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GUGGUL : AN AYURVEDIC MARVEL

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ABSTRACT

Guggul is the gum resin obtained from a variety of plants native to India, Bangladesh, and Pakistan. Some of the major species include Commiphora wightii, Commiphora gileadensis, Commiphora mukul. All species are a part of the Burseraceae family, also known as the incense family. Guggul has been used for centuries in Ayurvedic medicine, a holistic, plant-derived medical system, to treat various health conditions, such as obesity, arthritis, and inflammation. Guggul contains a mixture of plant compounds, including steroids, essential oils, lignans, flavonoids, carbohydrates, and amino acids — all of which may be responsible for its various health effects.

INTRODUCTION

Guggul or Indian Myrrh is the yellowish gum-resin produced by the stem of the guggul tree (Commiphora spp.) It belongs to the family *Burseraceae* . The plant is commonly found in dry areas of India, Bangladesh, and Pakistan. In India, it occurs in Rajasthan, Gujarat, Assam, Madhya Pradesh, and Karnataka.

Morphologically the plant is a small, bushy tree with thorny branches and produces a yellowish gum resin (guggulu) in small ducts located throughout its bark.

The plant has a wide adaptability.It prefers arid and semi-arid climates and can grow well in poor soil. It is tolerant to sandy and silt loam soils, which are poor in organic matter and rich in other matters. Guggul is also considered as drought and salinity resistant plant.

Collection of Gum Resin

The gum resin resides in the ducts located in the soft bark of the tree near the cambial layer. Resin is obtained through a process called tapping.Plant attaining 7.5 cm diameter is suitable for tapping. Usually 1.5 cm deep circular incisions are made on the main stem, not beyond the thickness of the bark. Guggul resin oozes out from these incisions as a pale yellow, aromatic fluid that quickly solidifies to form a golden brown or reddish brown agglomerate of tears or stalactic pieces. It is collected manually or with spear. The gum-resin is scraped off the wound with the knife. The collection is done at an interval of 10-15 days.

Period of harvesting/collection

The trees are tapped for resin from November through January, and collection continues until May or June through a nick on the bark of the tree.

Yield

A healthy tree yields 250-500 grams of gum-resin in one season(The Ayurvedic Pharmacopoeia of India,2007) and guggul plants typically begin yielding resin after five years.

Processing

Guggul is processed by wrapping the resin in a porous natural fiber cloth and boiling it in a decoction of triphala (amalaki, haritaki, and bibhitaki) to purify the resins, enhance absorption, and reduce toxicity. It is then cooked down to a thick paste, spread out on a pan or holder, dried, and broken into powder or chunks. (Tierra, Michael 1988). The collected gum is graded according to its purity.

Properties

Extracts of the gum-resin include compounds known for their hypolipidemic properties. The dried gum-resin has a bitter aromatic taste and balsamic odour. It is soluble in most organic solvents. It burns readily and diffuses an pleasant odour.

Guggul has been listed on the International Union for the Conservation of Nature Red List of threatened species due to the over-harvesting of its habitat(. Singh, Dhyani, and Kaur, 2015). In addition to over-harvesting, it also faces threats such as tree droughts, over-grazing, overexploitation due to unscientific resin tapping methods, termites, and habitat destruction. The U.S. Food and Drug Administration has approved guggul for use as a dietary supplement in 1994.(

Shishodia,et al 2008). Its subtle properties enable it to enter deeply into the tissues (sukshma) and it is an excellent destroyer of ama, or toxins, (amanasaka),(Pole, Sebastian 2006).

GENERAL USES OF GUGGUL IN AYURVEDIC MEDICINE

External Use

A paste made from guggul can be locally applied in rheumatoid arthritis, cervical lymphadenitis, skin diseases, and piles. Guggul can also be used to reduce foul odors, as a deodorant and disinfectant, and as a gargle to treat periodontitis (gum infection) as well as ulcerated conditions of the mouth and throat and other dental disorders.(Frawley, David 1986, Khalsa, Tierra, 2008).

The essential oil of guggul is anti-bacterial and fumigation of guggul gum decreases the concentration of common indoor molds, (Geoffrey, Stewart G., Robinson 2017) such as Aspergillus, Penicillium, Alternaria, Curvularia, and Cladosporium (Kurt et al 2014) except for Curvularia, which is found in soil. Fumigating, guggul, with neem leaves, sweet flag, rape seeds and common barley mixed with ghee helps to cure irregular fever.(Punarvasu 1949).

Internal medication

Guggul can be used internally on the nervous, digestive, circulatory, respiratory, urinary, and reproductive systems, as well as for dermatological diseases. Internally, guggul's biomedical actions are anti-inflammatory, antiplatelet, anticholesterolaemic, astringent, antiseptic, and immune stimulant.

Cancer

Guggul is used to treat all growths, accumulations, and cancers. Some studies have also cited the anti-tumor efficacy of guggul in breast, esophagus, head, neck, pancreatic and prostate cancers (.Kunnumakkara2018).

Fascioliasis

Fascioliasis is a parasitic worm infection caused by the common liver fluke *Fasciola hepatica* and *Fasciola gigantica*. The formulation of myrhh, the gum resisn of *Commiphora molmol* is reported to be safe, well tolerated, and effective for the management of this disease.

Heart diseases

Guggulsterone (plant steroid) found in guggul shows heart-protective property. It was found to lower cholesterol, phospholipid, and glycogen levels and protect the heart against damage(Sarup, Bala, Kamboj 2015).

Control Obesity Guggul is useful in digestion and it also reduces the constant urge to eat. Guggul. enhances your metabolism.

Cure for hypothyroidism

Guggul separates the intake and can help in working on the take-up of iodine in the body and consequently work on the capacity of the thyroid organ to keep away from hypothyroidism.

For treating osteoarthritis

Guggul is extremely beneficial in treating osteoarthritis which comes with extreme torment and enlarging in the joints.

Side effects of Guggul

Excessive use of guggul is also harmful and can lead to an irregular menstrual cycle, loose bowels, hiccups, and nausea. Guggul is hazardous for pregnant ladies as it can increase the menstrual flow and can also stimulate the uterus this can be incredibly harmful to the mother and the child and can also lead to early labour. So one should be extremely careful when using guggul.

CONCLUSION

This plant contains a number of bioactive constituents including terpenoids, steroids, flavonoids, guggultetrols, lignans, sugars, and amino acids. Guggul is an incredibly unique and well-known ayurvedic marvel if consumed in the right amount. This review clearly authenticates the Sanskrit definition of the term "guggul" which means one that protects against diseases which is superbly reflected and proved by the diverse medicinal uses of this Ayurvedic drug.

As, this plant is listed in IUCN list , rationale usage of the plant is the need of the hour so that we do not end up depleting this wonder drug of high therapeutic importance. Keeping this in view, stem, bark, and leaf of this plant should receive more attention so that the complete depletion on account of plant death due to tapping can be checked. This plant still possesses an unexplored potential and expansion of research materials would provide more opportunities for the discovery of novel bioactive principles from this plant.

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