

“Standardization of *Bhallatak Avaleha*”

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Abstract:

Ayurveda is the holistic science of life. In ancient scriptures of *Ayurveda*, medicinal properties of *Bhallatak* has been described. *Bhallatak* is acclaimed as a drug of choice in the treatment of piles of vata and kapha types. *Avaleha* is the most common secondary Kalpana which has been employed in various disorders and this product is gaining popularity due to its easy administration, palatability and longer shelf life. *Bhallatak Avaleha* is a Leha kalpana mentioned in Bhaishajya Ratnavali arsha rogadhikar adhyaya. *Bhallatak Avaleha* is useful in all age groups. It is a multipurpose Ayurveda formulation mainly used in all sorts of diseases. It is also beneficial in various upper respiratory tract diseases like *kaas*, *shwaas* etc. Acharyas mention *Bhallatak Avaleha* as the best *rasayna* drug. 3 batches were prepared and analytical study was done.

Keywords: *Bhallatak*, *Ayurveda*, *Avaleha*, *Rasayna*, *Shwaas*, *Kaas*

Introduction:

The Ayurvedic system of medicine is a vast ocean of knowledge, which has been blessing the nectar of life to humanity since immemorial times. As per *Ayurveda Bhallatak* (Semi carpus

Anacardium) is included in the group of *sthavara visha* (vegetable Poison). Since ancient time it has been used as a household remedy. *Bhallatak* is acclaimed as a drug of choice in the treatment of piles of vata and kapha types. It is recommended as a *rejuvenative (rasayna)* to *kapha dosha* and *astivaha strotasa*. *Avaleha* is the most common secondary *kalpana* which has been employed in various disorders and this product is gaining popularity due to its easy administration, palatability and longer shelf life. It is a semisolid preparation of herbal drugs prepared in decoction or extracts of different herbs by adding sweetening agents like *jaggery*, sugar or sugar candy. *Avaleha* are intend to provide better drug absorption through the oral cavity along with absorption through villi.

Bhallatak Avaleha is a *Leha kalpana* mentioned in *Bhaishajya Ratnavali arsha rogadhikar adhyaya*. It is indicated in *Arsha* (*vata*, *kaphaj* type), *grahni*, *kushta* and *krimi*. It is also beneficial in various upper respiratory tract diseases like *kaas*, *shwaas* etc. Acharyas mention *Bhallatak Avaleha* as the best *rasayna* drug.

Aim:

Standardization of *Bhallatak Avaleha*.

Objectives:

- 1) Collection of raw materials required to prepare *Bhallatak Avaleha* from local market.
- 2) Authentication of raw materials.
- 3) Shodhan of Bhallatak w.r.t Rasa Tarangini (R.T. 24/477-478).
- 4) Preparation of *Bhallatak Avaleha* as per Bhaishajya Ratnavali.
- 5) Pharmaceutical study of *Bhallatak Avaleha*.
- 6) Analytical study of *Bhallatak Avaleha*.

MATERIALS & METHODS

Bhallatak Avaleha is prepared according to the reference of Bhaishajya Ratnavali.

Objectives

Preparation of *Bhallatak Avaleha* in three batches, to get the data for standard operating procedure.

The study was conducted under the following steps.

A) Collection of Raw materials:

Raw materials were collected from local market.

B) Authentication of Raw materials.

Authentication of Raw materials was done from reliable institute.

C) Shodhan of Ashudha Bhallatak.

