

**CONCEPTUAL STUDY ON THE AYURVEDIC REVIEW ON *BHALLATAKA VISHA* AND ITS *CHIKITSA***

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**ABSTRACT**

Classification of poison is based on criteria like origin, base, properties and potency. the poisons into two categories as *Mahavisha* and *Upavisha* based on its toxicity. In *Ayurveda* *Upavisha* are the group of toxic drugs, which are less toxic in nature and not so lethal but produce certain toxic symptoms on consumption or administration. *Bhallataka* (*Semecarpus anacardium*) is mentioned in *Upavisha Varga* in *Ayurvedic* texts. It is a common drug indicated therapeutically for the management of various disease like *Arsha* (Piles), *Kushtha* (Skin disease), *Udara* (Ascitis), *Jwara* (fever), *Krimi* (Worm infestation) etc. Number of *Ayurvedic* formulations includes this drug after its proper *shodhana samskara* (Purification process) as injudicious use of *Ashuddha* (impure) *Bhallataka* may results in toxic effects like burning sensation of skin, blister formation, ulcer and so on. Treatment of toxic effects of *Bhallataka* is described in various texts of *Ayurveda*. This review article includes overall information about the plant *Bhallatka* its botanical description toxicological aspect, treatment, medico legal aspect of *Bhallataka* in *Ayurveda* and modern toxicology.

**KEYWORDS:** *Bhallatak*, *Upavisha*, Toxicology, *Shodhan*.

**INTRODUCTION**

*Bhallatak* is included in the group of *Sthavar Vanasaptik Visha*. (Vegetable Poison)

**Botanical name:** *Semecarpus Anacardium* Family – *Anacardaceae*.

**Synonyms:** *Bhallataka*, *Agnimukhi*, *Dahana*, *Agnika*, *Tapana*.

**Distribution:** Throughout India, in semi evergreen and moist deciduous forests. Medium sized to large tree 15 to 25 m in height with Gray bark exfoliating in small irregular flakes.

**Leaves:** simple alternate, obovate oblong, rounded at the apex, coraceous, glabrous above and more or less pubescent beneath, main nerve 15-25 pairs.

**Flowers:** Greenish white fascicled in pubescent panicles.

**Fruits:** Obliquely ovoid or oblong drupes, 2.5 cm long, black wine ripe, seated on a freshly receptacle which is yellow when ripe.

**Classical reference of *Bhallatak***

Charak describe *Rasayan* property of *Bhallatak*. 10 types of *Bhallatak Rasayan* preparation.<sup>[1]</sup>

**Properties of *Bhallatak***

Properties	<i>Bhavprakash</i> <sup>[2]</sup>	<i>Dhanvantari</i> <sup>[3]</sup>	<i>Rajnighantu</i> <sup>[4]</sup>	<i>Madanpal</i> <sup>[5]</sup>
<b>Rasa</b>	<i>Kashay, Madhur</i>	<i>Katu, Tikta, Madhur</i>	<i>Katu, Tikta, Kashay</i>	<i>Kashay, Madhur</i>
<b>Guna</b>	<i>Laghu</i>			<i>Laghu</i>
<b>Vipak</b>				
<b>Virya</b>	<i>Ushna</i>	<i>Ushna</i>	<i>Ushna</i>	<i>Ushna</i>
<b>Karma</b>	<i>Sukrala</i>			
<b>Doshaghnta</b>	<i>Vatakaphhar</i>	<i>Vatakaphhar</i>	<i>Vatakaphhar</i>	<i>Vatakaphahar</i>

<b>Roghnanta</b>	<i>Udar, anaha, kushta, grahani, gulma, jwar</i>	<i>Anaha, kushta, arsha, grahani, gulma</i>	<i>Prameha</i>	<i>Udar, anaha, kushta, grahani, vrana, krimi</i>
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### Properties of *Bhallatak* Fruits

Properties	<i>Bhavprakash</i> <sup>[6]</sup>	<i>Rajnighantu</i> <sup>[7]</sup>	<i>Kaidevanighnatu</i> <sup>[8]</sup>
<b>Rasa</b>	<i>Madhur, Kashay</i>	<i>Kashaya, Madhur</i>	<i>Madhur</i>
<b>Vipak</b>	<i>Madhur</i>		<i>Madhur</i>
<b>Virya</b>	<i>Ushna</i>	<i>Koshna</i>	<i>Sheeta</i>
<b>Guna</b>	<i>Laghu, Snighdha, Tikshna</i>		<i>Guru, Ruksha</i>
<b>Karma</b>	<i>Deepan, pachan, bhedan, Medhya</i>		<i>Shukral</i>
<b>Doshaghnta</b>	<i>Kaphavatahar</i>	<i>Kapahar</i>	<i>Pittahar</i>
<b>Roghnanta</b>	<i>Vrana, udar, kushta, arsha, Shopha, anaha, jwar</i>	<i>Shrama, Shwas, Anaha, Vibhandha, shula, Adhaman</i>	<i>Raktapittahar</i>

Pharmacological action of medicine and poison depends upon *Guna, Rasa, Veerya, Vipaka* of the substance. we study common characteristics of *Bhallataka*, we find that *Bhallataka* carries properties like *Laghu* (Lightness) & *Tikshna* (Sharp) and its *Veerya* is *Ushna* (Hot) which is similar to poison.

