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A comprehensive review on *Bhallataka* from classical texts of Ayurveda

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ABSTRACT

Bhallataka (*Semecarpus anacardium* Linn.), is one of the important medicinal plant used in Ayurveda. Classical texts of Ayurveda cited its therapeutic efficacy in numerous disease conditions as a single drug and as an ingredient of compound formulations. The present review provides a single hand information collected from classical Ayurvedic literatures on the drug "*Bhallataka*", being compiled from 13 Nighantus (lexicons), 16 Samhita/Chikitsa granthas (compendia of Ayurveda) and Rasa granthas (Compendia related to Rasashastra). It is observed that, more than 80 synonyms were coined for describing the morphological and pharmacological characters of *Bhallataka*. Different parts of *Bhallataka* are attributed with different pharmacological properties and actions. There is some difference of opinion regarding the properties and actions in the later nighantus. It is also used as an ingredient of different compound formulations which were used in 23 different dosage forms, where *Taila* (Oil), *Ghrita* (Ghee), *Churna* (Powder), *Vati* (Tablet) and *Kashaya* (Decoction) are found to be maximum number. Majority of formulations containing *Bhallataka* are indicated in *Arsha* (Haemorrhoids), *Kushtha* (Skin diseases), *Gulma* (Lump), *Grahani* (derangement of agni situated in grahani), *Prameha* (Polyuria) and *Vataroga* (Diseases of vata origin). Since the drug is mentioned under semipoisonous group of drugs, judicious use of *Bhallataka*, after proper processing is advocated. Specific collection and storage practices, antidotes and dietary habits to be followed during *Bhallataka* administration to prevent possible adverse effects are also documented in classical texts of Ayurveda.

Key words: *Arushkara*, *Ayurveda*, *Bhallataka*, *Semecarpus anacardium* Linn, *Shodhana*.

INTRODUCTION

Herbal drugs have served the human society from time immemorial in curing various ailments. In recent years, Indian knowledge of herbal remedies, has gained vital role in the health management throughout the globe. The important advantages

claimed for therapeutic uses of medicinal plants in various ailments are their safety besides being economical, effective and their easy availability.^[1] *Bhallataka* is one of the important medicinal plants used in Ayurveda to treat wide range of diseases. *Bhallataka*, as it is most commonly called, has been described as "the tree with irritant properties/nature".^[2] *Bhallataka* is identified botanically as *Semecarpus anacardium* Linn., belonging to family Anacardiaceae.

Based upon its pharmacological properties and actions, the drug has been categorized under different groups like *Dipaniya* (Digestion and metabolism enhancing), *Mutra sangrahaniya* (group of ten anti-diuretic dravya), *Kushtaghna* (group of ten anti-dermatosis drugs), *Katu skandha* (Group of drugs having pungent taste) *Kashaya skanda* (Group of drugs having astringent taste), *Chandanadi varga*,

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Haritkayadi varga, *Abhayadi varga* etc. Considering its irritant action, text books related to Rasa shastra included this drug under *Upavisha varga* (group of semipoisonous drugs).

As a single drug as well as an ingredient of polyherbal formulations *Bhallataka* is indicated in wide range of disease conditions. As the drug is listed under one of the irritant organic vegetable poison, it should be used judiciously. In most of the classical texts all the precautionary measures to be followed to reduce the possible adverse effects due to improper administration of *Bhallataka* has been dealt in detail.

Though the drug *Bhallataka* is used extensively in Ayurvedic classics, recent review shows that, available published literature regarding the drug *Bhallataka* is very much limited. A complete review including its properties, good collection practices, purificatory methods, antidotes, precautionary measures during its administration are still lacking. Therefore, in this article an attempt has been made to review the drug *Bhallataka* from available classical literature and present in a systematic manner.

MATERIALS AND METHODS

In the present work, a comprehensive review of available information on the drug *Bhallataka* is being made from 16 samhita/sangraha grantha i.e. Charaka samhita,^[3] Sushruta samhita,^[4] Astanga sangraha,^[5] Astanga hridaya,^[6] Bhela samhita,^[7] Harita samhita,^[8] Vrinda madhava,^[9] Chakradatta,^[10] Sharangadhara samhita,^[11] Yogaratnakara,^[12] Bhaishajya ratnavali,^[13] Sahasrayoga,^[14] Gadanigraha,^[15] Vangasena,^[16] Bhavaprakasha,^[17] Chikitsa kalika^[18] and 13 different nighantu i.e., Dhanvantari nighantu,^[19] Astanga nighantu,^[20] Dravyaguna sangraha,^[21] Nighantu shesha,^[22] Shodhala nighantu,^[23] Madanapala nighantu,^[24] Kaiyadeva nighantu,^[25] Rajavallabha nighantu,^[26] Bhavaprakasha nighantu,^[27] Raja nighantu,^[28] Shaligrama nighantu,^[29] Saraswati nighantu^[30] and Priya nighantu.^[31] Text books related to Rasashastra like Rasarava,^[32] Rasaratna samucchaya,^[33] Rasendra sara sangraha,^[34] Rasa

