

PHARMACOLOGICAL ACTIVITIES OF VIBHITAK (TERMINALIA BELLERICA): A REVIEWDr. Vikram Sidh^{1*} and Dr. Omprakash Sarswat²¹PG Scholar Deptt of Dravyaguna Sriganganagar College of Ayurvedic Science and Hospital, Tanta University, Sriganganagar – 335001, India.²Professor Deptt of Dravyaguna, Sriganganagar College of Ayurvedic Science and Hospital, Tanta University, Sriganganagar – 335001, India.***Corresponding Author: Dr. Vikram Sidh**

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ABSTRACT

Terminalia bellerica Roxb (combretaceae) is found widely throughout the Indian subcontinent, Sri Lanka, South-East Asia, Bangladesh as a medicinal plant. Plant and plant parts are used in the traditional system of medicines like Ayurveda, Siddha, Unani & Chinese medicine. The plant is constituted of Glucoside, Tannins, Gallic acid, Ethyl Gallate, Chebulinic acid which serves as an antioxidant, antimicrobial, antidiarrheal, anticancer, antihypertensive, hepatoprotective & antipyretic agent. This review sites the information on pharmacological activities of *Terminalia bellerica* which may serve as a source for further research studies.

KEYWORDS: *Terminalia bellerica*, Phytoconstituents, Traditional use.**INTRODUCTION**

Plants have been used as medicines from the ancient times. Throughout the world medicinal plants are widely and successfully used. A plant with active medicinal constituents are used to treat diseases in the traditional systems like Ayurveda, Siddha and Unani. In Asia, the use of medicinal plants are well established and are well documented. The plants those are recognized internationally mostly comes from this region. Plants, plant parts and plant products those are used for the preparation of medicines serves wee to uplift the economic status of the country and they are the natural wealth of a country. Medicinal plants has got significant role in saving the lives of rural area people. In India, 45,000 plant species have been identified and out of which 15-20 thousands plants are found to have good medicinal value.

Synonyms

Assam - Bhomora, Bhomra, Bhaira;
English – Beleric Myrobalan;
Gujarati - Bahedam, Baheda;
Hindi - Bahera;
Kannada - Shanti, Shantikayi, Tare, Tarekayi;
Malayalam - Tanni, Tannikai;
Marwari - Baheda;
Oriya - Baheda, Bhara;
Sanskrit - Vibhita, Aksa, Aksaka, Bibhitaki;
Tamil - Thanakkai, Tanri, tanrikkai, Tani;
Telugu - Tannikkaya, Vibhitakami, Tani

Plant description

Terminalia bellerica is a large deciduous tree to 50 m tall and a diameter of 3 m with a rounded crown. The frequently buttressed bole at the base is branchless up to 20 m. The bark is bluish or ashy-grey covered with numerous fine longitudinal cracks, the inner bark yellowish. Leaves large, glabrous, alternate, broadly elliptic to obovate-elliptical, 4- 24 cm x 2-11 cm, base rounded to cuneate, rufous-sericeous but soon glabrescent, with 6-9 pairs of secondary veins. Secondary and tertiary venation prominent on both surfaces, clustered towards the ends of branchlets. Petiole 2.5-9 cm long. Young leaves copper-red, soon becoming parrot green, then dark green. Flowers solitary, small, 3-15 cm long, greenish white, simple, axillary spikes; calyx tube densely sericeous or tomentulose; flowers appear along with new leaves and have a strong honey-like smell. Fruit sub-globular to broadly ellipsoid, 2-4 x 1.8-2.2 cm, densely velutinous or sericeous, light-yellow, obscurely 5-angled and minutely brown tomentosa. The generic name 'Terminalia' comes from Latin word 'terminus' or 'terminalis' (ending), and refers to the habit of the leaves being crowded or borne on the tips of the shoots.

Traditional uses

Fruits are laxative, astringent, anthelmintic and antipyretic; useful in hepatitis, bronchitis, asthma, dyspepsia, piles, diarrhoea, coughs, hoarseness of voice, eye diseases and scorpion-sting; used as a hair tonic.

Decoction of the green fruit is used for cough. Pulp of the fruit is useful in dysenteric-diarrhoea, dropsy, piles and leprosy. Half ripe fruit is used as purgative. Kernel of the fruit is narcotic. Fruits are used in menstrual disorder in Khagrachari. Seed oil is used in rheumatism. Gum of the bark is demulcent and purgative. The triterpenoid present in the fruits possess significant antimicrobial activity. Kernel oil has purgative action and its prolonged use was well tolerated in mice (Ghani, 2003).^[1]

Phytoconstituents

Glucoside (bellericanin),^[12] Gallo-tannic acid, Coloring matter, resins and a greenish yellow oil.^[9] Ellagic acid, gallic acid, lignans (termilignan and thannilignan), 7-hydroxy 3'4' (methylenedioxy) flavone and anolignan B.^[11] Tannins, ellagic acid, ethyl gallate, galloyl glucose and chebulagic acid, phyllembin, β -sitosterol, mannitol, glucose, fructose and rhamnose.^[12,13]

Pharmacological effects

Analgesic activity: ArifUllah Khan *et al.*, (2010) describes the antisecretory and analgesic activities of the crude extract of *Terminalia bellerica*. *T. bellerica* extract at the dose range of 300 - 1000 mg/kg inhibited the castor oil-induced intestinal fluid secretion in mice. The extract also dose-dependently (50 - 100 mg/kg) where it reduced the numbers of acetic acid-mediated in mice. These results indicate that *TB* exhibit antisecretory and antinociceptive effects, hence justifying its medicinal use in diarrhea and pain.^[4]

Anti diarrhoeal activity: The Anti diarrhoeal activity was performed using Castor oil induced diarrhoea, PGE2 induced entero pooling and gastrointestinal motility test (Bimlesh Kumar *et al.*, 2010). Aqueous and ethanolic extract of fruit pulp of TB at the doses of 334 mg/kg, 200 mg/kg, 143 mg/kg were used. Comparison of percentage protection in these models revealed that the extracts have more prominent anti-secretory effect than the reduction in gastrointestinal motility.^[14]

CONCLUSION

Medicinal plants have been identified and used throughout human history. The study of traditional human uses of plants, is recognized as an effective way to discover future medicines. The use of herbs to treat diseases is almost universal among non- industrialized societies and is often more affordable than purchasing modern pharmaceuticals. Crude extracts of various parts of *Terminalia bellerica* plant have been found to contain constituents such as Glucoside, Gallo-tannic acid, colouring matter, resins and a greenish yellow oil. Ellagic acid, gallic acid, lignans, 7-hydroxy 3'4' flavone and anolignan B. Tannins, ellagic acid, ethyl gallate, galloyl glucose and chebulic acid, phyllembin, β - sitosterol mannitol, glucose, fructose and rhamnose. These compounds are believed to be responsible for the pharmacological activities such as antimicrobial, antioxidant, antisalmonella, hepatoprotective,

antispasmodic and bronchodilatory activities. Therefore, this plant is significantly used for the treatment and prevention of diseases. Further studies should be carried out for this plant to discover the unrevealed part of it which may serve for the welfare of mankind.

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