WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
Coden USA: WJPRAP Impact Factor 8.63
Volume 15, Issue 18, 1045-1055. Review Article ISSN 2277–7105

PHARMACEUTICO – ANALYTICAL STUDY OF ARBUDAHARA LEPA

***[1]Dr. Megha Viraktamath, [2]Dr. Ravindra Angadi, [3]Dr. Radhika Ranjan Geethesh P., [4]Dr. Ashok Kumar B. N., [5]Dr. Sushmitha V. S.**

*[1]PG Scholar, [2]Professor and HOD, [3,4]Professor, [5]Assistant Professor,
Department of PG and Ph.D. Studies in Rasashatra and Bhaishajya Kalpana'shri Dharmasthala Manjunatheshwara College of Ayurveda Hospital and Research Centre Kuthpady Udupi, Karnataka -574118.

Article Received on 15 August 2026,
Article Revised on 05 Sept. 2026,
Article Published on 17 Sept. 2026,
https://doi.org/10.5281/zenodo.22809434

***Corresponding Author**
Dr. Megha Viraktamath
PG Scholar, Department of PG and Ph.D. Studies in Rasashatra and Bhaishajya Kalpana'shri Dharmasthala Manjunatheshwara College of Ayurveda Hospital and Research Centre Kuthpady Udupi, Karnataka - 574118.

How to cite this Article: *[1]Dr. Megha Viraktamath, [2]Dr. Ravindra Angadi, [3]Dr. Radhika Ranjan Geethesh P., [4]Dr. Ashok Kumar B. N., [5]Dr. Sushmitha V. S. (2026). Pharmaceutico – Analytical Study of Arbudahara Lepa. World Journal of Pharmaceutical Research, 15(18), 1045–1055.

ABSTRACT

Introduction: Arbudahara lepa is mentioned in Sahasrayogam, Arbuda Chikitsa, indicated for Arbuda. Aim-To prepare Arbudahara lepa and analyse it by using various physiochemical parameters. Materials and Methods-Arbudahara lepa contains the drugs such as Citraka, Chirabilva, Sringavera, Punarnava, Langali, Pippali, Lodhra, Maricha, Danti, Panchalavana and Gomutra as a bhavana dravya. All the drugs were taken in equal quantity then Churna is prepared as per standard operative procedure and pharmaceutico analytical parameters were tested and recorded. Results-The physico chemical parameters of Arbudahara lepa were as follows pH-5,25, Loss on drying – 53.87±0,02, Total ash – 4.13±0.04, Acid insoluble ash – 0.53±0.01, Water soluble ash – 4.04±0.05, Spreadability – 10.2 and TLC green band at 254 nm. Discussion-The physicochemical parameters of Arbudahara Lepa were within acceptable limits, indicating good quality and uniformity of the formulation. The slightly acidic pH (5.25) suggests compatibility with the normal skin pH, making it suitable for topical application. The ash values, loss on drying, spreadability, and characteristic TLC profile can serve as preliminary quality control parameters for the standardization and identification of the

formulation. Conclusion- Arbudahara lepa was standardised as per API Guidelines and result of this study can be taken as its preliminary standard profile.

KEYWORDS: Arbudahara lepa, Standardization, Arbuda.

INTRODUCTION

Standardizing the drugs and formulation establishes a framework for assessing their quality and safety. Formulation quality was evaluated using organoleptic and physical characteristics, as well as qualitative and quantitative analysis. Arbudahara lepa is mentioned in Sahasrayogam indicated in Arbuda.[1]

The Efficacy of formulation depends on ingredients present in it. In this study we have standardized it based on API Guidelines.

AIM: To prepare Arbudahara lepa as per Sahasrayogam and analyse it using various physicochemical parameters.

MATERIALS AND METHODS

The raw drugs were obtained from the GMP Certified SDM Ayurvedic Pharmacy, Kuthpady, Udupi. Karnataka.

Ingredients of Arbudahara lepa are tabulated in Table 1 and 2 and pictures are depicted in Figures 1-15.

Table 01: Ingredients of Arbudahara lepa.