tarangini,^[35] Yoga tarangini,^[36] Rasamanjari^[37] etc. were also referred. After a thorough and critical review of compiled information, the available data is presented in a systematic manner with regards to its synonyms, classification, pharmacological properties, actions, indications and its use as an ingredient in various compound formulations along with its dosage forms and route of administration. Important aspects like good collection and storage practices, possible adverse effects, purificatory procedures, antidotes and precautions to be taken during the administration of *Bhallataka* are also dealt in detail.

RESULT AND DISCUSSION

Synonyms

In Classical texts, based on the morphological characters as well as pharmacological properties, different synonyms (*Paryaya*) have been mentioned to a single plant. The method to describe the morphology of medicinal plant was started in Charaka Samhita in form of synonyms.^[38] After Samhita era, Nighantus (lexicons) were written specially to collect the botanical and pharmaco-therapeutic information of herbs. Further, authors of Nighantus have amplified the method of synonym formation and generated more identical synonyms based on morphology and therapeutic utility by which plant can be identified easily.^[39] In the present review, it is observed that, more than 80 synonyms have been attributed to *Bhallataka* for describing its morphological and pharmacological characters. Based upon synonyms compiled from lexicons, *Bhallataka* can be described as follows; A tree with irritant sap (*Bhallataka*, *Bhalla*), having fruits which are obliquely ovoid in shape (*Dhanurbeeja*), seeds having oil content (*Taila beeja*, *Sneha beeja*, *Bhuri sneha*) which is difficult to touch (*Veeravriksha*), causes burning sensation like fire (*Agnika*, *Agni*, *Anala*, *Dahana*, *Tapana*, *Agnimukhi*), oedema/inflammation (*Shophakriti*); indicated in hemorrhoids (*Arsohita*), *Vatika* disorders (*Vatari*) acts as anthelmintic (*Krimighna*) and destroys evil things (*Raskshogna*). (Table 1)

Table 1: Synonyms of *Bhallataka* and their classification^[19-31]

Pharmacognostical characters	
<i>Bhallataka, Bhalli.</i>	Tree with irritant sap.
<i>Arushkara</i>	That causes blisters and ulcers on touch.
<i>Taila beeja, Sneha beeja, Bhuri sneha</i>	Seed that contain oil.
<i>Dhanurbeeja</i>	Fruits are obliquely ovoid in shape.
<i>Veeravriksha, veerataru</i>	Difficult to touch.
Based on Karma (Action)	
<i>Vatari</i>	That cures <i>vatika</i> disorders.
<i>Ranjaka</i>	Due to its marking nature.
<i>Shophakara</i>	That causes swelling.
Based on Pharmacological actions	
<i>Krimighna</i>	Helps to kill worms
<i>Arsohita</i>	The plant is used to treat <i>Arshas</i>
<i>Bhedana</i>	Useful in <i>Arbuda</i>
Others	
<i>Agnika, Jwalamukhi, Dahana, Agni, Anala, Agnimukhi</i>	It causes burns like fire.

Classification

Bhallataka has been classified under different group of drugs in classical texts of Ayurveda. In samhita granthas, *Bhallataka* is placed under different groups like *Dipaniya* (Digestion and metabolism enhancing), *Mutra sangrahaniya* (Group of anti-diuretic drugs), *Kushtaghna* (Group of anti-dermatosis drugs), *Katu skandha* (Group of drugs having pungent taste) *Kashaya skanda* (Group of drugs having astringent taste), *Mustadi gana*, *Phala varga* (Group of fruits) and *Nygrodhadi gana*. In later Nighantus, *Bhallataka* is described under *Chandanadi varga*, *Haritkayadi varga*, *Abhayadi varga*, *Aushadi varga* and in *Amradi varga*. Text books related to Rasa shastra included this drug under *Upavisha varga* (Group of semipoisonous drugs) and in *Taila varga*. Classification of *Bhallataka*

as per different classical texts has been given in Table 2.

