



A Review on *Garcinia talbotti*: Multipotential Medicinal Plant

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ABSTRACT

The Sanskrit term Ayurveda has translated knowledge of life, Ayurveda is based on a belief that health and wellness depend on a delicate balance of mind, body, and spirit. *Garcinia talbotti* belongs to family Clusiaceae and commonly known as limboti, Phansada, tavar, undal, chivar which is found at low altitudes throughout India. Plants have been used as most important source for treating various disorders of human beings since ancient times. Number of plants are mentioned in different traditional system of medicine, among them *Garcinia talbotti* is one of important medicinal plant consisting different parts such as, fruits, flowers, leaves, stem bark and roots have been reported for possessing various bioactive compounds such as alkaloids, steroids, terpenoids, flavonoids, tannins, reducing sugars, carbohydrates, glycosides, saponins, phenols, protein and amino acids. The present review highlights the pharmacological and pharmacognostic study of *Garcinia talbotti* plant used in traditional Ayurvedic medicine.

Keywords: Ayurveda, *Garcinia talbotti*, Bioactive Phytochemicals, Pharmacological study.

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INTRODUCTION

In ancient times near to 3000 years ago in India when there are no synthetic medicines was developed then people used Ayurvedic plants to get cures for different diseases. Ayurveda, the term in Sanskrit, originates from two words ayu which means life, and veda which means science; combining these two terms, the word Ayurveda was come, which means "The Science of Life". Ayurveda is not only intended for "natural" but also it's a holistic method for physical and mental health^{1,2}. The origins of these medicines lie in the foothills of the Himalayas and different parts of India where the sages such as Acharya Charak, Acharya Sushrut, implemented the applications of these herbs in their day to day lives. As our body is natural therefore natural remedies have no side effects on our body³. Phytochemical studies of the different parts of the plants have shown the presence of many valuable compounds, such as saponin, flavonoids, tannins, polyphenols, triterpenes, sterols, and alkaloids that show a wide role on body^{4,5}.

The whole plant or its different parts may be valued for its therapeutic, medicinal, aromatic or savoury qualities. Medicinal plants are cheaper, more accessible to the most of the population in the world. Thus, there is need to encourage the use of medicinal plants as potential sources

of new drugs. There has been as highly increased interest for herbal remedies in several parts of the world. India is one of the leading countries in Asia in terms of the wealth of traditional knowledge systems related to the use of plant species. India is also known to harbor a rich diversity of higher plant species (about 17000 species) of which 7500 are known as medicinal plants⁶. One of the medicinally important plants is *Garcinia talbotii* upon which the presence of phytochemicals and scientific importance is being reviewed.

Scientific Classification or Botanical Descriptions of *Garcinia talbotti*⁷

Table 1: Scientific classification or botanical descriptions of *Garcinia Talbotti*

Botanical Name	<i>Garcinia talbotii</i> Raizada ex Santapau.
Synonym	<i>Garcinia malabarica</i> Talbot; <i>Garcinia ovalifolia</i> J.Hk.var. <i>macrantha</i> J.Hk
Family	Clusiaceae or Guttiferae.
Kingdom	Plantae
Phylum	Tracheophyta
Class	Equisetopsida C. Agardh
Order	Malpighiales Juss.ex Bercht & J. Presl.
Species	<i>Garcinia talbotii</i> Raizada ex Santapau
Vernacular Names	
English-	Talbot Garcinia
Marathi-	Limboti, Phansada, Chivar, Tavar.



DISTRIBUTION

In India, the genus *Garcinia* is represented by 43 species and 5 varieties, of which 37 Species and 4 varieties occur in wild. *Garcinia Talbotii* is specially cultivated in Maharashtra, Kerala, Goa, Karnataka, and Tamilnadu)⁸. *Garcinia talbotii* was considered as a species distributed in Western Ghats of India and was first reported from

Gairsoppah Ghats, North Kanara, Karanataka .This species is closely allied to *Garcinia spicata* Wight and Arn. Which is native to Sri Lanka (1875). In most of the Indian Floras, *G. talbotii* has been misidentified as *G. spicata*, which is not naturally occurring in India. Thorough examination of literature, type specimens and live specimens from the Western Ghats⁹.



