A LITERARY REVIEW OF GOKSHURA (Tribulus terrestris Linn)

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ABSTRACT

Tribulus terrestris Linn is one of the most important herbs among the commonly used herbs in traditional system of medicine. It is a versatile herb having multidimensional use. Ayurvedic Nighantus are clearly mentioned Gokshura (Tribulus terrestris Linn.) in detail with specific synonyms and therapeutic indications. Nighantus are mentioned that gokshura contain madhura rasa and it has sita virya. It is used as a vrisya and rasayana drug. Though, it is a drug of choice of mutravaha srota diseases, but it can also use in asmari, swas, kas, hridroga and prameha. The use of gokshura in vatavyadhi is very much effective. It can also use in sannipatik disorder. Recent research work claims that it has anticancer, lithotriptic, hepatoprotective, diuretic and aphrodisiac properties. In this study we try to assemble all the information’s about gokshura mentioned in ayurvedic nighantus.

Keywords: Gokshura, Nighantu, mutravaha srota, lithotriptic, vrisya, rasayana.

INTRODUCTION

The name and synonyms of gokshura [1] are not found in the Vedic literature. Caraka identified it is the best drug for mutrakrichha and vataroga. Gokshura is one of the herbs which are “Mutrala” as well as “sothahara”. The root of gokshura is one of the important ingredients of dasamula. The herb spreads on ground and growing widely with aroma of sugarcane. Leaves are similar to those of Bengal gram plant. The fruits resembling water chestnut armed with spines. Mainly two varieties gokshura mentioned – Brihat (Pedalium murex Linn) and Laghu (Tribulus terrestris Linn.). According to Sivadasa Sen the bigger variety of gokshura is the best. The whole plant along with root and fruits used in asmari[1]. Gokshura is available all over India especially north and south India. The classical catagorization of gokshura in Caraka samhita – sothahara, mutra viracaniya and krmighna but in Susruta samhita it mentioned in vidarigandhyadi, virtaravadi and , laghu paicamulavratarvādi gana. Vagbhata categorized gokshura in vidarigandhyadi gana. The synonym of gokshura in varias nighantus emphasise its diversity.
Synonym of Gokshura (Tribulus terrestris Linn.) in different Nighantus:

**Bhav prakash Nighantu** [2](Pandey, 1969):
Bhakstaka, gokantak, iksugandhika, ksuraka, palamkasa, svdramastra, svadukantaka, trikantaka, vanasrngata.

**Dhanwantar Nighantu** [3] (Sharm, 1982):
Gokantak, swadukantak, gokshur, gokshurak vakhshak, vakhshat,kantakatri

**Kaidev Nighantu** [4] (Sharma, 1979):
Gokantak, kantaphala, bhakstaka, swadukantak, swad anstak, byaladanstra, gokshur, gokshur, kshur, sarang, shalasringat, trikantak, trik

**Madanpala Nighantu** [5]:
Gokantak, kantaphala, swadukantak, byaladanstra, gokshur, sarang, trikantak, trik, khurak, bhaksyantaka, trikantak, vyaladamstraka, svadamstr, sthusasringata.

**Shaligram nighantu** [6] (vaishya, 1981):

<table>
<thead>
<tr>
<th>National Name</th>
<th>International name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hindi : Gokhru</td>
<td>Afganistan: Krunda</td>
</tr>
<tr>
<td>Punjabi : Bakhra</td>
<td>Arab: Bastitaj</td>
</tr>
<tr>
<td>Bombay : Gokhru</td>
<td>English: Caltrops</td>
</tr>
<tr>
<td>Sanskrit : Bahukantaka</td>
<td>Pers: Kharekhasak</td>
</tr>
<tr>
<td>Telegu : Chirupalleru</td>
<td>South Africa: Devil’s Thorn</td>
</tr>
<tr>
<td>Urdu : Gokharu</td>
<td>Malaysia: Neringil.</td>
</tr>
</tbody>
</table>

**Habitat**: All over India especially north and south India.

**Botanical Description** [14]:
Small herb with 2 to 3ft of height.
Branches: Spread from all the sides.
Leaves: Like that of gram plant.
Flowers: Small, yellow colored with five petals.
Fruits: Slightly pentagonal having 2–3 sharp thorns.
Seeds: Many, contain scented oil.
Roots: 10-13 cms long smoky with slightly strong smell and sweet. Flowering occurs in autumn followed by fruiting.

**Pharmacognosy** [11]:
Root: Occurs in pieces, 7-18 cm long and 0.3-0.7 cm in diameter, cylindrical, fibrous, frequently branched, bearing a number of small nodules, fracture fibrous, odor aromatic, taste sweetish and astringent. Transverse section of primary root shows a layer of epidermis followed by 4-5 layers of thin walled parenchymatous cortex. Endodermis is distinct, pericycle enclosing diarchy stele. In mature root, cork is 4-6 layered, cork cambium single layers followed by 6-14 layers of thin walled parenchymatous cells with varying number of fibers distributed throughout. Xylem parenchyma with simple pits and reticulate thickening and xylem fibers few. Starch grains and rosette crystals of calcium oxalate are present in secondary cortex, phloem and medullar ray cell; few prismatic crystals are also present in xylem ray cells.
**Fruit:** Fruit is stalked, globosely, possessing fire woody wedge shaped cocci, covered with two pairs of short spines, one pair larger than the other. Microscopically the pericarp in differentiated into epicarp, mesocarp and endocarp. Outer surface of epicarp in covered by non glandular trichomes. The endocarp is 3–4 layered, composed of selerenchymatous cells containing prismatic crystals of calcium oxalate. Vessels have simple pits and some show helical thickening. Fibers are lignified, linear, along with tapering ends.