Table 2: Classical categorization of *Bhallataka*

SN	Samhita /Nighantu	Group
1.	Charaka samhita ^[3]	<i>Dipaniya gana, Mutra-sangrahaniya, Kushtaghna, Katu skandha, Kashaya skandha</i>
2.	Sushruta samhita ^[4]	<i>Nygrodhadi gana, Mustadi gana, Kashaya varga, Phala varga</i>
3.	Astanga sangraha ^[5]	<i>Dipaniya, Kushtaghna, Mutra sangrahana, Taila varga, Shaka varga, Phala varga</i>
4.	Astanga hridaya ^[6]	<i>Nygrodhadi gana, Mustadi gana, Katu skandha, Phala varga</i>
5.	Dhanvantari nighantu ^[19]	<i>Chandanadi varga, Upavisha varga</i>
6.	Astanaga nighantu ^[20]	<i>Mustadi gana</i>
7.	Dravyaguna sangraha ^[21]	<i>Phala varga</i>
8.	Nighantu Shesha ^[22]	<i>Vrikshakanda</i>
9.	Shodhala nighantu ^[23]	<i>Chandanadi varga, Anekarthavarga</i>
10.	Madanpala nighantu ^[24]	<i>Abhayadi varga</i>
11.	Kaiyadeva nighantu ^[25]	<i>Aushadhi varga</i>
12.	Rajavallabha nighantu ^[26]	<i>Aushadhashraya pariccheda</i>
13.	Bhavaprakasha nighantu ^[27]	<i>Haritakyadi varga</i>
14.	Raja nighantu ^[28]	<i>Amradi varga</i>
15.	Shaligrama nighantu ^[29]	<i>Ashta varga</i>
16.	Saraswati nighantu ^[30]	<i>Mahavriksha varga</i>
17.	Priya nighantu ^[31]	<i>Haritakyadi varga</i>
18.	Rasendra chudamani	<i>Upavisha varga</i>
19.	Rasa ratna	<i>Taila varga, Upavisha varga</i>

	samucchya ^[33]	
20.	Rasa tarangini ^[36]	Taila varga, Upavisha varga

Pharmacological properties

Different parts of *Bhallataka* have been attributed with different properties in Nighantu (Lexicons). There are some difference in opinion regarding the properties of *Bhallataka* and its parts. *Bhallataka* is having *Tikta* (bitter), *Kashaya* (astringent), *Madhura* (sweet) *rasa*; *Laghu* (light), *sheeta* (cold) *guna*; *Katu vipaka*, *Grahi* and *Shukrala* properties. It is mentioned as *Pittakaphahara* in *Kaiyadeva nighantu* while Bhavamishra mentioned its *Vatakaphahara* action. *Bhallataka pakva phala* is having *Madhura*, *kashaya* *rasa*; *Ushna virya*; *Madhura vipaka*. As per Kaiyadeva nighantu, it is having *Guru*, *Ruksha*, *Sheeta* properties; while As per Bhavaprakasha nighantu it is having *Laghu*, *Snigdha*, *Tikshna* properties. *Brimhana*, *Vishtambhi*, *Shukrala*, *Durjara*, *Balya*, *Pachana*, *Chedana*, *Bhedana*, *Medhya*, *Deepana* are some of the pharmacological actions mentioned by both the authors. Properties and actions of *Bhallataka asthi* are enlisted only in Kaiyadeva nighantu, which are *Madhura*, *Tikta*, *Katu Rasa*; *Laghu*, *Snigdha*, *Tikshna guna*; *Ushna virya*; *Katu vipaka*; *Kaphavatahara*, *Pachana*, *Chedana*, *Bhedana*, *Medhya*, *Deepana Karma*. Both *Bhallataka vrinta* and *Bhallataka majja* are *Madhura* in *Rasa*. *Bhallataka vrintha* acts as *Pittahara*, but *Bhallataka majja* alleviates both *Pitta* and *Vata dosha*. *Bhallataka majja* is having *Vrishya* and *Brimhana* properties while *Keshya* is the specific action mentioned for *Bhallataka vrintha*. (Table 3)

Table 3: Properties and actions of different parts of *Bhallataka* as mentioned in different Nighantu

Part used	Rasa	Guna	Virya	Vipaka	Action on Dosha	Karma
<i>Bhallataka</i>	<i>Tikta</i> , <i>Kashaya</i> , <i>Madhura</i> (KDN)	<i>Laghu</i> , <i>Sheeta</i>		<i>Katu</i>	<i>Pitta kapha hara</i>	<i>Grahi</i>

