

MEDICINAL IMPORTANCE OF *PEDALIUM MUREX L.* IN AYURVEDA AND MODERN SCIENCE

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ABSTRACT

Tribulus Terrestris and *Pedaliium Murex* are two types of herbs derived from the famous Ayurvedic herb called Gokshuru. These plants are famous for their medicinal properties. In Ayurveda, *T. terrestris* is known as *laghugokshuru* and *P. murex* is known as *brihatgokshuru*. *T. terrestris* The plant always has a slightly astringent taste, while the *murex* fruit has a slightly sweet taste. The fruit is used in the treatment of many diseases such as urinary tract disorders and adrenal stones. In this article, we talk about the medical, Ayurvedic and folk uses of plants from different parts of the world. From many studies, *T. terrestris*. While the native plant has significant medicinal value, the *murex* fruit is used only as a substitute or gender for the native plant. Studies have shown that the *T. terrestris* plant is often used to treat diseases of the genitourinary system and kidneys, such as kidney stones and gallbladder stones. On the other hand, the *Murex* plant has aphrodisiac properties and is frequently used in the treatment of sexual dysfunctions such as infertility and erectile dysfunction in men and women. This herb also contains some similar phytochemicals and has aphrodisiac, anti-inflammatory, analgesic, diuretic properties and is used for the treatment of other ailments such as cough, asthma, heart diseases, bladder problems, gallstones. These plants are known for their wonderful medicinal properties such as anti-inflammatory, antirolithiasis, antibacterial, aphrodisiac, analgesic, stomachic, antihypertensive, diuretic, diuretic, cardiotonic, antibacterial, anti-inflammatory, Kidney protection, antispasmodic, anthelmintic and anticancer.

Keywords: *Tribulus Terrestris*, *Pedaliium Murex*, Gokhru, Aphrodisiac, Rasapanchak, Ayurveda.

Introduction

The *Pedaliium* genus belongs to the Pedaliaceae (Sesamaceae) family. Stapf (1905) identified, *Pedaliium* has four species: *P. caillaudii*, *P. intermedium*, *P. filiforme* and *P. busseanum*. As per the modern records (Botanical Lists and USDA GRINGlobal), it includes a species recognized as *Pedaliium murex* L., while, *P. muricatum* Salisb, *P. microcarpum* Decne and *Rogeria*. *Microcarpa* Klotzsch is a synonym for *P. murex*. The status of the other names as generic names in modern literature or as words other than recognized botanical names is unclear and remains unresolved to date. It is often referred to in English as a large fruit and water in the ground, in Hindi as *Badagokhru* and in Sanskrit as *Gaja_daunstraka*, *Gokshura* or *Titta-gokshura*.

Alternative names for *P. Murex* are: *Peela gokhru*, *enugupalleru*, *pedda palmeru*, *enuga palleru*, *mulla*, *yenugapalleru* (Telugu), *annegalu gida*, *aneggilu*, *doddaneggilu* (Kannada), *motto ghokru*, *Mothergkharu*, *hatbrm*, *Osbugh*, *karonathia* (Marathi), *kadvaghokru*, *mothaghokru*, *mothangokharu*, *mottoghokru*, *ubbaghokru* (Gujarati), *Motto ghokru*, *baraghokhu*, *mothar ghokru* (Bengali), *gokshura*, *gokara* (Odia), *gokrukalan* (Punjabi), *gokrukalan* (Punjabi), *gokrukalan* (Punjabi), (Arabic), *sulegi* (Burmese), *Dakhini-gokhru* (Raj), *khasake* remaining (Persian) *Vilyati gokhru*, *Dakhini gokhru*, *Brihat gokhru*, *Peru neranji*, *Yanai Nerinji*, *Peruvian Nerinji* etc.

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For study of environmental needs, ecology and development *P. Murex* usually develops as a weed in coastal margins/open meadows, up to 500 metres above sea level. It is an indicator of saline soil and also occurs in sand & lime stone soils. It develops like a plant in fertile soil and grows at a temperature of 25-30°C. In western Uttar Pradesh, budding begins in June-July and flowers and fruit trees appear in September-December.

Geographic Distribution

Africa and Asia are the native of *P. Murex*. It is found in dry and coastal areas of most of Africa and Asia. In Africa, Northeast Tropical Africa (Djibouti, Somalia), East Tropical Africa (Kenya, Tanzania), West Tropical Africa (Ghana, Nigeria, Dominican Republic, etc. Colombia), West Africa (Mozambique) and West Tropical countries of the Indian Ocean (Madagascar and Comoros). This species is distributed in the Arabian Peninsula (Yemen) and the Indian subcontinent (India and Sri Lanka) (Figure 1). In India, it is found as a plant mainly in the barren lands of South India, especially the Deccan Peninsula and the Coromandal Coast, as well as in the states of Tamil Nadu, Andhra Pradesh, Haryana, Delhi, Rajasthan, Punjab, Gujarat and Madhya Pradesh. . , Uttar Pradesh etc.

Morphological Description

Morphological study of *murex* is collected from Jaipur District Department of Botany, University of Rajasthan, Jaipur indicates that it is an annual, widespread, succulent, Mucilage herbaceous plant, its height is about 60-70 cm.k Plagiarism

Root

Tap root system, 4 to 5 inches long, reddish brown in color, with a sweet aroma.

Stem

The Stem is about 1 cm in diameter, very branched, fleshy, with green glands. The branches are spread out and in the east the diameter can reach 30 X 30 to 60 X 60 cm. -It is in the west and north-south direction. The main branch may lie straight or straight. Phyllotaxis is the opposite decussate.

