



UNDERSTANDING THE THERAPEUTIC AND PHARMACOLOGICAL EFFECTS OF COMMI-PHORA MUKUL (GUGGULU): A CRITICAL REVIEW

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ABSTRACT

Guggulu has been a key element in the ancient Indian *Ayurvedic* system of medication. It has been used extensively by *Ayurvedic Acharya* for thousands of years to treat a large variety of disorders, besides its use in the pharmaceutical and perfume industries. *Guggulu* is a gum or resin extracted from the plant *Commiphora mukul* or *Guggulu* tree. *Guggulu* is a shrub or small tree belonging to *Burseraceae* family. a small perennial tree or shrub up to 1.2-1.8 m high, occurring in rocky tracts of Rajasthan, Barar, Khandesh, Maisoor, Kathiyabad, Belari. Exudate is collected during the winter season by making the incisions in the bark or summer, falling from the bark itself¹. *Guggulu* has 5 types that are- *Mahishaksha*, *Mahaneel*, *Kumuda*, *Padma*, *Hiranya*. *Guggulu* is *Vishad* (non-unctuous), *Tikta* (bitter), *Ushna Virya* (hot in potency), increases *Pitta*, *Sara* (laxative), *Kashaya* (astringent), *Katu* (pungent) in taste, *Katu* in *Vipak* (pungent after digestion), *Ruksha* (causes dryness) and *Laghu* (light). Chemical compositions of *Guggulu* are volatile oil, resins and gum, Guggul sterole, Z-guggul sterone, E-guggul sterol-I, II and III, Sesamine, Cholesterol, Mukolol and other steroids. It has *Shothhar*, *Vedanasthapan*, *Vranshothan*, *Vranaropan* and *Jantughna* effects. It uses as an external application in *Aamvata*, *Katishul* and *Sandhishul*.

Keywords: Aamvata, Commiphora mukul, Guggulu, Kushtharoga, Sopha, Medoroga

INTRODUCTION

Ayurveda is one of the great gifts of the *Acharya* of ancient India to mankind. It is one of the oldest scientific traditional medical systems in India and is considered as most holy, excellent system honoured by those proficient in the *Veda*. Knowledge about the healing property of plants and formulations used in *Ayurvedic* therapeutics mentioned in classics are a result of conversant clinical observations made over centuries. Details about their properties and therapeutic applications are available in ancient scriptures like *Veda*, *Samhita*, and *Purana*. Compilations of later periods that are called *Nighantus* also contain an enormous amount of information. The current worldwide trend towards utilization of plant-derived natural remedies has, therefore, created a dire need for accurate and up-to-date information on the properties and uses, efficacy, safety, and quality of medicinal plant products. *Guggulu* preparations are considered an ancient Indian *Ayurveda* system of medicine. It has been used widely by *Ayurveda* physicians for long years to treat a different variety of disorders. It is a popular herb classified as *Tridoshghna* in Indian *Ayurvedic* medicine that is used to treat several disorders². *Guggulu* is exudate obtained in the form of oleo gum resin from the stem of the plant *Commiphora Mukul* belongs to the *Burseraceae* family. It is known to have analgesic,

anti-inflammatory activity, etc. So, it's used in various *Ayurveda* formulations.

Due to its healing properties, it has been used for thousands of years in India to treat a wide range of health conditions. History revealed that *Guggulu* has a prime place in *Atharva Veda*. A detailed account of *Guggul* as a drug is given in the *Vrahat Samhita* like *Charaka*, *Sushruta*, *Vagbhata*, and various *Nighantu* written in India. *Guggulu* always formulated with other ingredients in formulation-based concept in *Ayurveda* with or without specific *Anupana*. Since reviewing *Guggulu* and its *Ayurvedic* classical preparations along with *Anupana* mentioned in classics were not available on one platform. In this review article tremendous effort was made to compile the details of *Guggulu* and its *Ayurvedic* formulations in the *Ayurvedic* System of Medicines along with its therapeutic uses.

Materials

A comprehensive review has been made through *Ayurvedic Samhita*, *Rasagrantha*, *Sangraha Grantha*, and *Nighantu*. Views of their critics, as well as contemporaries, were also taken into consideration for the compilation of *Guggulu*. The journals, webpage and modern books were also screened during the review attempt on *Guggulu* and its therapeutics importance.