	<i>Kashaya</i> , <i>Madhura</i> (BPN)	<i>Laghu</i>	<i>Ushna</i>		<i>Vata kapha hara</i>	<i>Shukrala</i>
<i>Bhallataka phala</i>	<i>Madhura</i> (KDN)	<i>Guru</i> , <i>Ruksha</i> , <i>Sheeta</i>	-	<i>Madhura</i>	<i>Pittahara</i> , <i>Vata kapha kara</i>	<i>Brimhana</i> , <i>Vishtambhi</i> , <i>Shukrala</i> , <i>Durjara</i> , <i>Balya</i>
	<i>Madhura</i> , <i>Kashaya</i> (BPN)	<i>Laghu</i> , <i>Snigdha</i> , <i>Teekshna</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Kapha vatahara</i>	<i>Pachana</i> , <i>Chedana</i> , <i>Bhedana</i> , <i>Medhya</i> , <i>Deepana</i>
<i>Bhallataka asthi</i>	<i>Madhura</i> , <i>Tikta</i> , <i>Katu</i> (KDN)	<i>Laghu</i> , <i>Snigdha</i> , <i>Teekshna</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kapha vatahara</i>	<i>Pachana</i> , <i>Chedana</i> , <i>Bhedana</i> , <i>Medhya</i> , <i>Deepana</i>
<i>Bhallataka majja</i>	<i>Madhura</i>				<i>Vatapi ttahara</i> , <i>Pittahara</i> (RN)	<i>Vrishya</i> , <i>Brimhana</i>
<i>Bhallataka vrinta</i>	<i>Madhura</i>				<i>Pittahara</i>	<i>Keshya</i> , <i>Agnikrut</i>

KDN- Kaiyadeva nighantu, BPN- Bhavaprakasha nighantu, RN- Raja nighantu

Indications

As a single ingredient, different parts of *Bhallataka* are indicated in different disease conditions. *Bhallataka* is indicated in conditions like *Udara* (Abdominal enlargement), *Anaha* (Barborygmus with distention), *Kushtha* (Skin diseases), *Arsha* (Haemorrhoids), *Grahani* (Derangement of agni situated in grahani), *Gulma* (Lump), *Jvara* (Fever), *Shvitra* (Leucoderma), etc. Acharya Bhavamishra indicated *Bhallataka phala* in *Vrana* (Ulceration), *Udara*, *Kushtha*, *Arsha*, *Grahani*, *Gulma*, *Shopha*

(Swelling), *Anaha*, *Jvara* and *Krimi* (Manifestation of worms). Same indications have been mentioned for *Bhallataka asthi* in Kaiyadeva nighantu. (Table 4)

Table 4: Properties and actions of different parts of *Bhallataka*.

Part used	Indications
<i>Bhallataka</i>	<i>Vibandha, Kaphaja roga, Udara, Anaha, Kushtha, Arsha, Grahani, Gulma, Jvara, Shvitra, Vrana, Agnimandya, Krimi (BPN)</i>
<i>Bhallataka phala</i>	<i>Vrana, Udara, Kushtha, Arsha, Grahani, Gulma, Shophya, Anaha, Jvara, Krimi (BPN)</i> <i>Shrama, Shwasa, Vibandha, Shula, Adhmana (RN)</i>
<i>Bhallataka majja</i>	<i>Daha, Arochaka (RN)</i>
<i>Bhallataka asthi</i>	<i>Vrana, Udara, Kushtha, Arsha, Grahani, Gulma, Shophya, Anaha, Jvara, Krimi (KDN)</i>
KDN- Kaiyadeva nighantu, BPN- Bhavaprakasha nighantu, RN- Raja nighantu	

Good collection and storage practices

Ayurveda emphasizes selection of genuine quality drugs for therapeutic uses. Selection criteria of the individual herbal drugs differ from drug to drug. Scientific studies are also reported with an effort to find out and establish the reason behind the logic of selection criteria.^[40]

Selection criteria for *Bhallataka*

Fully matured (*Paripakva*, *Poorna rasa*), Undamaged (*Anupahata*), disease free (*Anamaya*), fresh, potent (*poorna virya*) fruits of appropriate size (*Poorna pramana*) should be collected. Fruits similar to ripened jambu fruit (*Pakwa jambu phala*), fallen by wind (*Pavana hata*) should be collected and they should not be plucked directly from the plant (*Anyahrita*). After collection, those fruits, sinks in water (*Nirakshiptham nimanjathi*) has to be separated and selected.

