



POTENTIAL USE OF MEDICINAL PLANT GOKHRU

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ABSTRACT

Currently, herbal medicines have attained great preferences over chemical drug based medicines due to more economic, lesser side effects on health and easy availability. Gokhru is an important medicinal plant which is being used in preparation of formulations in pharmaceutical companies. Gokhru is of two types i.e. Chhota gokhru (*Tribulus terrestris*) and Bada Gokhru (*Pedalium murex* L.) which are popular herbal plants originated from very famous Ayurvedic plant Gokhru. Further studies can be conducted on these two medicinal plant species by identifying their potential to develop into a new drug or to be used as a medicinal plant in curing various diseases. The *T. terrestris* plant is mainly used to cure urinogenital disorders and kidney disorders such as renal and gall bladder stone. On the other hand, the *P. murex* plant mainly used to cure sexual disorders like infertility, erectile dysfunctioning in both male and females. These plants are known for major therapeutic properties such as anti-ulcerative, anticancer, aphrodisiac, analgesic, stomachic, anti-hypertensive, diuretic, urinary anti-infective, cardio tonic, antibacterial, anti-inflammatory, nephroprotective, antispasmodic and anti-carcinogenic.

KEYWORDS: Gokhru is of two types i.e. Chhota gokhru (*Tribulus terrestris*) and Bada Gokhru (*Pedalium murex* L.) which are popular herbal plants originated from very famous Ayurvedic plant Gokhru.

INTRODUCTION

Tribulus genus belongs to the family *Zygophyllaceae* commonly known as "small caltrop," "Chota Gokhru".^[1] There are almost 20 species of this plant out of which three main species *Tribulus cistoides*, *T. terrestris*, and *Tribulus alatus* are found in India.^[2]

Conventionally, it is used to enhance the hormonal production in both male and females.^[3] *T. terrestris* is mainly used to treat urinary and kidney disorders. Furthermore, it consists of other medicinal properties such as diuretic, antiurolithic, immunomodulatory, anticancer, aphrodisiac, analgesic, stomachic, anti-hypertensive, diuretic, lithonriptic, urinary anti-infective, cardiogenic, antibacterial, anti-inflammatory, antispasmodic, antihelminthic, larvicidal, and anti-carcinogenic.^[4]

Pedalium murex (*P. murex*) Linn is annual herb, which grows abundantly in India, Srilanka, tropical Africa. Dinatoin glycoside and diosmetin glucuronides are isolated from the leaves of *P. murex*.^[5] An infusion from leaves and stems was reported to be used in the treatment of gonorrhoea and dysuria. In the past several flavonoids have been isolated from the leaves and

flowers. Recently, two new compounds are isolated from the fruits (Heptatriacontan-4-one, tetratriacontanyl octacosanoate).^[6]



Fig. Tribulus terrestris.



Fig. Pedalium murex.

Taxonomical classification**Synonyms**

Gokshura, Bada gokhru, Chota gokhru, Caltrops fruit, Tribulus and Puncture Vine.

Biological Source

In Ayurveda two types of Gokhru are used, that is, Bada and Chota Gokhru. The smaller or Chhota Gokhru is the dried ripe seeds of Tribulus terrestris Linn., belonging to family Zygophyllaceae.

Geographical source

The plant is an annual, prostrate herb growing throughout India upto 3,500 m in Kashmir.

Organoleptic Characters

- Colour-fruits are greenish to gray
- Odour-odourless
- Size-1.0 to 1.5cm in diameter, 8.5mm in thick
- Shape-fruits are globose, consisting of 5 to 10 Woody cocci
- Texture-hard
- Taste-slightly bitter and astringent

Scientific Classification

Taxonomy: Tribulus Terrestris Taxonomy: Pedalium murex

Kingdom: Plantae

Kingdom: Plantae

Family: Zygophyllaceae

Family: Pedaliaceae

Order: Geraniales

Order: Lamiales

Phyllum : Spermatophyta

Phyllum : Spermatophyta

Genus: Tribulus

Genus: Pedalium

Species: Terrestris

Species: murex

Pharmacology

- **Diuretic activity**

The diuretic properties of T. Terrestris are due to large quantities of nitrates and essential oil present in its fruits and seeds. The diuretic activity can also be attributed to the presence of potassium salts in high concentration.^[7]

Chemical constituents

Tribulus Terrestris has saponins, flavonoids, glycosides, alkaloids, sterols, nitrates and tannins.