SYNONYMS

Sanskrit	<i>Purah, Devdhoop, Jataayu, Mahishaksha, Kaushika, Palankash, Kumbholookhalak</i> ³
Assamese	<i>Guggul</i>
Bengali	<i>Guggula</i>
English	<i>Gum-gugul, Indian Bdellium</i>
Gujrati	<i>Gugal, Guggal, Gugar</i>
Hindi	<i>Guggul</i>
Kannada	<i>Kanthagana, Guggala, Mahishaksha Guggulu, Guggulugida, Guggulu, Guggal</i>
Kashmiri	<i>Guggul Dhoop, Kanth Gan</i>
Malayalam	<i>Gulgulu, Guggulu</i>
Marathi	<i>Guggul, Mahishaksh</i>
Oriya	<i>Guggulu</i>
<i>Guggal</i>	<i>Guggal</i>
Tamil	<i>Mahisaksi Guggalu</i>
Telugu	<i>Makishakshi Guggulu, Guggipannu</i>
Urdu	<i>Muqil (Shihappu)</i>

Classification ⁴

Kingdom	Plantae
Subkingdom	Tracheobionta
Division	Magnoliophyta
Class	Spermatopsida
Sub Class	Maqnoliidae
Order	Sapindales
Family	Burseraceae
Genus	Commiphora
Species	Mukul

Type of Guggulu

There are 5 types of Guggulu include –

S. No.	Type	Description	Uses
1.	<i>Mahishaksha</i>	<i>Mahishaksha</i> has the colour of honeybee or <i>Anjana</i> (antimony sulphide).	Useful in elephant's disease
2.	<i>Mahaneel</i>	<i>Mahanila</i> is similar to its name and looks like a Sapphire, a precious stone.	Useful in elephant's disease
3.	<i>Kumuda</i>	<i>Kumuda</i> resembles <i>Kumuda</i> flower (white) in colour.	Useful in horse's disease
4.	<i>Padma</i>	<i>Padma</i> resembles <i>Manikya</i> (ruby red).	Useful in horse's disease
5.	<i>Hiranya</i>	<i>Hiranya</i> is like gold in colour.	Useful in human being's disease

The other two varieties of the *Guggulu* have been mentioned in the textbooks of Ayurveda:

- 1). *Nava Guggulu*
- 2). *Purana Guggulu*

The freshly collected *Guggulu* is a tissue builder and aphrodisiac and if stored for more than one year, it is depletory of tissues. The characters of fresh *Guggulu* are oily, yellowish look like a ripen *Jambu* fruit, fragrant and gummy. Purana or old decayed *Guggulu* is dry, emitting bad smell, devoid of natural colour and potency⁵.

DESCRIPTION

a) Macroscopic

The *Guggulu* plant is bushy whose thick spreading branches have thorny tips. The Height of the *Guggulu* plant is about 4-8 feet. The wood is white and soft. Leaves have 1 to 3 leaflets, conical above, tooth-like in the front, smooth, shiny, and usually at the ends of small thick branches. the bark is yellow with a green touch. Flowers are small and brownish-red in colour with 4-5 petals. Fruits are small, fleshy, elongated, and red when ripe.

Drug occurs in vermicular or stalactitical pieces of pale yellow or brown coloured mass, makes milky emulsion in hot water and readily burns, when fresh viscid and golden coloured, odour, aromatic, taste, bitter and astringent.⁶

b) Microscopic

IDENTITY, PURITY AND STRENGTH

- Foreign matter Not more than 4 percent.
- Total Ash Not more than 5 percent.
- Acid-insoluble ash Not more than 1 per cent.
- Alcohol-soluble extractive is Not less than 27 percent.
- Water-soluble extractive is Not less than 53 percent.
- Volatile oil Not less than 1 percent⁷

Chemical composition- Volatile oil, resins and gum. Guggul sterole, Z-guggul sterone, E-guggul sterol-I, II and III, sesamine, cholesterol, mukolol and other steroids.

Habitat- Desert areas of Rajasthan, Gujarat and also cultivated in Mysore, Deccan and other parts of India.