Herbal Drugs

Drug Name	Botanical Name	Part used	Ratio
Citraka[2]	*Plumbago zeylanica*	*Root*	1 part
Chirabilva[3]	*Holoptelea intergrifolia*	*Bark*	1 part
Sringavera[4]	*Zingiber officinale*	*Rhizome*	1 part
Punarnava[5]	*Boerhavia diffusa*	*Root*	1 part
Langali[6]	*Gloriosa superba*	*Rhizome*	1 part
Pippali[7]	*Piper longum*	*Root*	1 part
Lodhra[8]	*Symplocos racemosa*	*Bark*	1 part
Maricha[9]	*Piper nigrum*	*Fruit*	1 part
Danti[10]	*Baliospermum montanum*	*Root*	1 part

Table 02: Panchalavana and Bhavana Dravya.

Drug name	Ratio
Saindhava lavana	1 part

Sauvarchala lavana	1 part
Vida lavana	1 part
Romaka lavana	1 part
Samudra lavana[11]	1 part
Gomutra[12]	Q.S.

Fig. 01: Pippali

Fig. 02: Shunti.

Fig. 03: Maricha

Fig. 04: Punarnava

Fig. 05: Lodhra

Fig. 06: Chitraka

Fig. 07: Chirabilva.

Fig. 08: Danti.

Fig. 09: Langali.

Fig. 10: Saindhava lavana.

Fig. 11: Sauvarchala lavana.

Fig. 12. Vida lavana.

Fig.13: Romaka lavana.

Fig.14: Samudra lavana.

Fig. 15: Gomutra.

Method of preparation of Arbudahara lepa[1,13]

At first Khalva yantra was cleaned and dried. Above mentioned dry drugs were powdered first individually in a khalvayantra, powdered finely and sieved through 100 number mesh sieves and collected. Equal quantities of powders of individual drugs are taken in a vessel for the preparation of lepa. All the drugs are taken in equal quantity in a clean Khalvayantra and mardana is done for certain period of time to make it into a homogeneous mixture. To this mixture sufficient quantity of Gomutra was added. 7 bhavana done until the appearance of bhavana siddhi lakshana. The lepa was brown color with characteristic smell. It is stored in airtight glass bottle.

Table 03: The Analytical parameters done for Arbudahara lepa.[14]

Organoleptic characters	Physico chemical analysis	Chromatography
Colour Taste Consistency	pH Particle size Loss of drying at 105° Total ash Water soluble ash Acid insoluble ash	HPTLC

1. **Organoleptic characters:** It was done by estimating its color, smell, taste, consistency etc. using one's sense organs.
2. **Physicochemical Analysis**

Practical No. 1.

Loss on drying (LOD) at 105°C: This method determines the moisture content of a sample under specific conditions. Sometimes, it also accounts for the loss of any volatile substances from the sample.

Procedure: A clean, dry tarred evaporating dish was placed on the weighing machine, and the scale was zeroed. 1g of the sample was weighed in the dish. The sample was dried in a hot air oven for 5 hours at 105°C. After drying, the dish was cooled in a desiccator before it was weighed again. The drying process was continued until the difference between successive weights was no more than 0.01g. The sample was always cooled in the desiccator before weighing. Finally, the percentage of moisture was calculated based on the initial weight of the sample.

Practical No. 2.

Total Ash: This process measures the total amount of material left after incineration, which represents the inorganic material of a drug. It includes both physiological ash, derived from the plant material, and non-physiological ash, which comes from sources other than the plant.

Procedure: 2g of the sample was weighed in a tared platinum crucible. The sample was incinerated at a temperature not exceeding 450°C until all carbon was burned off and only ash remained. The percentage of ash was calculated based on the original weight of the sample.

Practical No. 3.

Acid insoluble ash: Acid insoluble ash is the residue left after boiling total ash with dilute hydrochloric acid (HCl) and then incinerating the remaining insoluble material. It represents non-physiological ash, such as sand or soil.

Procedure: 25 ml of dilute HCl was added to the crucible containing the total ash, and the mixture was boiled. The insoluble residue was filtered using ashless filter paper, and the residue was washed with hot water until the filtrate became neutral. The filter paper with the insoluble matter was transferred back into the original crucible. The filter paper was dried on a hot plate and then ignited in a furnace until the weight remained constant. The residue was cooled in a desiccator for 30 minutes, then immediately weighed. The percentage of acid-insoluble ash was calculated based on the weight of the air-dried sample.

