्षीरेण सप्ताहामश्मरीभेदनं परम् ०/० (सु.चि. 7/19)

Churna (Powder) of *Gokshura* (*Tribulus terrestris*) mixed with honey and *Aviksira* (Goat's milk) is given to drink for 7 days will break *Ashmari* (Calculus).



3. *Keshavardhanartha* (To promote hair growth)

शुक्लरस्तिपुष्पाणि तुल्ये च मधुसर्पिषी। शिरः प्रलेपनं तेन केशसंवर्धनं परम् ॥ (शा.स. 3/11/22)

Flowers of *Gokshura* (*Tribulus terrestris*) and *Tila* (*Sesamum indicum*) are mixed with equal quantity of honey and ghee, and then applied on scalp. This therapy promotes hair-growth.

4. *Amavata* (Rheumatoid arthritis) & *Katishula* (Lumbago)

शुण्ठीगोक्षुर काथः प्रातः प्रातर्निषेवितः। सामेवाते कटिशूले पाचनं रूकप्रणाशनम् ॥ (च.द. 25/9)

Kwatha (Decoction) of *Shunthi* (*Zingiber officinale*) and *Gokshura* (*Tribulus terrestris*) if taken in morning times regularly acts as digestant there by relieves *Amavata* (Rheumatoid arthritis), *Katishula* (Lumbago) and *Ruk* (Pain).

Matra (Dosage)

Phala churna (Powder) -3 to 6 g

Kwatha (Decoction) -50 to 100 ml

Formulations (विशिष्ट योग) –

Sr no.	Name	Indications
1	<i>Gokshuradyavaleha</i>	<i>Ashmari, Mutrakracchra</i>
2	<i>Gokshurabija churna</i>	<i>Ashmari</i>
3	<i>Gokshura kwatha</i>	<i>Mutraghata</i>
4	<i>Gokshuradi modaka</i>	<i>Vajikaranartha</i>
5	<i>Shwadmshttradya ghrata</i>	<i>Hradroga, Shula</i>
6	<i>Shwadamshttradi lepa</i>	<i>Mutrakracchra</i>

Conclusion–

Gokshura is a well-recognized medicinal plant with significant importance in both traditional Ayurvedic practice and modern research. Its wide range of therapeutic properties, supported by its rich phytochemical composition, makes it a valuable natural drug for maintaining the health and managing various disorders.

The herb shows benefits in supporting urinary function, promoting kidney health, and improving reproductive wellness. Its diuretic, anti-inflammatory, antioxidant, and rejuvenating effects justify its classical use in conditions like urinary disorders, कमजोरी (debility), and inflammation. Both the root and fruit contribute to its medicinal value, with the fruit being more potent due to its higher concentrations of active constituents.

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