PROPERTIES AND ACTION

Rasa Panchak	Description
Rasa	Tikta, Katu
Guna	Laghu, Ruksha, Tikshna, Vishad, Sukshma, Sara, Sugandhi (Purana Guggulu), Snigdha, Picchala (Naveen Guggulu)
Virya	Ushna
Vipaka	Katu
Karma	Balya, Rasayana, Varnya, Vjtabal/sajit, Bhagnasandhanaka Medohara
Prabhav	Tridoshar

According to Bhavprakash Nighantu, Ayurvedic properties of Guggulu are: - Guggulu is Vishada (non-unctuous), Tikta (bitter), Ushna Virya (hot in potency), increases Pitta, Sara (laxative), Kashaya (astringent), Katu (pungent) in taste, Katu in Vipaka (pungent after digestion), Ruksha (causes dryness) and Laghu (light). Guggulu is Bhagna-sandhankrid (Unifies fracture), Vrishya (aphrodisiac), Sukshma (enters into minute pores), Swarya (improves voice), Rasayana (rejuvenative), Dipana (appetizer), Balya, mitigates Kapha and Vata, cures Apachi, Medoroga, Meha, Ashmari, diseases of Vata, Pidika, Granthi, Shoph, Arsha, Gandamala, Krimiroga. It mitigates Vata by its Madhuraya (sweet taste), Pitta by its Kashayatva (astringent taste) and Kapha by its Tiktatvata (bitter taste), so Guggulu mitigates all the Doshas.

IMPORTANT FORMULATIONS - Vataari Guggulu, Yogaraja Guggulu, Simhanada Guggulu, Kaisora Guggulu, Mahayogaraja Guggulu, Chandraprabha Vati⁸, Navak Guggulu, Medohar Guggulu

THERAPEUTIC USES – Aamvata, Kushtha, Prameha, Vatavyadhi, Granthi, Sopha, Gandamala, Medoroga⁹ **Doshakarma-** Guggulu said to be Vatashamak due to its Ushna property. It is the main drug among Vatashamak drugs. It has Medohara effect due to Ruksha and Vishad Guna so that it is very beneficial in Medavrat Vata. Guggulu has Kaphashamak effect due to Tikshna and Ushna Guna. **Systemic function- External use**

It has Shothahara, Vedanasthapana, Vranshothaghna, Vranaropana and Jantughna effects. It uses as an external application in Aamvata, Katishula and Sandhishula.

Internal use-

- Nervous system disorders** - Because of its Vatashamak property, it has the Vedanasthapak effect and provides strength to nerves. Kaishora Guggulu is very beneficial in Angaghat, Ardita, Urustambha, and Vatanadi Shulah. In Urustambha It is given with Gomutra, and in Gridhrasi it is given with Rasna and Ghrita. Guggulu has a good effect on Aamvata (Rheumatoid Arthritis) Arthritis is mainly caused due to inflammation of joints, the tissues surrounding the joints, and other connective tissues. Osteoarthritis is the most common form of arthritis which affects a wide range of people across all places. As Guggul has been reported to exhibit high affectivity against arthritis pre-clinically; hence, its effect was evaluated in the clinical setting as well.
- Digestive system disorders** - Due to its Katu Tikta and Sukshma property, it has a Deepan effect. Due to Snigdha, Sara property it has Anuloman and Pittasarak effects. Due to Tikta and Ushna Guna, it has Yakrituttejak, Arshoghna, and Kramighna effects. Due to Sugandhi Guna Guggulu removing Koshthagat bad odour. Guggulu improves appetite and digestion, because of this property it is used in gastric dysfunction. It is given as an intestinal antiseptic in Atisaara, Pravahika, Antrapradah, and Kshayaj Atisaara with Sugandhi Dravya, Indrayava, Elua, and jaggery. It has a greater effect on women than on men.
- Cardiovascular system disorders** - it has a good effect on the heart, increase the number of RBC

and WBC, purifies the blood. It has *Sothhar* and *Gandamalanashak* effects also.

4. **Respiratory system disorders** - it reduces *Kapha Dosh*, so it is used in chronic *Kapha Roga*, *Swash Roga*, and the condition of *Kshaya*. In chronic *Kapha Roga*, it is given with *Chhoti Peepal* (*Piper longum*), *Adusa* (*Justicia adhatoda*) honey, and ghee. In *Rajayakshma* it uses as reduces the amount of *Kapha* and also kills the bacteria. Diseases in which *Kapha* is excessive and sticky, it is used widely. It is beneficial in many conditions like *Swaryantrasotha*, *Swashni-Sotha*, *Jalodar*, *Kanthmala*. *Guggulu* has given along with *Parad*, *Soma*, and *Vaividang* in *Kanthamala*.
5. **Urinary system disorders-** *Guggulu* crushes stone and remove turbidity present in the urine, because of this property it is used in urinary system disorders like *Ashmari*, *Mutrakrichchha*, *Pooymeha*. *Guggulu* improves appetite and digestion, because of this property it is used in gastric dysfunction.
6. **Genital organ disorders** – *Guggulu* is widely used in *Shukra-Daurbalya* (oligospermia), *Klaibya* (infertility). *Guggulu* has a good effect on the uterus *Kashtaartava* (dysmenorrhoea), and other *Yoni-vyapada* (genital organ disorders). In young females who have developed amenorrhoea, it is used along with *Ghririkumari* and *Kasisa* in tablet form.
7. **Skin disorders** *Guggulu* is useful in all types of *Charma Roga*. It reduces itching and increases the complexion of the skin, so it is used in pigmentary disorders.