Practical No. 4.

Water Soluble Ash: Water soluble ash, referred to as *Kshara* in *Ayurveda*, represents the residue from plant material that dissolves in water. It is determined by measuring the

difference in weight between the total ash and the residue left after treating the ash with water.

Procedure: 25 ml of water was added to the total ash, and the mixture was boiled for 5 minutes. The insoluble residue was filtered out using ashless filter paper, and the residue was washed with hot water. The filter paper with the insoluble residue was ignited in a furnace at a temperature not exceeding 450°C for 15 minutes. The weight of the insoluble residue was subtracted from the total ash weight. The difference in weight represented the water-soluble ash, which was calculated with reference to the air-dried sample.

Practical No.5.

Spreabability: This method is used to determine the how easily and evenly a medicated paste / lepa can be applied to the skin. It ensures the formulation is user- friendly and clinically effective by balancing thickness with spreadability.

Procedure: The Spreadability of bases were determined by keeping the sample between two Plexiglas at 37°C, it is based on linearity and spreading diameter measurements. Viscosity and spreading diameter is independent of derivative used. 1gm of the lepa was placed between the Plexiglas plate and known wt was kept upon it and was then measured the diameter of spread and was calculated using the formula. S is the spreadability of the gel formulation, m is the weight(g) tied on the upper plate, and l is the length(cm) of the glass plates, and t is the time taken(s) for the plates to slide the entire length.

Practical No. 6.

Determination of pH: pH is defined as the negative logarithm of H^+ ion concentration.

Procedure: Preparation of buffer solutions: One tablet of pH 4, 7, and 9.2 was dissolved in 100 ml of distilled water.

Determination of pH: 1g of the sample was taken, and 100ml of distilled water was added. The mixture was stirred well and then filtered. The filtrate was used for the experiment. The instrument was switched on, and 30 minutes were allowed for the pH meter to warm up. The pH 4 solution was first introduced, and the pH was adjusted to 4.02 at a room temperature of 30°C using the knob. The pH 7 solution was then introduced, and the pH meter was adjusted to 7 using the knob. The pH 9.2 solution was introduced, and the pH reading was checked

without adjusting the knob. The sample solution was then introduced, and the reading was noted. The test was repeated four times, and the average reading was taken as the final result.

Practical No. 7.

HPTLC: High-performance thin-layer chromatography (HPTLC) is an advanced form of thin-layer chromatography (TLC), based on the principle of adsorption for the separation of components. HPTLC gives significantly greater resolution and more effective separation of components compared to TLC.

Procedure: 1g of *Arbudahara lepa* was suspended in 10 ml of methanol and kept for cold percolation for 24 hours, then filtered. 3 µl, 6 µl, and 9 µl of the resulting sample were applied to pre-coated silica gel F_{254} on aluminium plates as bands with a width of 7 mm using the Linomat 5 TLC applicator. The plate was developed in a mobile phase consisting of Butanol: Acetic acid: Water: Ammonia (3.0: 1.0: 1.0: 1.0). The developed plates were visualized under short UV and long UV light, then derivatized with anisaldehyde-sulfuric acid reagent. The plates were scanned under UV at 254 nm, 366 nm, 540 nm, and 620 nm. Rf values, spot colors, and densitometric scans were recorded.

OBSERVATION AND RESULT

Pharmaceutical study Observation during Lepa preparation

Continuous trituration is required for making lepa fine powder. The lepa took nearly 20minutes of trituration to be a homogeneous mixture. For each bhavana sufficient quantity of Gumutra was added. Total 7 bhavana given to get bhavana siddhi lakshana. The combination was brown in color with emitting a characteristic color.

Table 4: Results of Pharmaceutical study of Arbudahara lepa.

Parameter	
Quantity of Raw drugs	10gm each
Quantity of Fine powder	100gm
Quantity of *Gomutra*	Q.S.
Time taken for *Bhavana*	6 hours
Total quantity obtained after *bhavana*	116 gm

Table 5: Organoleptic Characters.