Time of collection

According to Charaka samhita and Astanga sangraha, fruits should be collected during the month of Shuci-

jyestha (May-June) or in Sukra-ashadha (June-july) and used in the month of *Saha-agrahayana* (Nov-Dec).^[41,42] Acharya Vagbhata in *Astanga hridaya* specified that, fruits should be collected during Grishma ritu (Summer season) and used during Hemanta ritu (Winter season).^[43] After the collection, fruits are preserved in Yava/masha/dhanya rashi for a duration of four months.

Possible adverse effects

Bhallataka is placed under the group of semipoisonous drugs (*Upavisha varga*) in Classical texts. It is also mentioned under the list of poisonous substances under the Ayurveda, Siddha and Unani systems of medicine.^[44] The drug is likely to produce some discomfort or adverse reactions when administered inappropriately.

Dermal contact with *Bhallataka* juice even in minute quantity will produce severe burning sensation (*Daruna daha*) and ulceration (*Vrana*). When it comes in contact with face, produces oedema/inflammation (*Shotha*) associated with severe burning sensation (*Daha*).^[45] In Charaka samhita, contact with *Bhallataka* flowers and fruits is enlisted as one of the cause for *Agantuja shotha* (oedema/inflammation due to external causes).^[46]

Shodhana (purification) of *Bhallataka*

Shodhana is a unique concept mentioned in classical texts of Ayurveda where poisonous/semipoisonous drugs are passed through some specific recommended purificatory procedures to reduce or nullify the possible toxic effects. To minimize the possible adverse reactions of *Bhallataka* different purificatory methods are advised before its internal administration. The recommended *Shodhana* procedures are reported to reduce the toxic effects and at the same time they will also increase the therapeutic effects. In a study, impact of *Shodhana* on *Bhallataka* fruits was evaluated by pharmaceutical, physico-chemical and chromatographical parameters. Rf values of methanolic extract of processed *Bhallataka* fruits showed the difference when compared to the raw *Bhallataka* fruits, proving the chemical changes during *Shodhana*. Increased level of

anacardol was observed in *Shodhita* (processed) fruits in comparison to the raw fruits.^[47] It is also observed that the toxic constituents are transferred into media rendering the drug non-toxic. Specific media has an important role in making a drug to act without causing any side effects or adverse effects.^[48]

Method I: *Pottali* is prepared by placing *Bhallataka* fruits and *Ishtika churna* (Brick powder) in a clean cloth. This *Pottali* is rubbed by hand by applying moderate pressure. When brick powder become wet with oil and the skin of *Bhallataka* fruit is peeled off, it is washed with hot water and stored.^[45]

Method II: *Bhallataka* fruits are cut in two pieces, placed in *Dolayantra* and sudated on mild fire with coconut water.^[45]

Method III: After removing the attachment of thalamus, *Bhallataka* fruits are soaked in *Gomutra* (Cow's urine) for 7 days and thereafter in *Go-dugdha* (Cow's Milk) for 7 days. The seeds then put into bag containing coarse brick powder with which they are rubbed carefully, with a view to reduce the oil content, then the fruits are washed with water and dried in air.^[49]

Method IV: Traditional purificatory method i.e. frying the *Bhallataka* fruit is followed traditionally in southern parts of India.^[50]

Antidotes

Ayurvedic texts have listed antidotes for many commonly known poisonous and semi-poisonous substances to nullify their side effects. Following are the some antidotes mentioned to decrease the toxic effects of *Bhallataka*.

- According to Basavarajeeyam, *Palasha pushpa* (Flowers of *Butea monosperma* (Lam.) Taub.) and *Kapikacchu* (*Mucuna pruriens* (L.) DC.) are the two specific antidotes prescribed to reduce the toxicity of *Bhallataka*.^[51]
- To reduce the oedema caused by *Bhallataka*, paste of *Tila* (*Sesamum indicum* L.), *Dugdha* (Milk), *madhuka* (*Madhuca longifolia* (J.Koenig ex L.) J.F.Macbr.), *Navaneeta* (butter) or; paste of

Yashtimadhu (*Glycyrrhiza glabra* L.), *Dugdha* and *Tila* along with *Navaneeta* or; application of soil under the *Bhallataka* tree or; Application of *Shala* leaves is indicated.^[52]