Method 1 i) Reference: Rasa Tarangini 24/477-478

भल्लातकस्यप्रथमः शोधनप्रकारः

इष्टकाचुर्यासंयुक्तंफलंभल्लातकोधदवम्।

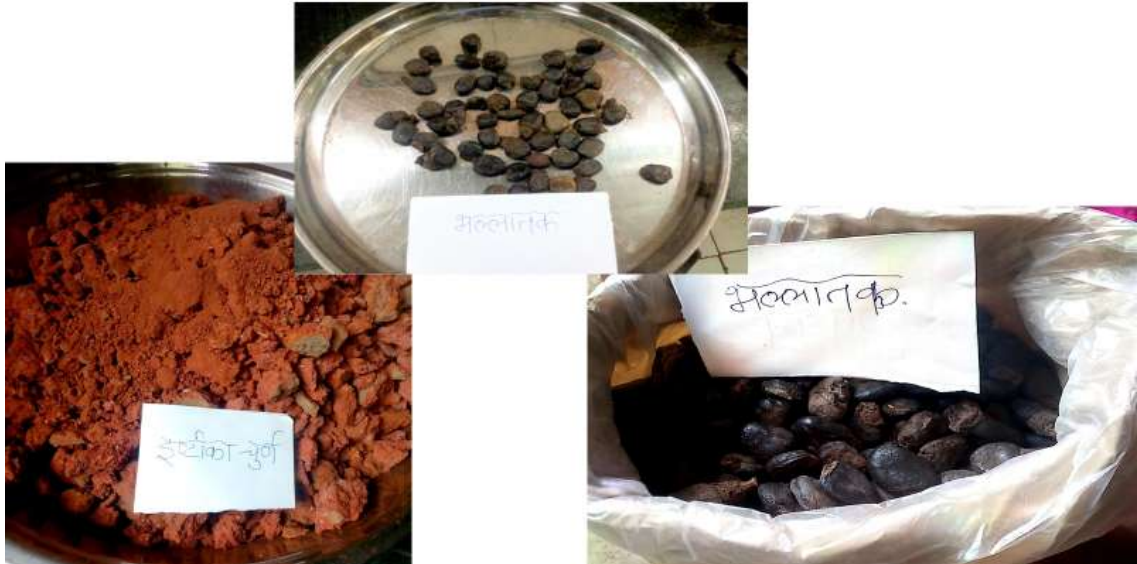
पोटलीमध्यनिहितंघर्षयेत्त्रातिवेगतः ॥४७७॥

ततः प्रतप्ततोयेनतालयेदतियत्नतः ।

इत्थंतैलत्वचाहीनंभल्लातंशुद्धिमाप्नुयात्॥४

७८॥ र.त 24/477-478

Bhallatak Shodhan with Eishtikachurna





D) Preparation of Goghrita.

Preparation of *Bhallatak Avaleha* (Batch -1)

Reference: Bhaishajya Ratnavali

भल्लातकावलेहोबृहद् -

सुपक्वभल्लातफलानिसम्यग्द्विधाविधायाढ कसंमितानि।

विपाच्यतोयेनचतुर्गुणेनचतुर्थशेषेव्यपनीयता नि॥१५७॥

पुनः

पचेत्क्षीरचतुर्गुणेनघृतांशयुक्तेनघनंयथास्या त।

सितोपलाषोडशभिः

पलैक्षविमर्धसंस्थाप्यदिनानिसप्त॥१५८॥

ततः

प्रयोज्याग्निबलेनमात्रांजयेद्विकारानखिला न्गुदोत्थान्।

कचाः सुनीलाघनकुश्रितागाः

स्युस्ताक्षर्यदृष्टिक्षशशाङ्कान्तिः ॥१५९॥

जवोहयानांबलमुत्तमंचस्वरोमयुरस्यहुताशदी प्तिः ।

स्त्रीवल्लभत्वंविविधप्रभावोनीरोगताद्वित्रिश तायुरेव॥१६०॥

नचात्रपानेपरिहार्यमस्तिनचातपेनाध्वनिमैथु नेच।

प्रयोगकालेसकलामयानांराजाधिराजक्षसायना नाम्॥१६१॥

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Ingredients :

Showing Quantity of ingredients taken

NAME	QTY
Shudha Bhallatak pulp	1 kg
Cow milk	4 litres
Cow ghee	As required
Sita (Sugar)	193 gm

1. Preparation of Bhallatak Kwath:

Type of procedure: Yantranishpiditad method

Reference: Sharangdhar Samhita madhyam khanda.2/1

Equipment's: Gas burner, Mixer, cotton cloth, stainless steel vessel, spoon and Sieve

Ingredients:

Raw materials required for preparation of Bhallatak kwath

Sr. No.	Ingredients	Quantity
1	Shudha Bhallatak fruits	1 Kg
2	Water	4 litre

Procedure : 1. Shudha Bhallatak fruits (1 kg) were weighed on a weighing scale.

2. 4 litre water and Shudha Bhallatak fruits (1 kg) were mixed and kept on a low flame to prepare decoction.

3. Heat this mixture till the amount of water gets reduced to 1/4th of original mixture; also observe the changes during heat treatment.