Appearance	Powder form
Color	Brown
Odor	Characteristic smell
Taste	Bitter
Consistency	Paste form

Table 6: Analytical study results.

Parameter	*Arbudahara lepa*
Loss on drying	53.87±0.02
Total Ash	4.13±0.04
Acid Insoluble Ash	0.53±0.01
Water soluble Ash	4.04±0.05
Spreadability	10.2
Ph	5.25

Table 7: Rf value of Arbudahara lepa.

Short UV	Long UV	After derivatization
-	0.15(F.blue)	-
-	0.25(F.blue)	-
-	0.35 (F. blue)	-
-	0.44 (F. blue)	-
-	0.51(F.blue)	-
0.55(Green)	0.55(F. blue)	-
0.60(Green)	-	0.60(Purple)
-	0.65(F.blue)	-
-	0.73(F.blue)	-
0.76(Green)	-	-
-	-	0.81(Purple)
-	0.86(F.blue)	-

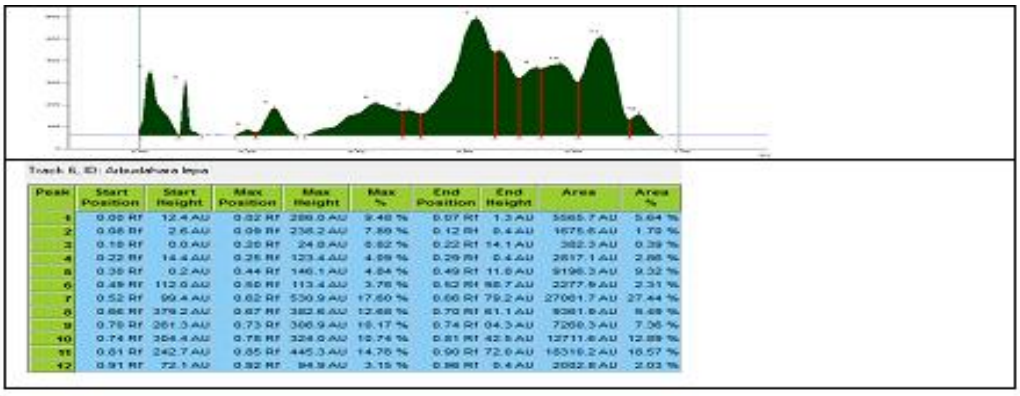

Fig. 16: Arbudahara lepa, Rf - Rf 0.60±0.01(38.47%, Picroside I), 0.43±0.01 (27.43%, Picroside II).

DISCUSSION

Arbudahara lepa is one among them stated in the book *Sahasrayogam*. It is indicated in *Arbuda*. It is Herbo-mineral preparation. Its ingredients are *Chitraka, Chirabilva, Sringavera, Punarnava, Langali, Pippali, Lodhra, Maricha, Danti, Panchalavana,* and *Gomutra.* The pharmaceutical study of *Arbudahara lepa* involved two steps First is preparation of *churna* by pounding the *Chitraka, Chirabilva, Sringavera, Punarnava, Langali, Pippali, Lodhra,*

Maricha, Danti and *Panchalavna* into fine powder (sieve no. 100) And taken in equal quantity and mixed to get the homogeneous mixture. In second step, to the homogeneous mixture *Gomutra*(Q.S) is added and trituration is done until to get *bhavana siddhi lakshana*.

The Pharmaceutical study focused on standardization to ensure safety, stability, and efficacy. The ingredients and ratio are taken as per reference of *Sahasrayogam*. *Gumutra* was used as a *bhavana Dravya*. *Gomutra* is described as possessing *Katu*, *Tikshna*, *Ushna*, and *Lekhana* properties, which are believed to help in the removal of accumulated toxins, correction of impaired metabolism, and reduction of abnormal tissue growth. These actions may contribute to its role in conditions resembling *Arbuda* (cancer). *Gomutra* is also considered to possess *Deepana* and *Pachana* effects, which improve digestion and metabolism, thereby supporting tissue health and immunity. The physicochemical parameters of Arbudahara Lepa were within acceptable limits, indicating good quality and uniformity of the formulation. The slightly acidic pH (5.25) suggests compatibility with the normal skin pH, making it suitable for topical application. The ash values, loss on drying, spreadability, and characteristic TLC profile can serve as preliminary quality control parameters for the standardization and identification of the formulation.

