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Marking Nut (*Semicarpus anacardium*) – A Review

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SUMMARY

Semecarpus anacardium is commonly known as Bhallataka or Bhilwa. It has been a part of Indian medical systems like ayurveda and siddha for hundreds of years. All the parts are poisonous mostly seeds are hazardous to human, due to its irritant property. Bhilwanol and semecarpal, two poisonous ingredients found in Bhallataka nuts, but it have certain medicinal values. Numerous illnesses, including cancer, piles, and inflammation, can be cured with marking nut. The present review deals with the plant description, its active principles, uses and toxicity of *Semecarpus anacardium*.

INTRODUCTION

Semecarpus anacardium Linn., member of the Anacardiaceae family, is found in sub-Himalayan, tropical, and central India. The nut is also referred to as "marking nut" and "Ballataka" or "Bhilwa" in local dialects (Semalty*et al*., 2010). Semecarpus is a combination of the Greek words simeion, which means marking or trace, and carpus, which means nut and anacardium denotesheart shaped, so it is a "heart-shaped marking nut". Bhallataka is classified by Maharsi Charaka as an appetiser,an antidiuretic, and an antidermatosis. Bhallatakacan be used in the treatment of piles of vata and kapha types.Additionally, it has the capacity to cause allergic reactions through contact dermatitis(Jain andsharma, 2013).

*Semicarpus anacardium*is a plant whose therapeutic benefits in the Siddha and Ayurvedic systems of medicine are widely documented. Its nut has been chemically and phytochemically analysed, and the results show that it contains biflavonoids, phenolic compounds, minerals, vitamins and amino acids(Semalty*et al*., 2010). It is employed in the treatment of dyspepsia, piles, skin diseases and nervous debility and is characterised as acrid, hot, stimulating, digestive, nervine, and escharotic(Akbar, 2020).It should be used only after purifying processes because it is hot in potency. It is known as Bhallatakah,aruskarah in Sanskrit, bhela, bhilva in Hindi, goddugeru, karigeri, bhallika in Kannada, ceru, allakkuceru in Malayalam, senkottai, erimugi in Tamil, and bhallatamu, jidi in Telugu. It is known in English as the marany nut, oriental cashew, and marking nut tree(Mansoria Poornima*et al*., 2013).

Classification

Kingdom:Plantae
Subkingdom :Tracheobionta
Super division : Spermatophyta
Division :Magnoliophyta
Class :Magnoliopsida
Subclass :Rosidae
Order :Sapindales
Family :Anacardiaceae
Genus :Semecarpus
Species:Anacardium

Plant Description:

It is a small tree with a height of 12 metres that is indigenous to India's subtropical and Himalayan regions (Akbar, 2020). The barks are grey and shedding as small irregular flakes. Leaves are alternate,simple, lanceolate-obovate to oblong-obovate, rounded at apex and leathery. The upper surface of the leaves areglabrous,and the lower surface is whitish and pubescent(Mansoria Poornima *et al*., 2013). Flowers are borne in panicles and are greenish white,fasciculate, arranged in erect, compound, terminal panicles, greenish yellow coloured. In June, the plant blooms, and later it bears fruit (Jain and sharma , 2013). The fruit ripens between December and March (Semalty*et al.,* 2010). Fruits are 2.5 cm long, 2-3 cm wide obliquely ovoid or oblong drupes. The fruit's upper part has a cup-like shape, is smooth and fleshy, and is orange red in colour. It is tasty

and edible when ripe (Gouthaman*et al*., 2008). The fruit composed of thickened disc and accerescent calyx base. The lower part may be turned as nut which contains smooth, shining, thick and blackish pericarp which contains oblong cells full of a corrosive resinous juice between the pericarp's outer and inner laminae . Similar to the fruit of cashew nut , the marking nut tree has an edible false fruit that is orange and fleshy, but the true fruit is black, oily, and bitter. When the fruit is immature, the juice is white; however, as the fruit ripens, it turns brownish or almost black. The average weight of the nut is 3.5g and its size is 1"x 0.75"x 0.33"and the kernels of the nut are edible. As the nut's juice is highly vesicant, it has been used by washermen traditionally to mark clothes (Mansoria Poornima *et al*., 2013)




Active Principles

Semecarpetin ($C_{34}H_{30}O_9$), anacaduflavanone ($C_{35}H_{30}O_{12}$), semecarduflavanone, galluflavanone, jeediflavanone, and dimeic flavonoid nallaflavanone are all found in this fruit. The kernel oil has oleic acid, linoleic acid, palmetic acid, stearic acid and arachid acid, the oil is unsuitable for edible purposes because of it's high acid value. (Patel *et al*.,2020).

Traditional Uses

Bhallataka is used in folk medicine to colour hair and speed up hair development, as well as in traditional medicine to cure hair disorders.(Semalty*et al*., 2010).It impart a mark on the fabric that was insoluble

in water, thus washermen used it to mark cloth before washing and used to make paints, lacquers, enamels, and varnishes. Additionally, it is used to produce insecticides and antiseptics, waterproof textile fabrics, give them a lather finish, and produce paper boards and cardboards.

Bhallataka is sweet and astringent in taste. It is extremely heat generating. A wide range of ailments are treated using the fruits, their oil, and their seeds because they have such high medicinal potential. In Ayurveda, detoxified SA nuts were used to treat skin diseases, tumours, cancerous growths, fevers, hemoptysis, excessive menstruation, vaginal discharge, poor lactation, constipation, and intestinal parasites. Semecarpus anacardium must first be detoxified before being used for medical purposes because improper use can be extremely poisonous to the body.Several Ayurvedic preparations such as "Bhallatakarasayana", "Amritha bhallataki" and "Brihat bhallatakalehya" are marketed in India.

Toxicological Evaluation

Oral administration of *Semecarpus anacardium* is possible with milk, ghee, peanut oil, etc. Such administration routes do not show toxic effects. On the other hand, anabolic effects come about. To achieve therapeutic results without toxicity, traditional Ayurvedic and Siddha procedures should be strictly adhered to (Patel *et al*., 2020).

Toxic Characteristics

S. anacardium has been shown to have certain poisonous characteristics in addition to its many therapeutic qualities. Malingerers typically employ the potent irritating characteristics of pericarp juice to cause ophthalmic and skin lesions, as well as to producing abortions.Skin lesions, anuria, and widespread cortical necrosis were all brought on by exposure to the sap of the *S. anacardium*.The sap's phenolic constituents may be the cause of its nephrotoxicity. When *S. anacardium* was applied externally, it caused extremely painful micturition, bloody urine, and painful bowel movements. In each instance, the side effects were connected to the dosage of the drug given to the patients. They reported that 17 out of 70 individuals experienced medication reactions. They typically manifest as itching in the dorsal areas of the hands and forearm, which is sometimes accompanied with reddish maculo-papular rashes. Stomatitis was accompanied by severe rashes and itching all over the body, burning in the anal area, and disruptions in sleep in the majority of patients (Gouthaman *et al*.,2008).

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