4. Prepared kwath was filtered using cotton cloth.

5. A fine paste of cooked Bhallatak fruits was prepared in a mixer.

6. Pass the Bhallatak paste through sieve and white cotton cloth.

7. Measure the mass of it and collect it in a vessel.

Observation:**During preparation of kwath:**

- Colour of water changed to brown.
- Small amount of froth was formed during boiling.

After preparation of kwath:

- Brownish black kwath was obtained.
- Significant smell was present.
- Shiny layer was seen on the kwath.
- Total kwath obtained was 940 ml.

Precautions: • Vessel used for preparation should be clean and dry.

- Vessel should not be covered with lid.
- Heat was given slowly so as to avoid spilling of water.

Preparation of Bhallatak Avaleha:

Equipment's: Gas burner, wide mouth stainless steel vessel with heavy bottom, ladle, Thermometer, Tongs, stirrer.

Specification of vessel 1) Type of vessel: wide mouth stainless steel vessel with heavy bottom.

Specification of heat

1. Source - Gas burner
2. Quantum of heat - Mandagni

Specification of Drava-dravya

1. Colour – white
2. Odour – Madhugandhi
3. Taste – Madhur
4. Consistency – Liquid

Specification of Kalka dravya

1. Colour – Brownish black
2. Odour - Uragandhi
3. Taste – TiktaKashaya
4. Consistency - Soft

Method of Preparation

1. In a vessel, Bhallatak pulp, Bhallatak Kwath and cow milk were added, heated till all the Kwath and milk evaporates.

2. Then frying of pulp was done with cow ghee to remove all the moisture content present in it.

3. Continuous stirring was done.

4. Preparation of Sita solution-In another vessel 193 gm of Sita was added to 700ml of water. 5. Heated and allowed the Sita to dissolve slowly in water.

6. Observe the changes during heat treatment till Sita dissolves completely.

7. Mild heat was given till Paka lakshana observed.

8. Heat was stopped, as soon as we observed Paka Lakshana.

9. Finally Sita solution was added to fried pulp.

10. While heating observe the Avaleha Siddhi Lakshana.

11. It was stirred continuously to get homogenous mixture.

12. Stop heating once you observe the Avaleha Siddhi Lakshana.

13. After cooling *Bhallatak Avaleha* was kept in air tight dry glass container for 7 days before use.

Observation:

अवलेहपरीक्षा

सुपक्वेतन्तुमत्वंस्यादवलेहोऽप्सुमज्जति।
स्थिरत्वंपिडितेमुद्रागन्धवर्णरसोद्भवः ॥

...शा .संम.ख. ८/३

During process:

- Frying of pulp was observed to see complete evaporation of water and milk.

- When all moisture is evaporated cow ghee starts segregating.
- Then, Sita solution is added to it.
- Paka lakshana were observed carefully.

After process:

1. Brownish black coloured semi solid Avaleha was obtained.
2. It was Sweet and astringent in taste.
3. When pressed between two fingers impression of fingers appear over it.
4. Thread like appearance of Avaleha was seen (Tantu matwa).
5. Avaleha sank at the bottom when added in a glass of water (Apsumajjana).

- Precautions:**
1. Continuous stirring needed throughout procedure.
 2. Mild heat should be maintained throughout procedure.

Avaleha pariksha



Organoleptic parameters for all 3 batches

Sr No.	Parameters	Batch 1	Batch 2	Batch 3
1	Appearance	Semi solid	Semi solid	Semi solid
2	Colour	Dark blackish brown	Dark blackish brown	Dark blackish brown
3	Odour	Characteristic	Characteristic	Characteristic
4	taste	Sweet and astringent	Sweet and astringent	Sweet and astringent

Analytical result for all the 3 batches of Avaleha:

Test	Result Batch A	Batch B	Batch C
Appearance	Semisolid	Semisolid	Semisolid
Colour	Dark blackish brown	Dark blackish brown	Dark blackish brown
Odour	characteristic	characteristic	characteristic
Taste	Sweet & astringent	Sweet & astringent	Sweet & astringent
Loss on drying	10.63%	10.58%	9.46%
Ash	2.97%	2.21%	2.68%
Acid insoluble ash	0.12%	0.08%	0.19%
Specific gravity	2.93	2.95	2.65
Sugar	26%	25.2%	25.0%
pH	5.0	4.8	4.6
Fat content	9.88%	10.05%	10.72%
Test for heavy metal	Complies	Complies	Complies
Total Solid content	62.67%	62.67%	6.05%
Reducing sugar	19.62%	18.76%	19.22%
Non reducing sugar	7.22%	6.98%	4.16%
Hexane soluble extract	7.25%	6.67%	7.05%
Alcohol soluble extract	24.56%	22.32%	19.17%
Water soluble extract	17.58%	16.64%	17.09%

Discussion:

Raw ingredients were collected and authenticated from reliable sources. Cow milk was collected from local cow shelter area and goghrita was prepared.