- As a precautionary measure, before *Shodhana* procedure, application of *Narikela taila* (Coconut oil) over hands is indicated.^[45]
- Local application of paste prepared from *Tila* (*Sesamum indicum* L.), *Mahisha kshira* (Buffalo's Milk) and *Navaneeta* (butter) pacifies oedema caused by *Bhallataka*. Paste of *Yashtimadhu* (*Glycyrrhiza glabra* L.), *dugdha* (Milk) , *Tila*, *Navaneeta* (butter) is also indicated for the same.^[56]
- The specific antidote for the toxicity of *Bhallataka* is *Bibhitaka* (*Terminalia bellirica* (Gaertn.) Roxb.). The decoction or powder preparations with fruit rind and bark of *T. bellirica* (Gaertn.) Roxb. 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 can be given.^[57]
- Local application of root bark of *Udumbara* (*Ficus glomerata* Roxb.) is advised for swelling caused due to exposure to smoke of *Bhallataka*.^[58] Application of paste prepared from *Tinduka* (*Diospyros embryopteris* Pers.) stem is indicated for oedema due to *Bhallataka*.^[59]
- *Gandusha* (Gargling) with ghee or application of ghee on lips before administration of *Bhallataka*.

Precautions during *Bhallataka* administration

To avoid any further complications due to improper lifestyle and dietary habits, specific guidelines have been laid down in classical texts during the administration of poisonous and semi-poisonous drugs. Strict adherence to these guidelines is must to prevent any possible adverse reactions. Following are some indications and contraindications mentioned during the administration of *Bhallataka* as mentioned in Ayurvedic classics. (Table 5)

Table 5: Indications and and contra indications during *Bhallataka* administration

Diet/lifestyle	Indications	Contraindications
Dietary articles	<i>Ghrita, Kshira, Shastika shali</i> <i>Amalaka shukthi, Dadhisara, Taila, Guda, Yavasaktu, Tila, Makshika, Palala, Supa, Shita jala</i> (Cold water)	<i>Kulattha</i> (<i>Dolichos biflorus</i>), <i>Dadhi, Shukta, Ushna jala</i> (Hot water)
Lifestyle	One should stay in a place where not much air comes	Direct contact of air, sunlight and heat; <i>Tailabhyanga</i> (Oil massage), <i>Krodha</i> (Anger), <i>Vyayama</i> (Exercise).

Formulations of *Bhallataka*

Apart from its use as a single drug, *Bhallataka* is used in different polyherbal formulations used in treatment of different disease conditions. Number of formulations mentioned in compiled 23 classical texts of Ayurveda is presented in Table 6. The compiled data shows that, during samhita period, maximum number of formulations of *Bhallataka* are mentioned in *Astangasangraha* (72), followed by *Astangahridaya* (39). Among *Sangraha granthas*, author of *Gadanigraha* (106) mentioned maximum number of formulations followed by *Vangasena* (79), *Bhaishajya ratnavali* (73), *Chakradatta* (53) and *Yogaratanakara* (47). Among the compiled *Rasa granthas*, maximum number of formulations are found in *Rasaratnasamucchaya* (24) followed by *Yoga tarangini* (16) and *Rasa tarangini* (12). *Bharata bhaishajya ratnakara*, the latest compilation of classical formulations also mentioned maximum number (86) of formulations. Majority of these formulations are indicated in disease conditions like *Arsha* (Haemorrhoids), *Kushta* (Various skin diseases), *Gulma* (Lump), *Grahani* (derangement of agni situated in *grahani*) & *Vataroga* (various diseases of vata origin); *Taila, Churna, Leha, Ghrita, Lepa & Vati* are the frequently used dosage forms.

Table 6: Number of formulations of *Bhallataka*, their indications and dosage forms