**Dosage:** Fruit Powder: 2.5 to 5 gms.
Decoction: 60 – 100 ml.

**Parts use:** Fruit, root, pentad.

**Properties [1]:**
- **Rasa:** Madhur
- **Guna:** Guru, Snigdha.
- **Virya:** Sita
- **Vipaka:** Madhura
- **Karma:** Vatahara, Kaphahara, Rocana, Dipana, Bhedana, Svarya, Hṛdya, Vṛsya.

**Properties of Gokshura according to different Ayurvedic Text:**
- **Bhavprakas nighantu**[2]: Rasa- Madhura, Guna-Laghu, Ruksha, Virya-Sita
- **Kaidev Nighantu**[4]: Rasa- Madhura, Virya-Sita
- **Madanpala Nighantu**[5]: Rasa- Madhura, Virya-Sita
- **Shaligram nighantu**[6]: Rasa- Madhura, Virya-Sita
- **Raj Nighantu**[7]: Rasa- Madhura, Virya-Sita
- **Priya Nighantu**[8]: Rasa- Madhura, Virya-Sita
- **Sankar Nighantu**[9]: Rasa- Madhura, Virya-Sita
- **Nighantu Adarsha**[10]: Rasa- Madhura, Virya-Sita

**Chemical Constituents [11]:**
- **Fruits:** Chlorogenin, diosgenin, gitogenin, rutin, rhamnose.
- **Roots:** Champesterol, β-sitosterol and stigmasterol, neotrigogenin.
- **Aerial Parts:** Astragalin, dioecin, diosgenin, hecogenin, ruscogenin, furostanol, glycoside, saponin terrestrosides etc.

**Identity, Purity and Strength:**
- Root: Foreign Matter: Not more than 2%
- Total ash: Not more than 13%
- Acid-insoluble ash: Not more than 3%
- Alcohol-soluble extractive: Not less than 4%
- Water-soluble extractive: Not less than 10%
- Fruit: Foreign matter: Not more than 2%
- Total ash: Not more than 15%
- Alcohol soluble extractive: Not less than 6%
- Water soluble extractive not less than 10%

**Substitute and Adulterants [11]:** The fruits of *Pedalium murex Linn* are occasionally substituted to *Tribulus terrestris Linn*, being considered as large Gokhru. The fruits of *Acanthospermum hispidum DC* resemble the individual cocci of *Tribulus* and are frequently found mixed with the later.

**Trade and Commerce [11]:**
- Retail market price: Whole plant – Rs. 10/- per kg.
- Fruit: Rs. 15/- per kg. (2001)

**Cultivation [11]:**
- The herb is a common need, springs up soon after first showers. It prefers medium and sandy soil. The plant can be propagated by seeds. It bears flowers and fruits almost throughout the year.

**Contraindications [15]:** *Tribulus terrestris Linn* is very safe no contraindications are noted with *Tribulus terrestris*.

**Drug interaction [15]:** No drug interaction has been reported with plant or any synthetic drug with *Tribulus terrestris*.

**Therapeutic uses of Gokshura in different Nighantus:**
- **Bhav prakash Nighantu**[2]: Asmari, hridroga, vahumutra, swas, kas, arsha,
- **Dhanvantar Nighantu**[3]: Mutrakrichha, hridroga, prameha, sula, tridosashamak, dipak.
- **Kaidev Nighantu**[4]: Mutrakrichha, asmari, hridroga, prameha, swas, kas, vastivata, brisya, balya.
- **Madanpal Nighantu**[5]: Mutrakrichha, hridroga, prameha, swas, kas, vataroga.
- **Shaligram nighantu**[6]: Mutrakrichha, asmari, prameha, daha nashak.
- **Raj Nighantu**[7]: Vrisya, mutrakrichha, asmari, prameha, rasayana
**Priya Nighantu**[^1]: *Vrishya, mutrala*

**Sankar Nighantu**[^2]: *Vrishya, mutrala, hridroga, sula, swas, kas, dahanashak, vastivata.*

**Nighantu Adarsha**[^3]: *Vrishya, muttrakrichha, asmari, hridroga, prameha, swas, pradar, rasayana.*

### Table 2: Position of Gokshura in different ayurvedic text:

<table>
<thead>
<tr>
<th>Nighantu</th>
<th>Varga</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shaligram nighantu[^8]</td>
<td>Guruchyadi varga</td>
</tr>
<tr>
<td>Raj Nighantu[^9]</td>
<td>Satajhad varga</td>
</tr>
<tr>
<td>Priya Nighantu[^10]</td>
<td>Haritakyadi varga</td>
</tr>
<tr>
<td>Nighantu Adarsha[^12]</td>
<td>Patladi varga</td>
</tr>
<tr>
<td>Caraka</td>
<td>Sotha hara, mutra virechanitya, krimighna</td>
</tr>
<tr>
<td>Susruta</td>
<td>Vidarigandhadi, viratavādi, laghu paćamulavratavarvādi</td>
</tr>
<tr>
<td>Vagbhath</td>
<td>Vidarigandhadi, ausadhā varga</td>
</tr>
</tbody>
</table>

**Ethical preparations**[^13]: Gokshuradi guggul, dasamularista, asmarihara kasaya, gokshuradi avaleha, gokshuradi modaka, goksuradi churna, goksuradi kwath.

## CONCLUSION

Gokshura is a potential herbs having immeasurable beneficial quality in different aspect have been used by our ancestors. It has significant role to destroy diseases of mutravaha srota as well as other systems. The rasayana and vrisya effect of gokshura take a unique place in the traditional herbs based remedies and also economical growth of the nation.

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