Shodhan of Bhallatak was done as mentioned in rasa Tarangini 24/477-478. Grahyaagrahyatwa pariksha was done before selecting Bhallatak fruits for Shodhan purpose. Fruits which sank in

water were used for Shodhan purpose while fruits that floated were discarded. Eishtika churna shodhit Bhallatak has 8.64 % of Etheral soluble extract. Ashudha Bhallatak had 16.52 % of Etheral soluble extract. As Bhallatak is vegetable irritant poison and its oil is very harmful if not handled properly. Very low percentage of oil was found in Eishtika churna shodhit Bhallatak so it was safe hence; was used for preparing *Bhallatak Avaleha*.

Prepared *Bhallatak Avaleha* cleared all the classical siddhi lakshana w.r.t Avaleha.

It was sweet and astringent in taste and had characteristic odour.

Physico chemical analysis was done for all the 3 batches of *Bhallatak Avaleha*.

Prepared *Bhallatak Avaleha* was Dark blackish brown in colour and had semi-solid appearance.

Bhallatak Avaleha was found to be free from microbial and fungal contamination.

CONCLUSIONS:

Bhallatak Avaleha is a Leha kalpana mentioned in Bhaishajya Ratnavali indicated for oral use in Arsha, grahni, kushta and various upper respiratory tract diseases like kaas, shwaas etc. It is a multipurpose Ayurveda formulation mainly used in all sorts of diseases. So in this study, the preparation, standardization of *Bhallatak Avaleha* and its anti-microbial activity was carried out. The conclusions are drawn on the basis of observation during present study.

1. Three batches of *Bhallatak Avaleha* were prepared to develop Standard Operating Procedure.

2. While doing Shodhan of Raw material like Bhallatak significant changes were observed in organoleptic and physico-chemical parameters.
3. Precaution has to be taken while handling Bhallatak as it may lead to contact dermatitis and blister formation on skin.
4. Eishtika churna shodhit Bhallatak showed 8.64 % of oil in Etheral soluble extract test. While doing Shodhan of Bhallatak with Eishtika churna (Brick powder) maximum loss of oil i.e 134 gm was noted and it was due to adsorption by Eishtika churna.
5. Brownish black kwath with significant smell and shiny layer over it was obtained.
6. Dark blackish brown Avaleha with sweet and astringent taste was obtained. Total yield obtained was B1- 1240 gm, B2-1257 gm, B3- 1232 gm.
7. All the classical tests like Tantumatwa, pidite mudra, apsumajjana, sthiratwa and gandhavarana rasodhbhav for *Bhallatak Avaleha* was positive which indicates *Bhallatak Avaleha* is prepared properly as mentioned in the text and had achieved expected qualitative parameters as per classical texts.
8. All the moisture content present in the pulp has to be evaporated so that product can have longer shelf life.
9. The mean for loss of drying was 10.22% which indicates less chance of getting infected.
10. The mean value of Acid insoluble ash is 0.13%, which indicates almost

maximum bioavailability of *Bhallatak Avaleha*.

11. The mean value of Total Ash is 2.62. It illustrates the quality as well as purity of formulation.
12. The mean pH was 4.8, which is acidic. It may be due to Bhallatak seeds and chemical constituent present in formulation.
13. pH of oral cavity is acidic, due to continuous secretion of saliva. The presence of salivary amylase and lipase in oral cavity helps in the assimilation of carbohydrates and lipophilic ingredients such as Ghrita, Taila in Avaleha.
14. In analytical study prepared *Bhallatak Avaleha* was tested for organoleptic parameters and physico-chemical parameters.

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Conflict of Interest: Non

Source of funding: Nil

Cite this article:

“Standardization of Bhallatak Avaleha”

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Ayurline: International Journal of Research In Indian Medicine 2020;4(5): 01-08