Guna and Prayoga *Guggulu* has *Rasayan*, *Tridoshaghna*, *Vrishya*, *Valya*, *Snehan*, *Sansrasan*, *Vatanulomak*, *Am-ashyottejak*, *Deepan*, *Vatahara* effects, strengthen and stimulate the nervous system, cough expectorant, stimulate mucosal layer, have constricting and antiseptic effects.

Contraindications – Food items that contain *Amla Rasa*, *Tikshna Guna*, *Ajeernakarak Dravya*, sexual intercourse, hard work, sunlight, alcohol consumption, and anger should be avoided while consumed *Guggulu*.

Aamyik Prayog¹⁰

- *Vata-Kapha nashak* and *Tridoshanashak*
- *Vranya*, *Swarya Sansrasan*, *Agnideepan*
- *Rasayan*, *Kleda*, *Meda*, *Shothhara*
- *Pidika*, *Granthi*, *Apachi*, *Vrana*, *Gandamala Nashak*
- *Krami* and *Prameha Nashak*

Examination of Guggulu - It should be a shiny, sticky, pleasant odour, yellowish (fresh), blackish (old), bitter in taste, and easily fragile. It should be Green and reddish from inside on breaking. While rub in hot water glossy white colour mixture is formed. It doesn't burn well when it is lit. Business people sell burnt wood by making balls by applying many types of sticky gum, so it should be bought after doing a good test. Always use fresh *Guggulu*, because keeping it for long spoils its properties.¹¹

Purification- Take *Triphala* and *Guduchi* equal to *Guggulu* and grind them coarsely and prepare decoction in *Ashtaguna* water. After filtering the decoction with cloth, tie *Guggulu* in a cloth and hang above the decoction, then sweat it on low flame. Repeatedly putting that decoction on the bundle with a ladle, when all the *Guggulu* filters come in handy, then throw the dirt in the cloth and take out the *Kwath* from top to top. Set aside the frozen condensed mang at the bottom. Cook the *Guggulu* mixed *Kwath* on low flame. When it starts to thicken, put some ghee in it so that it does not burn. After that, grind it very well and keep it on top of ghee, although it is customary to do purification by this method, however, *Guggulu* may have become somewhat humbled by this method because modern *Ayurvedic Acharyas* have the opinion that the properties of *Guggulu* depend especially on the aromatic elements in it. That's why only after boning the *Guggulu* very well, adding ghee to it and then treating it with a lot of cracking can be more appropriate. Some people also do milk or *Dashmool* work in place of *Triphala Kadha*.¹²

Parts Used – Gum- resin¹³

DOSE – 2- 4 gm of the drug¹⁴

CONCLUSION

In this review article, it is concluded that *Guggulu* is one of the oldest and most famous drugs in *Ayurvedic* medicine. *Guggulu* is a multi-purpose drug and because of its incredible properties, it is very beneficial in so many diseases. *Guggulu* has several uses which are supported by various researches done by researchers throughout the world. These findings could open a new window on the use of this plant in *Ayurveda*. Due to its *Ushna Veerya*, heat is felt in the stomach after its consumption. Its absorption is very fast. Its properties probably depend on the aroma content in it. It is excreted from the skin, mucosal membrane, and kidneys, and at the time of excretion, it stimulates those organs and also acts as a bactericidal. It can be used for many days without any side effects. It is used in chronic *Kapha Roga*, *Vataroga*, numbness, *Gradhasi*, *Ardita*, *Agnimandhya*, *Apachan*, *Kanthamala*, *Granthi*, *Vidradi*, *Kushtha*, *Firanga* (syphilis) *Sujaak* (Gonorrhoea), *Sotha* of different organs, *Shopha*, *Udara Roga*, *Charma Roga*, *Vrana*, *Bhagandar*, *Krami Roga*, *Pandu*, *Arsh*, *Prameha*, *Garbhashaya Vikara* and *Medovraddhi* with those intended drugs acting on those organs.

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