Uses

- Relieves Urinary Disorders
- Improves Kidney Functions
- Boosts Sexual Health And Stamina
- Treats PCOS
- Promotes Cardiac Functioning
- Aids in Digestion
- Dismisses Pain

Precautions when using Gokhru

- Stomach pain.
- Nausea.
- Diarrhea.
- Vomiting.
- Constipation.
- Difficulty in sleeping.

- **Antidiabetic activity**

Saponin from T. Terrestris possesses hypoglycemic properties.^[8] T. Terrestris significantly reduced the level of serum glucose, serum triglyceride, and serum cholesterol, while serum superoxide dismutase (SOD) activity was found to be increased in alloxan-induced

diabetic mice. The decoction of *T. Terrestris* showed inhibition of gluconeogenesis in mice.^[8,9]

- **Antioxidant activity**

Experimental studies have shown that the ethyl acetate component extracted from the *P. murex* plant have antioxidant property.^[10]

- **Antiulcer activity**

From the reported studies, it was found that the aqueous extract isolated from the *P. murex* leaves possesses antiulcer property when tested in rat model at 200 mg/kg dosage.^[11]

CONCLUSION

Conclusively, due to the enrichment in the therapeutic phytochemical constituents, the *T. terrestris* and *P. murex* plants are used in various Ayurvedic products and formulations to cure various diseases. The *T. terrestris* plant is mainly used to cure urinogenital disorders and kidney disorders such as renal and gall bladder stone. On the other hand, *P. murex* plant has aphrodisiac property and mainly used to cure sexual disorders such as infertility, impotence, premature ejaculation, erectile dysfunction in both male and females.

Due to the presence of some similar chemical constituents both the plants possess some similarity in their properties and is used to treat various other diseases such as asthma, cardiac disorder, skin diseases, cough, and also acts as an anti-inflammatory, anticancer, antioxidant, aphrodisiac, antimicrobial, antidiabetic, nephroprotective, and antifungal agent. Both these plants are of significant medicinal value and can be further investigated for developing more Ayurvedic and herbal formulations for wellness of humankind.

REFERENCES

1. Samy MN, Bishr MM, Ahmed AA, Sayed HM, Kamel MS. Pharmacognostical studies on flower of *Tribulus terrestris* L. *J Pharmacogn Phytochem*, 2013; 1: 18-22.
2. Semwal A, Kumar R, Teotia UV, Singh R. Development of quality control parameters for the standardization of bark of *Ficus benghalensis* Linn. *J Acute Dis*, 2013; 2: 296-9.
3. Akram M, Asif HM, Akhtar N, Shah PA, Uzair M, Shaheen G, et al. *Tribulus terrestris* Linn.: A review article. *J Med Plants Res*, 2011; 5: 3601-5.
4. Rajashekar V, Rao EU, Srinivas P. Biological activities and medicinal properties of *Gokhru* (*Pedalium murex* L.). *Asian Pac J Trop Biomed*, 2012; 2: 581-5.
5. Sankara Subramanian S, Nair AGR. Flavonoids of the leaves of *P. murex*. *Phytochemistry*, 1972; 11: 464-465. [Google Scholar]
6. Yogendra N, Shukla Raghunath S, Thakur Hepta triacontan-4-1, tetratriacontanyl octacosanoate and other constituents from *P. murex*. *Phytochemistry*,

- 1983; 22(4): 973-974. [Google Scholar]
7. 20. Al-Ali M, Wahbi S, Twaij H, Al-Badr A. *Tribulus terrestris*: Preliminary study of its diuretic and contractile effects and comparison with *Zea mays*. *J Ethnopharmacol*, 2003; 85: 257-60.
8. 33. Li M, Qu W, Chu S, Wang H, Tian C, Tu M. Effect of the decoction of *Tribulus terrestris* on mice gluconeogenesis. *Zhong Yao Cai*, 2001; 24: 586-8.
9. Amin A, Lotfy M, Shafiullah M, Adeghate E. The protective effect of *Tribulus terrestris* in diabetes. *Ann N Y Acad Sci*, 2006; 1084: 391-401.
10. Heidari MR, Mehrabani M, Pardakhty A, Khazaeli P, Zahedi MJ, Yakhchali M, et al. The analgesic effect of *Tribulus terrestris* extract and comparison of gastric ulcerogenicity of the extract with indomethacin in animal experiments. *Ann N Y Acad Sci*, 2007; 1095: 418-27.
11. Amin AM, Lotfy M, Shafiullah M, Adeghate E. The protective effect of *Tribulus terrestris* in diabetes. *Ann N Y Acad Sci*, 2006; 1084: 391-401.