Leaves

The leaves are single, opposite, oval, glabrous, alternate, fleshy, pointless, stalked, irregularly shaped. The length and width of the leaves are 4.0-6.5 cm and 4.-5.0 cm, respectivel. Petiole length is 2.7-3.0 cm. The midrib of the leaf is prominent, the outer vein is slightly thicker, the palm is thick, the surface is smooth, the petiole is straight, there are glandular hairs on the back and front of the leaves. The pulse train is of the reticular type and the pulse is thick and straight.

Flowers

Flowers are on the leaf axis, with five petals, 2.5-3.0 cm long, 1.0-1.5 cm wide. Yellow, short stemmed. Calyx five, terminal Crown five-lobed, round, four strong stamens, double carpel stigma, ovary four-chambered

Fruit

Fruit 1.5 -2.0 cm long, 0.8-1.5 cm in diameter, pale. Yellow-brown, unopened hard drupe, cone glabrous, oval, spherical, four-sided, with four expanding spines at the base, 2.0-4.0 mm long; It is attached to a short curved pedicle. It has terminal corners. The fruit has 5-12 cells, each containing a seed. Seeds.

Seeds

The seeds are oblong, black and covered with Pappus. The seeds are mucilaginous, odorless and have a sweet taste. The average weight of 1000 seeds is approximately 151.69 grams.

Propagation and Cultivation

Plants reproduce from seeds, but data on seed germination, seed dormancy and survival time are not clear. No information is available about farming methods, nutritional needs and irrigation. The seeds collected from the Avika Nagar field, Jaipur a year ago without seed spraying could not be successfully milled and passed through the filter paper; however, plants are propagated successfully from stem cuttings. An experiment was conducted in October 2023 in Department of Botany, University of Rajasthan, Jaipur. Using a sharp knife, remove the stem from the plant, cut to about 3-5 inches long and 1 centimeter thick. Cut the leaves off the cuttings and plant 6 cuttings in 4 copies in pots filled with a 1:3 mixture of farmyard manure and sandy soil. The average environment for the month of October was the average daytime maximum temperature of 29.4°C (85°F), the average temperature and coolness of 20°C (68°F), and the average nighttime relative temperature. humidity is close to 40%. Planting began on the 4th day after transplanting (DAT) and all cuttings germinated after 7 days. The number of germination increases over time.

Usages as a Source of Food, Mucilage, Medicine and Biodiesel

Murex is used as a source of nutrients, mucus and medicine. Leaves of Murex are used as vegetables (Kirtikar and Basu, 1935). Parts of it are used to maintain overall health and growth and to prevent and treat many diseases in humans and animals. The stem & leaves will turn into odorless, colorless and thick mucus when mixed in cold water, which contains beneficial medicinal properties. It is cost effective natural aid that is used as an alternative to prescription drugs. It has low cost, high viscosity, slightly alkaline pH and easy redispersion (Yeole et al., 2010). Infusion of leaves and stem is also used to treat gonorrhoea and dysuria (Kirtikar and Basu, 1935). It is a medicinal herb used in Ayurveda to treat stones, spermatorrhea, amenorrhoea, menstrual cramps, inflammation, ulcers, fever and other diseases.

It is used as a tonic, aphrodisiac, appetite stimulant, tongliang, bladder stones, asthma, cough, pain, heart diseases, hemorrhoids, blood purifier, leprosy and skin treatment in Ayurveda (Chopra et al., 2015). 1956). It is important in Ayurvedic formulas such as Gokhuradiguggul, Gokhuradiawalaha, Gokhurkath and Deshnullarishta (Sivarajan and Balchandra 1994). It is used for body pain, lower back pain, stomach pain, menstrual control, etc. as per Unani system of medicine. (Shukla and Khanuja 2004). Along with the Ayurvedic and Unani systems of medicine, many parts of the plant are used ethnomedicinally by indigenous communities worldwide for the treatment and prevention of various diseases and disorders. P. murex is also used in the biosynthesis of nanoparticles. Biosynthesis of gold nanoparticles using cold and hot extraction of Murex found that both of the extracts produces nano particles in between the range of 180-200 nm. Biosynthesized AgNPs have been shown to have antibacterial activity against *Escherichia coli*, *Escherichia coli*, *K. pneumoniae*, *Bacillus subtilis*, *Staphylococcus aureus* etc. Biosynthesis of ceramic SrO/CeO₂ mixed oxide nanoparticles from *Bacillus subtilis* leaves. Murex exhibits maximum antibacterial activity against *Staphylococcus aureus* (G+) and *Escherichia coli* (G-) bacteria and has high antioxidant activity (Peter et al., 2014; Anandalakshmi et al., 2015; Pandiyan et al. People, 2015). 2019). It may be used for biodiesel production due to the high lipid content in the region (Shivprakash et al., 2019).

Conclusion

Based on the various abilities of Murex, it has been decided that this type of insect is obsolete and is used only for health management purposes by doctors of Unani and Ayurveda, medicines. The plant has commercial value and the hard, spiny fruits are sold as medicinal herbs in Ayurvedic mandis and used in medicinal preparations by Ayurvedic drug manufacturers. Due to the quality of its leaves as green vegetables and the high mucilage and lipid content (for production), the plant will be in high demand in the future. Since plants are collected from natural sources and their seeds are sold in the local market species need to be properly preserved and used at home. In order to use all resources of Murex for human health, research should be carried out to develop agricultural strategies suitable for commercial cultivation.

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