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Ethnobotanical studies on medicinal plant: Gokhru (*Tribulus terrestris*)

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Abstract

Tribulus terrestris is a straggling spreading shrub found throughout India. Different parts of Gokhru are used to cure various diseases. The seeds are considered as tonic and aphrodisiac in How Peh and Ho-Nan provinces. The plant is used as remedy for rheumatism in South Africa. The fruit is used for cough, liver and urinary complaints in Maharashtra and Gujarat.

Keywords: *Tribulus terrestris*, tribals, ethnobotany

1. Introduction

The use of plants as source of medicine dates back to about 4000 to 500 B.C. Hippocrates called 'Father of modern medicine' in his writings (400 B.C.) included about 300-400 medicinal plants. The Chinese were the pioneers in using plants as valuable source of medicine. The herbal wealth of India and the knowledge of their medicinal properties have a long tradition. The traditional Indian system of medicine includes the empirical forms of folk medicines which are village based, region specific, indigenous herb-based, local resource based and in many cases, community specific.

The science of relationship of only the primitive or aboriginal people with plants is generally considered as ethnobotany. But, the term can also be applied to the natural and direct relationship of plants with the people at any level of antiquity, primitiveness or culture and even the sophisticated society. About 80% of India's population lives in villages and a considerable proportion comprises tribals living in remote forest areas. These tribals and rural people possess unique knowledge about medicinal uses of plants.

Tribulus terrestris Linn. (Gokhru) Family Zygophyllaceae is used all over the world due to its great medicinal importance. It is a straggling spreading hairy shrub having opposite leaves with 3-6 pairs of leaflets. Fruit is globose, consisting of 5 hairy often muriculate, woody cocci each with 2 pairs of hard, sharp spines, one pair longer than the other. Seeds several in each coccus with transverse partitions between them. It is widely distributed in the arid zones of both Northern and Southern hemispheres. The plant contains saponins which on hydrolysis yield steroidal saponin-ginsenosides, gitogenin, chlorogenin, ruscogenin and 2, 5 D-spirosta-3, 5-diene. The leaves are used as stomachic and lithontriptic. The fruit is considered as tonic and diuretic, used in painful micturition and calculous affections and is also prescribed in Bright's disease. An infusion of fruits is given for gout and renal diseases and also for cough, asthma, leucorrhoea and sexual debility. The roots are aperients^[1, 2].

2. Materials and methods

Local survey and identification of plants of Gokhru growing in our locality in Jaipur was done. The plants were collected, identified and preserved. Plants were identified using floras of Herbarium of Department of Botany, University of Rajasthan, Jaipur. Crude herbal drugs were also collected from the crude drug dealers and deposited in the herbarium. In order to verify the efficacy of the traditional herbal medicine, information was collected from folk or tribal people of several areas.

3. Results and discussion

Tribulus terrestris is known by different names in different countries of the world. Afghanistan –Krunnda; Africa-Caltrop; Arab-Bastitaj; Cape Peninsula-Duiveltjes; China-ChiLi, TsiLiTse; France-Croix de Chevalier; LaReunion-Pagode; Las Bela-Gohind, Gohindwal; Loralai-Skroundki; Ormara- Khorbar, Tahkandi; Persia-Kharekhasak, Khussuck; S. Africa- Devil's Thorn; Spain-Abrojos; Sri Lanka-Neranj, Sembunerinchi

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The plant is used worldwide for its medicinal potential.

- The local people of Ormara make paste of the plant and after mixing this paste with water, drink it as a tonic and cooling medicine.
- The plant is used for the treatment of gonorrhoea in Las Bela.
- People of Loralai take the seeds of gokhru with milk to cure debility.
- French use the roots and leaves as tonic and aperient.
- Chinese consider the fruit of the plant as tonic and astringent. They use it for treating cough, scabies, asthma, spermatorrhoea and ophthalmia. It is also used in treatment of post partum haemorrhage and dysentery. Local people of How Peh and Ho Nan provinces consider the seeds as tonic and aphrodisiac, they use the seeds for the treatment of disease of the bladder particularly vesicular calculus.
- South Africans use the plant as a remedy for rheumatism.
- The leaves are considered as astringent and diuretic and fruits as aperient, galactagogue and aphrodisiac by the people of La Reunion.
- The plant is used to cure whitlow in the Gold Coast [3].

In India it is known by various names in different languages Bengali-Gokhru, Gokhuru; Gujarati-Beta gokhru, Gokharu, Mitha gokhru; Kannad-Sanna neggilu; malyalam – neringel, nerinnil; Marathi – Ghokharu, lahanagokharu, Sharatte; Punjabi – bakhra, bhukri, gokhrudesi, lotak; Rajasthani-Gokhatri, Gokhru-bara, Kanti, Gokhrudesi; Tamil – nerunji, sirunerinji; Telugu – chirupalleru, palleru; Urdu- Gokharu; Uriya –gakhura, gokshra

The tribals and local people of different regions of the country utilize the plant for the treatment of various ailments.

- The tribals of Eastern Rajasthan utilize the fruit for preparing medicine for backache, asthma and cough. The whole plant is used for treating impotency. The leaves are used as a vegetable and fruit is eaten by some tribes of Rajasthan [4, 5, 6, 7].
- Bhoja tribe of Terai region of U.P. use the leaves for treatment of corns. Certain tribes of U.P. use the fruit for treatment of cough and leucorrhoea and fruit is also eaten raw [8, 9, 10, 11].
- The fruit of the plant is used for cough in Maharashtra.
- The plant extract is applied on wounds in Andhra Pradesh.
- In Ladakh, the plant is popularly known as Rasha or Kokulla and the fruit of plant are used as diuretic.
- The fruit is used in liver and urinary complaints and general debility in Gujarat.
- People of Punjab use the fruit as an aphrodisiac [12, 13, 14].
- The fruit is highly valued as a diuretic in Southern India. The fruit and root boiled with rice is taken in large quantities for urinary troubles [3].

4. Conclusion

Plants have been one of the important source of medicine ever since the dawn of human civilization. In spite of tremendous developments in the field of Allopathy during the 20th century, plants still remain one of the major source of drugs in modern and traditional systems of medicine throughout the world. The developing countries spend roughly 40-50% of their total health budget on drugs and as a strategy to reduce the financial burden on developing countries, WHO encourages and recommends inclusion of herbal medicines in natural health care programs. *Tribulus terrestris* (Gokhru) is

valued for its great medicinal importance all over the world. Here, attempts are made to document different ethnobotanical aspects of Gokhru (*Tribulus terrestris*).

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