### Shodhan of *Bhallatak*

*Upavisha Bhallataka* is one of the irritant organic vegetable poisons they are to be subjected to a process called *Shodana Samskaras* (purifying process) before using it as a therapeutic formulation this process reduces the toxicity of *Bhallataka* and enhances its therapeutic property. If juice of *Bhallataka* comes in contact with face it produces acute burning sensation with *Shotha* (inflammation) and *Visarpa* (erysipelas). Hence it is necessary to do *Shodana* of *Bhallataka*.

1. Ripe *Bhallataka* fruit and *Ishtika Choorna* filled in *Potli*, the *Potli* is rubbed by hand by applying moderate pressure. when brick powder becomes wet with oil and the skin of *Bhallataka* fruit is peeled off, and it is washed in hot water.<sup>[9,10]</sup>
2. *Bhallataka* fruits are cut in two pieces and placed in *Dolayantra* with *Narikela Jala* and subjected to *Swedana* for 2 hours.<sup>[11,12]</sup>
3. *Bhallataka* kept in *Gomaya Swarasa* for 3 days and then again washed in *Nalikera Jalam*.<sup>[13]</sup>
4. Fresh *Bhallataka* has to be taken which is collected in prescribed season do *Bhavana* for 7 days in *Gomutra* after 7 days wash it in hot water. Then 7 days *Bhavana* in *Goksheeram*.<sup>[14]</sup>

### Manifestation of Toxicity of *Bhallataka*

In *Charaka Samhita* one of the causes of *Agantuja Shotha* (exogenous swelling) is contact of fruits or flowers of *Bhallataka* with body.<sup>[15]</sup> If juice of *Bhallataka* comes in contact with body, produces severe *Daha* (burning sensation), and *Vrana* (ulcer). When it comes in contact with face, it produces acute burning sensation with *Shotha* (inflammation) and *Visarpa*.<sup>[16]</sup> Some persons have intolerance of *Bhallataka* and they show manifestation like dark urine, itching all over body, red patches, blisters, diarrhea, fever, bloody urine, blisters are ruptured even show *Unmad* (Psychological disorder). Oligouria, cloudy urine, itching at anus and

penis may also find.<sup>[17]</sup> Some cases are reported of adverse effect of *Bhallataka* during treatment of piles. After administration of this drug 32 patients developed hepatitis, albuminuria, and generalized urticarial.<sup>[18]</sup>

### Treatment of *Bhallatak* Toxicity

The specific antidote for the toxicity of *Bhallataka* is *Bibhitaka (Terminali abelera)*. The decoction or powder preparations with fruit rind and bark of *Terminalia belerica* are effective for the sudden reactions and for systemic effects. Drugs that mitigate *Pitta* like milk and clarified butter and other drugs with cold potency may also be used.<sup>[19]</sup>

1. *Bhallatka Shothahara Yoga*<sup>[20]</sup> 1. Local application of paste of *Tila* rubbed with buffalo milk and mixed with butter.
2. Local application of paste of *Yashtimadhu* and *Tila* rubbed with milk.
3. local application of rubbed *Shalapatra (Desmodium gangeticum)*.
4. *Arushkara Shothaghna lepa*<sup>[21]</sup> Paste of *Tila* with goat milk and butter Or *Krishna mrittika* is used in *Shotha* caused by *Bhallataka*

Local application for quick relief of *Bhallataka Shotha* are as follows<sup>[22]</sup>

1. Mixture of *Meghnad Swarasa* and butter Or Mixture of *Devdaru, Sarshapa, Nagarmotha* and *Navneeta*.
2. Mixture of *Navneeta, Tila, Mishri* and milk Or *Neema, Tila*.
3. *Tila Taila* are boiled together and made concentrated to apply locally.

When manifestation of toxicity observed, medication of *Bhallataka* is stopped and white albumen of coconut or juice of leaves of *Chincha* given or Sesamum or coconut is given to eat. Externally coconut oil, ghee, lead lotion is applied.<sup>[23]</sup>

### Precaution while consuming Formulation of *Bhallataka*<sup>[24]</sup>

**Pathya**- Person should consume milk & rice and ghee in large quantity.

**Varjya** (Avoid)- Walking in sun, excess sexual intercourse, meat consumption, salt, exercise, and oil massage. Contraindication of *Bhallataka*. Formulations

in- *Pitta* diseases, Haemorrhagic tendency, Pregnancy, Child, old age, Diarrhoea, Nephritis & summer(hot) season.