CONCLUSION

The Pharmaceutical preparation of *Arbudahara lepa* was carried out according to classical ayurvedic principles, ensuring uniformity and reproductivity of the formulation. The classically mentioned *lepa siddhi lakshanas* such as *Sama mardita, Suksha kalka*, easy spreadability, characteristic odor and color of the ingredients, were observed and appreciated, these parameters indicates proper pharmaceutical processing and satisfactory quality of the formulation. The Analytical study, aimed to evaluate the quality and efficacy of *Arbudahara lepa*. The analytical tests conducted on *Arbudahara lepa* reveled that the sample was within acceptable limits. By confirming that the samples meet the necessary standards, this indicates that *Arbudahara lepa* is of adequate quality and can be used as intended.

REFERENCES

1. Rao G P, editor, (1st ed). Sanskrit text with English Translation and Prabhakar Vyakhyam on Sahasrayogam. Lepa Yoga Prakaranam: Chapter 12, Arbudahara Lepa: New Delhi: Chaukhamba Publications, 2016; 321.
2. Lucas D Shanth kumar, Dravyaguna Vijnana Vol.II Study of Dravya-Materia Medica, Volume II. Varanasi:Chaukhambha Visvabharati, 2015; 244-247.

3. Lucas D Shanth kumar, Dravyaguna Vijnana Vol.II Study of Dravya-Materia Medica, Volume II. Varanasi:Chaukhambha Visvabharati, 2015; 661.
4. Lucas D Shanth kumar, Dravyaguna Vijnana Vol.II Study of Dravya-Materia Medica, Volume II. Varanasi:Chaukhambha Visvabharati, 2015; 414.
5. Lucas D Shanth kumar, Dravyaguna Vijnana Vol.II Study of Dravya-Materia Medica, Volume II. Varanasi:Chaukhambha Visvabharati, 2015; 350.
6. Lucas D Shanth kumar, Dravyaguna Vijnana Vol.II Study of Dravya-Materia Medica, Volume II. Varanasi:Chaukhambha Visvabharati, 2015; 689.
7. Lucas D Shanth kumar, Dravyaguna Vijnana Vol.II Study of Dravya-Materia Medica, Volume II. Varanasi:Chaukhambha Visvabharati, 2015; 362,366.
8. Lucas D Shanth kumar, Dravyaguna Vijnana Vol.II Study of Dravya-Materia Medica, Volume II. Varanasi:Chaukhambha Visvabharati, 2015; 597.
9. Lucas D Shanth kumar, Dravyaguna Vijnana Vol.II Study of Dravya-Materia Medica, Volume II. Varanasi:Chaukhambha Visvabharati, 2015; 358.
10. Lucas D Shanth kumar, Dravyaguna Vijnana Vol.II Study of Dravya-Materia Medica, Volume II. Varanasi:Chaukhambha Visvabharati, 2015; 392.
11. Shubha M, Ravi Rao, editor. Ashtanga Hridaya(Sutrasthana), Annaswaroopa Vijnaneeyam Adhyaya, Chapter 6, Lavana varga, p.177. Varanasi: Chaukhambha Orientalia, 2021. Reprint 2023.
12. Bhavamishra. Bhavaprakasha Nighantu (Indian Materia Medica). Chunekar KC, commentator; Pandey GS, editor. Revised and enlarged ed. Varanasi: Chaukhambha Bharati Academy; 2010. Chapter 18, Mutravarga, 761.
13. Parashuram Shastri, editor. Sharangadhara Samhita. Chapter 11, Lepa Vidhi. Varanasi: Chaukhamba Surbharati Prakashan; [year of publication] 355.
14. Honward S V, A hand book of standardization of ayurvedic formulations, procedures and tests required for standardization of ayurvedic drugs and formulations, chapter 4. Varanasi: Chaukambha Orientalia, 2012; 88-90.