SN	Book	Number of formulations	Indications	Dosage Forms
1.	<i>Ashtangasangraha</i> ^{5]}	72	<i>Anaha, Arbuda, Arsha, Bhagandara, Galaganda, Gandamala, Graha roga, Grahani, Granthi, Gulma, Hikka, Hridroga, Jirnajvara, Kasa, Khalli, Kilasa, Krimi, Kushtha, Pandu, Pliha, Prameha, Rajayakshma, Shiroroga, Shvasa, Shwitra, Sthaulya, Vatarakta, Vatavyadhi, Vicharchika, Visha, Visuchika, Vrana, Vriddhi, Yoniroga,</i>	<i>Anjana, Arishta, Asava, Avaleha, Churna, Dhupa, Ghrita, Gutika, Kashaya, Lepa, Mantha, Taila.</i>
2.	<i>Ashtanga hridaya</i> ^{6]}	39	<i>Arsha, Ashmari, Grahani, Hridroga, Kasa, Kilasa, Krimi, Kushtha, Mutrasanga, Pandu, Pliha, Prameha, Rasayana, Shopha, Shosha, Shwasa, Tilakalaka, Twakvikara, Udara roga, Vrishya.</i>	<i>Anjana, Asava, Churna, Dhupa, Ghrita, Kashaya, Leha, Rasa, Vati.</i>
3.	<i>Bhaishajya Ratnavali</i> ^{13]}	73	<i>Ama, Agnimandya, Ajirna, Arsha, Chaturthika jwara, Grahani Gulma, Jwara, Kamala, Kasa, Krimi, Kushtha, Garashotha, Meha, Pandu, Shotha, Shwasa, Udararoga, Udavarta.</i>	<i>Asava, Avaleha, Churna, Dhupana, Ghrita, Kalka, Kwatha, Lepa, Modaka, Rasa, Taila, Vati</i>
4.	<i>Bharata Bhaishajya Ratnakara</i>	86	<i>Apasmara, Ardita, Arsha, Balaroga, Bhagna, Grahani, Gulma, Hikka-Shvasa, Hridroga, Jwara, Kasa, Kshudraroga,</i>	<i>Avaleha, Basti, Churna, Ghrita, Guda, Ksheerapaka, Kwatha, Lepa, Modaka,</i>

	a		<i>Mukharoga, Mutraghata, Netraroga, Rajayakshma, Shiroroga, Shoola, Shotha, Streeroga, Timira, Unmada, Vatarakta, Vatavyadhi.</i>	<i>Rasa, Taila, Yamaka</i>
5.	Bhava prakash a ^[17]	6	<i>Bhagna, Shiroroga, Vatarakta</i>	<i>Ghrita, Taila</i>
6.	Bhela Sam hita ^[7]	2	<i>Hridroga, Rajayakshma.</i>	<i>Ghrita, Modaka.</i>
7.	Chakra dat ta ^[10]	53	<i>Arsha, Gara visha, Grahani, Gulma, Hridaroga, Indralupta, Kasa, Kushtha, Mandagni, Pandu, Pradara, Prameha, Rasayana, Romapatana, Shotha, Shukra roga, Shwasa, Vajikarana, Valmika.</i>	<i>Anjana, Avaleha, Churna, Ghrita, Kashaya, Lepa, Taila, Vati.</i>
8.	Charaka sam hita ^[3]	27	<i>Arsha, Bhagandhara, Grahani, Gulma, Kilasa, Kitibha, Krimi, Kushtha, Mutravikara, Palitya, Pama, Prameha, Sukra dosha, Udara, Urustamba, Vatavyadhi, Visarpa, Visha, Yonivyapat.</i>	<i>Avaleha, Churna, Ghrita, Ksheerapaka, Lepa, Taila, Vati</i>
9.	Chikitsa Kalika ^[18]	4	<i>Shiroroga, Shosha, Vatavyadhi</i>	<i>Avaleha, Ghrita, Taila</i>
10.	Gadani graha ^[15]	106	<i>Agnimandya, Balya, Grahani, Gulma, Karnaroga, Kushtha, Pandu, Prameha, Shiro-roga, Shosha, Udara, Urustamba, Vatavyadhi, Vidradhi.</i>	<i>Arishta, Asava, Avaleha, Churna, Ghrita, Gutika, Kshara, Kwatha,</i>

				<i>Lavana, Lepa, Mashi, Modaka, Taila,</i>
11.	Harita Sam hita ^[8]	4	<i>Gulma, Kshaya, Shula, Vatavyadhi.</i>	<i>Ghrita, Kshara, Taila.</i>
12.	Rasa Manjari ^[37]	5	<i>Arsha, Jwara, Kushtha, Shwitra.</i>	<i>Churna</i>
13.	Rasa Tarangini ^[35]	12	<i>Amavata, Arsha, Indralupta, Jara, Jwara, Kasa, Kushtha, Panduroga, Plihavridhi, Raktapata, Shwasa, Shwitra, Urustamba.</i>	<i>Bhasma, Churna, Kashaya, Lepa, Swarasa, Taila, Vati</i>
14.	Rasa navaga ^[32]	2	<i>Arsha, Kushta</i>	<i>Avaleha, Taila</i>
15.	Rasartna Sam uchaya ^[33]	24	<i>Apachi, Arbuda, Arsha, Grahani, Granthi, Indralupta Kushtha, Netra Roga.</i>	<i>Anjana, Bhasma, Churna, Lepa, Parpati, Taila, Vati.</i>
16.	Rasendra Sara Sangraha ^[34]	10	<i>Arsha, Grahani, Kasa, Krimi, Kushtha, Sheeta Jwara, Vatarakta</i>	<i>Bhasma, Churna, Dhupa, Leha, Vati</i>
17.	Sahasrayoga ^[14]	13	<i>Antarvidradhi, Arsha, Gulma, Kamala, Kushtha, Mandagni, Pandu, Pradara, Prameha, Shwasa, Udara, Vataroga.</i>	<i>Asava, Avaleha, Churna, Ghrita, Kashaya, Lepa, Taila, Vati</i>
18.	Sharangadhara Sam hita ^[1]	13	<i>Arsha, Galaganda, Grahani, Jwara, Pradara, Shukrapravartana, Urustamba, Yonidosha.</i>	<i>Avaleha, Churna, Kalka, Kashaya, Lepa, Taila, Vati.</i>

