International Journal of Pharmaceutical research and Applications
Volume 11, Issue 5, Sep.-Oct.2026,pp:1250-1255 www.ijprajournal.com ISSN:2456-4494

Pharmaceutical Study of Kharjuradi Leha and Its Modification into Khandapaka

Dr. Nandakishor A.R.[1], Dr. Tarika S. Bangera[2]

[1] *P.G. Scholar, Department of P.G. Studies in Rasashastra and Bhaishajya Kalpana, Alva's Ayurveda Medical College, Moodubidire, Dakshina Kannada, Karnataka, India*

[2] *Associate Professor, Department of P.G. Studies in Rasashastra and Bhaishajya Kalpana, Alva's Ayurveda Medical College, Moodubidire, Dakshina Kannada, Karnataka, India*

Date of Submission: 16-10-2026 Date of Acceptance: 30-10-2026

Abstract

Background: Kharjuradi Leha is described in Chakradatta, Kasa Prakarana. The dissertation associates the formulation with Kasa, particularly Paittika Kasa. The present work documents preparation of the classical semisolid Leha and its modified granular form, Khandapaka.

Objective: To record the ingredients, processing sequence, Paka Siddhi observations, organoleptic characteristics and batch yield of both dosage forms.

Methods: Ingredients were cleaned and processed; Kashaya was prepared by reduction and filtration, followed by heating with Khanda Sharkara and addition of Pippali Churna. Madhu was incorporated into Leha after cooling, whereas it was omitted from Khandapaka, which was further concentrated and sieved.

Results: The Leha batch required 4 h 25 min and yielded 410 g; Khandapaka required 3 h 51 min and yielded 300 g. Leha was brown and semisolid, while Khandapaka was greyish-brown and granular.

Conclusion: The recorded batches yielded distinguishable dosage forms.

Keywords: Kharjuradi Leha; Khandapaka; Avaleha; pharmaceutical preparation; Kashaya; Paka Siddhi.

I. Introduction

Avaleha[1] is a semisolid dosage form used in Ayurvedic pharmaceutics. It is commonly prepared by concentrating a liquid preparation such as Kashaya with a sweetening agent and incorporating prescribed powdered ingredients at an appropriate stage. The consistency obtained during heating is important because it influences handling, palatability, dose administration and storage. Classical descriptions discuss stages of Paka Siddhi, while the practical endpoint is assessed through a combination of temperature, thread formation and physical consistency.

Kharjuradi Leha[2] is cited in Chakradatta under Kasa Prakarana, and the dissertation identifies Kasa—particularly Paittika Kasa—as the traditional therapeutic context. A Leha is convenient to administer by licking, but its semisolid nature can make handling, transport and uniform portioning more difficult than with a dry or granular preparation. A granular Khandapaka[3] may offer practical advantages in measuring and handling; however, such advantages should be demonstrated through appropriate testing and should not be interpreted as proof of improved clinical efficacy.

II. Aim and objectives

Aim: To document the pharmaceutical preparation of Kharjuradi Leha and its modification into Kharjuradi Khandapaka.

- To list the ingredients and quantities recorded for preparation.
- To describe preparation of Kashaya and the subsequent heating and incorporation stages.
- To document processing duration, recorded Paka Siddhi temperatures and final yield.
- To compare the organoleptic characteristics and physical consistency of the two batches.

International Journal of Pharmaceutical research and Applications
Volume 11, Issue 5, Sep.-Oct.2026,pp:1250-1255 www.ijprajournal.com ISSN:2456-4494

III. Materials and methods

3.1 Ingredients

Ingredient	Recorded quantity	Role / note
Kharjura	25 g	Principal ingredient
Draksha	25 g	Principal ingredient
Laja	25 g	Principal ingredient
Pippali Churna	25 g	Prakshepaka
Ghrita	75 mL in formula	Batch-level quantity requires verification
Madhu	75 mL for Leha	Added after cooling; omitted in Khandapaka
Jala	1.2 L	For preparation of Kashaya
Khanda Sharkara	300 g	Sweetening and concentration component

3.2 Preparation of Kashaya[4]

The ingredients were cleaned and coarsely pounded before extraction. Water was added according to the recorded 16-part ratio and the mixture was reduced to one-fourth. The liquid was then filtered, with the retained pulp kept for subsequent processing. The recorded volume of Kashaya used in each preparation was 300 mL.

3.3 Preparation of Kharjuradi Leha[5]

The retained pulp was processed with Ghrita. Kashaya and Khanda Sharkara were combined and heated with continuous stirring. Heating was continued while observing the consistency and the recorded Paka Siddhi stages. Pippali Churna was added as Prakshepaka. After the mass cooled to Swanga Sheeta, Madhu was incorporated and the preparation was mixed. The finished product was stored in an airtight container. The precise order, time and temperature of each addition should be checked.

3.4 Preparation of Kharjuradi Khandapaka[6]

Khandapaka was prepared using the corresponding process, with Madhu omitted. Heating was continued further to obtain the concentrated granular endpoint recorded in the thesis. After cooling, the material was passed through sieve No. 44. The omission of Madhu and the additional concentration to a granular consistency are the main procedural differences documented between the two batches. The exact endpoint should be reported alongside the laboratory record because temperature readings alone may not fully describe the consistency of a sugar-rich preparation.