Figure 1: Mature Plant, Seeds in fruit

Distribution of *Garcinia* species in the Western Ghats¹⁰

Table 2: *Garcinia* species in the Western Ghats: distribution, Locality

Sr.No.	<i>Garcinia</i> species	Distribution (altitude, meter)	Locality
1	<i>G. talbotii</i>	Endemic to the Western Ghats (100 -500 m)	Kerala: Uduma, Cheemani (Kasaragode); Vellarimala (Kozhikode); Vazhachal (Thrissur); Pampa, Pandarakayam (Pathanamthitta); Pandimotta, Rosemala (Thiruvananthapuram)
2	<i>G. imberti</i> Bourd.	Endemic to South Western Ghats (900-1200 m)	Kerala: Agasthyamala Biosphere Reserve (Thiruvananthapuram), Shankily, Shendaruni (Kollam)
3	<i>G.indica</i> (Thouars) Choisy	Endemic to India. the Western Ghats, North East India (50- 550 m)	Kerala: Badi Baduka, Thaliparamba; Maharashtra: Thungar Hill, North Kanara; Karnataka: Tinai Ghat. Assam: Karbi Anglong Dist.
4	<i>G.morella</i> (Gaertn.) Desr.	Indo-Malay, Sri Lanka (500- 1100 m)	Kerala: Chenathnair, Kuruva Island, Kambamala (Wayanad); Thamarassery, Vellarimala (Kozhikode); Silent Valley
5	<i>G.pushpangadaniana</i> T. Sabu, N. Mohanan, Krishnaraj and Shareef	Endemic to the Western Ghats (850-1400 m)	Kerala: Kadalar, Pampadumchola, Munnar (Idukki); Wallakad of Silent Valley (Palakkad); Tamil Nadu: Anamalai Hills
6	<i>G. rubro-echinata</i> Kosterm.	Endemic to South Western Ghats (800-1200 m)	Kerala: Ponmudi, Chemmunji Hills (Thiruvananthapuram). Tamil Nadu: Kalakkad Mundanthurai Tiger Reserve (Thirunelveli)
7	<i>G. travancorica</i> Bedd.	Endemic to South Western Ghats (950-1500 m)	Kerala: Athirumala, Chemmunji (Thiruvananthapuram). Tamil Nadu: Kalakkad Mundanthuarai Tiger Reserae (Thirunelveli)
8	<i>G. gummi-gutta</i>	India, Sri Lanka (50- 900 m)	Throughout the evergreen-semi evergreen forests of the Western Ghats

Ecology

The *Garcinia talbotii* is native and common in dry plains. It prefers a monsoon climate with a distinct dry season. The tree grows up to an elevation of 100-500 m in the Western

Ghats. It is apparently drought tolerant and best adapted to light soils.

Taxonomy

The genus *Garcinia* is considered as a taxonomically difficult one due to the complexity in floral characteristics. While

majority of *Garcinia* species are dioecious, a few species or races are reported as hermaphrodite¹¹. Several identification keys have been reported for *Garcinia* species across the globe based on morphological features of flower, fruit and leaf¹².

Botanical Description

Garcinia talbotii Evergreen tree up to 20 m tall; exudate white, turning brownish after exposure. Leaves: Elliptic-ovate, oblong or ovate-oblong, 8-18 x 2-10 cm. Male flowers: Pentamerous, fascicled, axillary or terminal, creamy-white, 2-2.5 cm long, pedicel, ca. 1 cm long; sepal orbicular, margin membranous, rarely ciliate; petals or bicular obovate, rarely sub-orbicular, creamy-white or greenish-yellow, margin membranous; stamens in to 5 phalanges; rudimentary pistil absent. Female flowers: Pentamerous, fascicled, axillary, creamy-white, 1.8-2.7 cm long, pedicel, ca.1 cm long; staminodes in 5 delicate phalanges; ovary 3-locular, very rarely 4, globose, stigma peltate, 3 lobed. Fruits: Globose, greenish-yellow on ripening, 4-6 x 3.8-5 cm, fleshy, rind surface shows an yellow resins. Seeds: 1-3, oblong, ca. 3cm long with yellow pulpy aril¹³.

Field identification characters

- i. Exudation milky, turning brownish after exposure
- ii. Leaves usually ovate.
- iii. Fruit greenish yellow, ripe fruit pulp sweet-scented, stigmatic lobe 3.

Nutritional Information

The importance of natural products is increasing day by day as the safety of synthetic alternatives has generated lots of controversial questions. *Garcinia* species are an important group of plants, being used for different purposes, especially as fruit crops, source of edible

Oils and fats, and nutraceuticals in different parts of the world. *Garcinia* butter is obtained from the seeds and used mainly as an edible fat¹⁴.

Medicinal Properties

All genus parts of *Garcinia* prescribed in indigenous system of medicine for the treatment of various ailments. It helps weight loss, reduce appetite, lower cholesterol, improve rheumatism, and even relieve intestinal problems.

Phytochemicals

The preliminary phytochemical analysis of *Garcinia talbotii* plant parts showed the presence of alkaloids, phenols, terpenoids, tannins, fats steroids, saponins, glycosides, gum, mucilage and fixed oils¹⁵. Roots contains two biflavones namely talbotaflavone and morelloflavone¹⁶.

Pharmacological Activity

The genus *Garcinia* they have various applications in pharmaceutical, and industrial fields. *Garcinia* extract has been shown to have therapeutic effects including anti-

ageing Hepatoprotective activity, Antifungal, Antimicrobial and Cytotoxic Effects, Anti-neoplastic activity, Antibacterial activity, Neuroprotective, Anti- obesity activity, hypoglycemic activity¹⁷⁻²¹.

Pharmacological reported activity on *Garcinia Talbotii*:

Antioxidant activity

Garcinia Talbotii hexane extract showed high antioxidant activity which was comparable to standard antioxidants trolox and galic acid in DPPH, ABTS free radical scavenging and reducing power assay¹⁶.

CONCLUSION

It is quite evident from this review that *Garcinia talbotii* is an important medicinal plant. It contains a number of phytoconstituents, which are the key factors in the medicinal value of this plant. Almost all parts of this plant such as leaf, fruit, seed, bark and root are used to cure a variety of diseases. The present review summarizes some important pharmacological studies on *Garcinia talbotii* and phytochemical investigations and isolated principles from them. Thorough screening of literature available on *Garcinia talbotii* depicted the fact that it is a popular remedy among the various ethnic groups, Vaidyas, Hakims and Ayurvedic practitioners for cure of variety of ailments. A systemic research and development work should be undertaken for the development of products for their better economic and therapeutic utilization.

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