	1]			
19.	Sushruta Samhita ^[4]	32	<i>Ajirna, Anaha, Arochaka, Arsha, Balagraha, Bhagandara, Gandamala, Gulma, Jwara, Kasa, Krimi, Kushtha, Medodosh, Nadidushtavrana, Pliha, Prameha, Sarvakushtha, Udara, Vataroga.</i>	<i>Anjana, Arishta, Avaleha, Ayaskriti, Bhasma, Churna, Ghrita, Kashaya, Kshara, Lavana, Lepa, Taila,</i>
20.	Vangasena ^[16]	79	<i>Agnivardhaka, Apachi, Arbuda, Ardita, Arsha, Atisara, Dandaptanaka, Granthi, Gulma, Hridroga, Kamala, Kandu, Kasa, Kushtha, Pandu, Pliha, Pradara, Pundarika, Sangrahani, Shotha, Shwasa, Udara Roga, Udumbara, Urustamba, Ushna Vata, Visarpa, Visha, Visphota, Vrishya, Yakrit Roga.</i>	<i>Asava, Avaleha, Churna, Dhupana, Ghrita, Kalka, Kwatha, Lepa, Modaka, Rasa, Taila, Vati.</i>
21.	Vrindamadhava ^[9]	52	<i>Apachi, Arsha, Atisara, Galaganda, Grahani, Indralupta, Kamala, Kasa, Krimi, Kshinashukra, Kubja, Kushtha, Mandagni, Nadivrana, Pandu, Pangu, Prameha, Rasayana, Sarvarogahara, Shopha, Shwasa, Shwitra, Udavarta, Vajikarana, Vamana, Vataroga.</i>	<i>Avaleha, Churna, Ghrita, Kashaya, Lepa, Modaka, Sneha, Taila, Vati.</i>
22.	Yoga Tarangini ^[36]	16	<i>Ajirna, Arsha, Ashthila, Atisara, Gudaja Roga, Gulma, Krimi, Kshaya, Kushtha, Medhya, Mutrakriccha, Pandu, Pliha, Pradara, Prameha, Sula, Udara,</i>	<i>Avaleha, Bhasma, Churna, Dhupa, Ghrita, Kashaya, Taila, Vati.</i>

			<i>Vishuchika, Vrishya.</i>	
23.	Yogaratna Karal ^[12]	47	<i>Ajeerana, Amavata, Apachi, Arsha, Gandamala, Gridhrasi, Gulma, Jwara, Krimi, Kushtha, Mandagni, Mutrakriccha, Pliha, Prameha, Rasayana, Shotha, Twakvikara, Udara, Urugraha, Urustambha, Vishuchika, Yakrita Vikara.</i>	<i>Avaleha, Churna, Dhoopa, Ghrita, Lepa, Swarasa, Taila, Vati.</i>

CONCLUSION

Bhallataka is one of the important medicinal plants having immense medicinal excellence described in most of the classical texts related to Ayurveda. More than 80 synonyms were coined for describing the morphological and pharmacological characters of *Bhallataka* in classical texts and later nighantu. As a single drug different pharmacological properties and actions attributed to different parts of *Bhallataka*. Specific collection and storage practices, purificatory procedures, antidotes and dietary habits to be followed during *Bhallataka* administration to prevent possible adverse effects are also documented in classical texts. The drug is also used as an ingredient of different compound formulations which were used in 23 different dosage forms indicated in disease conditions like *Arsha* (Haemorrhoids), *Kushtha* (Skin diseases), *Gulma* (Lump), *Grahani* (derangement of agni situated in grahani), *Prameha* (Polyuria) and *Vataroga* etc.

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