#### Toxicology of *Bhallataka* by Modern Review

**CONSTITUENT PRESENT:** Marking Nuts are black, heart shaped with rough projection at base they have a thick pericarp, which contains an irritant juice which is brownish, oily and acrid but turn black on exposure to air. the active principles are semicarpol (0.1%) and bhillawanol (15 to 17%)<sup>33</sup>.

**Symptoms and signs**<sup>[25]</sup>: The juice when applied to skin, it causes irritation painful blisters containing acrid serum which causes an eczematous eruption on any part of the skin with which it comes in contact. The lesion resembles a bruise which may later ulcerate and slough. If Internally administered, it causes blisters in the mouth throat and severe gastroenteritis haematuria painful micturition and defecation, in some cases dyspnoea cyanosis rapid fall of B.P, loss of reflexes tachycardia coma and death.

**Fatal dose:** 5 to 10 gms<sup>[26]</sup> or 6 - 8 seeds.<sup>[27]</sup>

**Fatal Period:** 12 to 24 hours<sup>[28]</sup>

**Treatment:** This is symptomatic. When applied externally the parts should be washed with water and bland liniments applied.<sup>[29]</sup> If taken orally wash stomach with warm water. Give milk, ice to suck and 10 mg morphine for pain.<sup>[30]</sup>

**Post-mortem Appearances:** Externally, bruise like lesion with surrounding small blisters may be noticed near the angle of the mouth or on the lips, if juice is swallowed. Internally, inflammation and blister formation may be seen in the pharynx and oesophagus. The stomach may be highly congested. Other organs are congested. Liver may show early degenerative change.<sup>[31]</sup> The blister fluid should be preserved in rectified spirit and sent to a forensic science laboratory for analysis if necessary.<sup>[32]</sup>

**Chemical Analysis**<sup>[33]</sup>: The vesicating principles of marking-nut juice is extracted from an organic mixture or stained cloth by Stas-Otto process up to the stage of the evaporation of alcoholic extract. The alcoholic residue is then taken up in hot water acidified with dilute sulphuric acid and extracted with petroleum ether. After evaporation of the solvent to dryness, the residue identified following tests: -

1. If a portion of the residue is dissolved in a little alcohol and a few drops of an alcoholic solution of caustic potash is added, a bluish-green or green colour develops.
2. Of another portion of the residue is dissolved in a little alcohol and a few drops of basic lead acetate solution are added, a greenish-black precipitate is produced.
3. When a small portion of the residue is mixed with a drop or two of olive oil, and a drop of mixture is

rubbed on the skin, it produces after an interval of about one or two days a painful and irritating blister which spreads over the surrounding area. It must be remembered that the vesicating action of the active principle of marking-nut juice is destroyed by caustic potash. this property is not found in other vesicating principles.

4. To find out whether a vesicle on the skin is produced by marking-nut juice, remove the epidermis of vesicle and extract it with absolute alcohol, or apply lint soaked in absolute alcohol under gutta percha tissue over the vesicle. The alcoholic extract with a few drops of an alcoholic solution of caustic potash assumes a bluish-green colour.

#### Medico-legal Aspect/Circumstances of poisoning<sup>[34]</sup>

1. Accidental poisoning may result from the administration of juice internally by quaks.
2. Homicidal and suicidal poisoning is rare.
3. Sometimes the juice is introduced in vagina as a punishment for infidelity.
4. To support false charge of assault the juice is applied to skin which produce lesion stimulating bruises.
5. The juice may be thrown on the body to cause injury.
6. For criminal abortion, the bruised nut is applied to cervical os.
7. Malingerers use juice to produce Ophthalmia.

#### DISCUSSION

In Ayurved *Bhallataka* is considered under *Upavisha Dravya* as per Govt rules and regulation this poisonous medicinal plant comes under control of Drug and Cosmetic Act 1940. *Bhallataka* is *Teekshna* (sharp) *Paki* (corrosive) and like *Agnisama* (fire). But when prepared according to the prescribed methods, they work like *Amrtha*. There is no disease caused by *Kapha* and no *Vibandha* (constipation) which are not instantaneously cured by the administration of *Bhallataka* and promotes *Medha* (intellect) *agni* (power of digestion and metabolism. semicarpus anacardium have been used for the treatment of diseases throughout the world since the beginning of civilization. further research and more efforts on semicarpus anacardium needed to study traditional uses of the plant for the welfare of mankind.

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