

A LITERARY REVIEW OF *GOKSHURA (Tribulus terrestris Linn)*

Ajoy Bhakat¹, Sumana Saha²

¹M.D (Roga Nidan) Research Fellow, J.B. Roy State Ayurvedic Medical College and Hospital, Kolkata-700004, West Bengal, India

²M.D (kaya chikitsa) S.R.F, National Research Institute of Ayurvedic Drug Development, Kolkata 700091, West Bengal, India

Email: ayurveda.ab@gmail.com

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 categorization of *gokshura* in *Caraka samhita* – *sothahara, mutra viracaniya* and *krmighna* but in *Susruta samhita* it mentioned in *vidarigandhyadi, virtaravadi* and , *laghu pañcamulavratarvādi gana*. *Vagbhata* categorized *gokshura* in *vidarigandhyadi gana*. The synonym of *gokshura* in various *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 vakshak, vakshatak,kantakatri

KaidevNighantu (Sharma^[4],1979):

Gokantak, kantaphala, bhakstaka, swadukantak, swadanstak, byaladanstra, goksharu, gokshur, kshur, saraᅅg, shalasringat, trikantak, trik

Madanpala Nighantu^[5]:

Gokantak, kantaphala, swadukantak, byaladanstra, gokshur, saraᅅga trikantak, trik, khurak, bhāksyantaka, trikantak, vyaladamstraka, svadamstra, sthulasrngata.

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

Bhāksyantaka, iksugandhika, vanasrngata, lamkaśa, śaranga, vakshatak, khurango, gokshurak khurak, vadra kantak, trik, trikantak, saraᅅga, gokshur, gokantak, kantaphala, bhakhhar swadanstak, byaladanstra

Raj Nighantu^[7](Narahari and Raj Nighantu):

Bhadrakantaka, duscakrama, vyaldantra, mahanga, gokhuraka, kantah, bahukantaka, gokantaka, palankasa, bhaksataka, sthal-srngataka, iksu gandha, trikantaka, sadanga, ksura, kantaphala, ksudra-ksura, canadrumqa, van-srngataka, svadukantah.

Priya Nighantu (Sharma^[8],1983):

Swadanstak, goksharu, vanasrngata

Sankar Nighantu^[9] (Pandit Dutta,1935):

Bhāksyantaka

Nighantu Adarsha^[10] (Vaidya Bapala,1968):

Swadanstak, gokshur, gokshurak, śaranga svadamstra, vanasrngata

Table 1: National and international name of Gokhsura^[14] (*Tribulus terrestris* Linn)

National Name	International name
Hindi : Gokhru	Afganistan: Krunda
Punjabi : Bakhra	Arab: Bastitaj
Bombay : Gokhru	English: Caltrops
Sanskrit : Bahukantaka	Pers: Kharekhasak
Telegu : Chirupalleru	South Africa: Devil's Thorn
Urdu : Gokharu	Malaysia: Neringil.

Habitat ^[14]: 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, frac-

ture 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 is differentiated into epicarp, mesocarp and endocarp. Outer surface of epicarp is covered by non glandular trichomes. The endocarp is 3-4 layered, composed of sclerenchymatous 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^[4]:

Rasa: Madhur

Guna: Guru, Snigdha.

Virya: Sita

Vipaka: Madhura

Karma: Vatahara, Kaphahara, Rocana, Dipana, Bhedana, Svarya, Hr̥dya, Vr̥sya.

Properties of Gokshura according to different Ayurvedic Text:

Bhavprakash 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, rhamnase.

Roots: Campesterol, β -sitosterol and stigmasterol, neotrigogenin.

Aerial Parts: Astragalinal, dioscin, 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 weed, 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* Linn.

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,*

Dhanwantar Nighantu^[3]: *Mutrakrichha, hridroga, prameha, sula, tridosashamak, dipak.*

Kaidev Nighantu^[4]: *Mutrakrichha, asmari, hridroga, prameha, swas, kas, vastivata, brisyā, balya.*

Madanpal Nighantu^[5]: *Mutrakrichha, hridroga, prameha, swas, kas, vataroga.*

Shaligram Nighantu^[6]: *Mutrakrichha, asmari, prameha, daha nashak.*

Raj Nighantu^[7]: *Vr̥sya, mutrakrichha, asmari, prameha, rasayana*

Priya Nighantu^[8]: *Vrishya, mutrala*
Sankar Nighantu^[9]: *Vrishya, mutrala, hridroga, sula, swas, kas, dahanashak, vastivata.*

Nighantu Adarsha^[10]: *Vrishya, mutrakrichha, asmari, hridroga, prameha, swas, pradar, rasayana.*

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

<i>Nighantus</i>	<i>Varga</i>
<i>Bhav prakash Nighantu</i> ^[2]	<i>Guduchyadi varga</i>
<i>Dhanwantar Nighantu</i> ^[3]	<i>Guduchyadi varga</i>
<i>Kaidev Nighantu</i> ^[4]	<i>Ausadhi varga</i>
<i>Madanpala Nighantu</i> ^[5]	<i>Abhayādi varga</i>
<i>Shaligram nighantu</i> ^[6]	<i>Guruchyadi varga</i>
<i>Raj Nighantu</i> ^[7]	<i>Satajhadi varga</i>
<i>Priya Nighantu</i> ^[8]	<i>Haritakyadi varga</i>
<i>Sankar Nighantu</i> ^[9]	<i>Pratham varga</i>
<i>Nighantu Adarsha</i> ^[10]	<i>Patladi varga</i>
<i>Caraka</i>	<i>Sotha hara, mutra virechaniya, krimighna</i>
<i>Susruta</i>	<i>Vidarigandhadi, viratarvādi, laghu pañcamulavratavādi</i>
<i>Vagbhat</i>	<i>Vidarigandhadi, ausadha varga</i>

Ethical preparations^[11]: *Gokshuradi guggul, dasamularista, asmarihara kasaya, gokshuradya 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 *vrishya* effect of *gokshura* take a unique place in the traditional herbs based remedies and also economical growth of the nation.

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Source of Support: Nil

Conflict Of Interest: None Declared

How to cite this URL: Ajoy Bhakat & Sumana Saha: A Literary Review Of Gokshura (Tribulus Terrestris Linn). International Ayurvedic Medical Journal {online} 2018 {cited July, 2018} Available from: http://www.iamj.in/posts/images/upload/1501_1505.pdf