3.5 Parameters recorded

The pharmaceutical observations included preparation date and duration, volume of Kashaya used, final yield, calculated yield and loss, colour, odour, taste, consistency and Paka Siddhi temperature. The yield percentages below are reproduced from the thesis summary and should be checked against the original calculation basis and starting mass.

IV. Results

Parameter	Kharjuradi Leha	Kharjuradi Khandapaka
Batch date	19/01/2026	21/01/2026
Preparation time	4 h 25 min	3 h 51 min
Kashaya used	300 mL	300 mL
Final yield	410 g	300 g
Yield recorded	58.57%	42.86%
Loss recorded	41.43%	57.14%
Colour	Brown	Greyish-brown
Odour	Characteristic of ingredients	Characteristic / mild woody
Taste	Madhura–Katu	Madhura–Katu

International Journal of Pharmaceutical research and Applications
Volume 11, Issue 5, Sep.-Oct.2026,pp:1250-1255 www.ijprajournal.com ISSN:2456-4494

Consistency	Semisolid	Solid / granular

4.1 Paka Siddhi observations

Recorded stage	Leha	Khandapaka
One-thread stage	97°C	98°C
Two-thread stage	100°C	110°C
Three-thread / granular endpoint	Not separately recorded	112°C

V. Discussion

The batches differed in duration, final mass and physical consistency. The Leha preparation required 4 h 25 min and yielded 410 g, whereas the Khandapaka preparation required 3 h 51 min and yielded 300 g.

The semisolid consistency of Leha is consistent with the intended Avaleha dosage form. The granular Khandapaka was obtained by omitting Madhu and continuing concentration until the recorded granular endpoint, followed by sieving. The difference in appearance—from brown to greyish-brown—and consistency provides a practical description of the modified product. Organoleptic observations are useful for routine batch description but are subjective and do not establish chemical equivalence, therapeutic equivalence or shelf life.

Paka Siddhi is a critical process-control point because heating affects concentration and the physical behaviour of the mass. The discrepancy in Ghrita quantity is likewise important because an unverified ingredient quantity reduces reproducibility.

The modified form may be easier to portion, sieve and transport than a semisolid mass. These are plausible pharmaceutical considerations, not outcomes directly established by the current descriptive batch data. To support claims about handling or storage, further work should assess particle-size distribution, flow, moisture uptake, packaging compatibility, stability under defined conditions and dose uniformity.

VI. Limitations

- The study records a limited number of laboratory batches; repeatability and between-batch variability were not established.
- Long-term and accelerated stability studies were not performed, so shelf life cannot be concluded.
- No clinical comparison was undertaken.
- Large-scale manufacturing feasibility and packaging performance were outside the scope of the recorded work.

VII. Conclusion

The thesis records the preparation of Kharjuradi Leha and its modified granular form, Kharjuradi Khandapaka. The Leha batch was brown and semisolid, while Khandapaka was greyish-brown and granular. The batches differed in preparation duration and final yield. These observations document the feasibility of producing two distinct physical forms under the recorded laboratory conditions. Confirmation of the ingredient quantity and temperature sequence, followed by replicated batches and stability testing, is required before firm process specifications or shelf-life claims can be made.

References

[1]. Sharma PV, editor and translator. Cakradatta: a treatise on principles and practices of Ayurvedic medicine. Varanasi: Chaukhambha Orientalia; 1994.
[2]. Sharma S. Rasatarangini. Shastri K, editor. 11th ed. Delhi: Motilal Banarsidass; 1979.
[3]. Government of India, Ministry of Health and Family Welfare. The Ayurvedic Pharmacopoeia of India. New Delhi: Department of Indian Systems of Medicine and Homoeopathy.
[4]. World Health Organization. Quality control methods for herbal materials. Geneva: World Health Organization; 2011.
[5]. Sharma S. Rasatarangini. Shastri K, editor. 11th ed. Delhi: Motilal Banarsidass; 1979.
[6]. Government of India, Ministry of Health and Family Welfare. The Ayurvedic Pharmacopoeia of India. New Delhi: Department of Indian Systems of Medicine and Homoeopathy.

International Journal of Pharmaceutical research and Applications
Volume 11, Issue 5, Sep.-Oct.2026,pp:1250-1255 www.ijprajournal.com ISSN:2456-4494

Photographs of pharmaceutical preparation (Kharjuradhi Leha)

Ingredients taken – Pounded to coarse powder form and kept for boiling (Kashaya preparation).

Filteration of pulp from reduced kashaya and then adding obtained kashaya to the pulp fried in ghrita.

Adding of khanda sharkara and checking of paka siddhi lakshanas.(Leha preparation).

Adding pippali churna as prakshepa churna and mixed well to obtain the final product.

International Journal of Pharmaceutical research and Applications
Volume 11, Issue 5, Sep.-Oct.2026,pp:1250-1255 www.ijprajournal.com ISSN:2456-4494

Photographs of pharmaceutical preparation (Kharjuradhi Khandapaka)

Ingredients taken – Pounded to coarse powder form and kept for boiling (Kashaya preparation).

Filteration of pulp from reduced kashaya and then adding khandasharkara to the obtained kashaya.

Phenodgama and checking of pakasiddhi lakshanas .(Leha to Khandapaka stage).

International Journal of Pharmaceutical research and Applications
Volume 11, Issue 5, Sep.-Oct.2026,pp:1250-1255 www.ijprajournal.com ISSN:2456-4494

Turning into granular form and obtained final product.