

Moisture content Determination of Kokilaksha churna (*Asteracantha longifolia* Nees) . Using Loss on Drying Method: A quality control Approach

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Abstract

Background: Kokilaksha (*Asteracantha longifolia* Nees) is an important Ayurvedic medicinal plant used for its Mutrala, Shothahara, Rasayana, and Balya properties. Moisture content is a critical quality parameter affecting stability, microbial safety, and therapeutic safety, and therapeutic efficacy of powdered herbal drugs.

Objective: To determine the moisture content of Kokilaksha Churna using the Loss on Drying (LOD) method.

Methods: The powdered drug was procured, authenticated, and analyzed in the Quality Control Laboratory of Parul Institute of Ayurveda. LOD was performed at 110 degree Celsius until constant weight was achieved.

Results: The mean moisture content of Kokilaksha Churna was calculated to be 8.0% confirming proper drying and quality.

Conclusion: Kokilaksha churna meets quality standards for moisture content. Routine moisture analysis is recommended to ensure stability, safety, and therapeutic efficacy.

Introduction:

Kokilaksha (*Asteracantha longifolia* Nees.) is a classical Ayurvedic medicinal plant belonging to the Acanthaceae family. It is traditionally indicated in urinary disorders (*Mutrakrichra*), Kidney stones (*Ashmari*), metabolic disorders (*Prameha*),

inflammation (*Sotha*), and seminal weakness (*Shukra-kshaya*).^[1,2]

Ayurvedic properties of Kokilaksha include Madhura and Tikta rasa, Sheeta virya, and Madhura vipaka with pharmacological actions such as Mutrala, Balya, Rasayana and Vrishya.^[1] Phytochemically, Kokilaksha contains flavonoids, saponins,

sterols, and alkaloids, contributing to its diuretics, anti-inflammatory, antioxidant, and nephroprotective activities. [3,4]

Moisture content is a critical factor affecting stability, microbial safety, and physiochemical properties (flowability, compressibility) of powdered herbal drugs. [5,6] Excess moisture can promote hydrolysis of active compounds and microbial contamination. Loss on Drying (LOD) is a standard and reproducible analytical method for qualifying moisture content in crude drugs and powdered herbal formulations. [7] This study evaluates the moisture content of Kokilaksha churna using LOD.

Aims and Objective

Aim: To determine the moisture content of Kokilaksha Churna (*Asteracantha longifolia* Nees) using Loss on Drying.

Objectives:

- Quantitatively estimate the moisture content of Kokilaksha Churna
- Ensure that the powdered drug meets quality standards for stability and storage

Materials And Methods

Materials:

- Kokilaksha churna (*Asteracantha longifolia* Nees)

Instruments:

- Analytical balance (0.001g accuracy)
- Hot air oven
- Petri dishes
- Desiccator

-Spatula

-Gloves

-Tongs

Drug Procurement and Authentication:

The powdered sample was procured from M/s Parul Ayurveda pharmacy, Vadodara, Gujarat, India (License No. GA/ 1842).

Authentication was performed using morphological and organoleptic evaluation.

Sample Preparation:

-Petri dish cleaned and dried at 110 degree Celsius for 30 minutes, then cooled in desiccator.

-Approximately 2gm of kokilaksha churna was placed in the dish

Weighing Process:

The petri dish was cleaned using filter paper and dried in a hot air oven at 100 degree Celsius for 30 minutes. The petri dish was removed using a pair of tongs and allowed to cool in a desiccator for 15 minutes to prevent moisture reabsorption.

Loss On Drying Procedure:

- Initial weighing empty dish (W1) = 35.160 gm
- Dish with sample (W2) = 37.166 gm
- Sample placed in oven at 110 degree Celsius at 10:27 Am
- Weight readings were recorded at different intervals until a constant weight was achieved.
- Readings recorded at:
 - At 12:27 PM [W3] → 37.010 gm
 - At 2:44 PM [W3] → 37.003 gm

-At 4:10 PM [W3] → 37.001 gm

4] Moisture Content Calculation:

Moisture content (%) = $[(W2-W3) / (W2-W1)] * 100$

-At 12:28 PM, Moisture content (%)

Moisture content (a)= 8.0%

-At 2:44 PM, Moisture content (%)

Moisture content (b)= 8.05%

-At 4:10 PM, Moisture content (%)

Mositure content (c)= 8.08%

-Mean difference

Mositure content (%) = ~8.0%

FIGURE 1

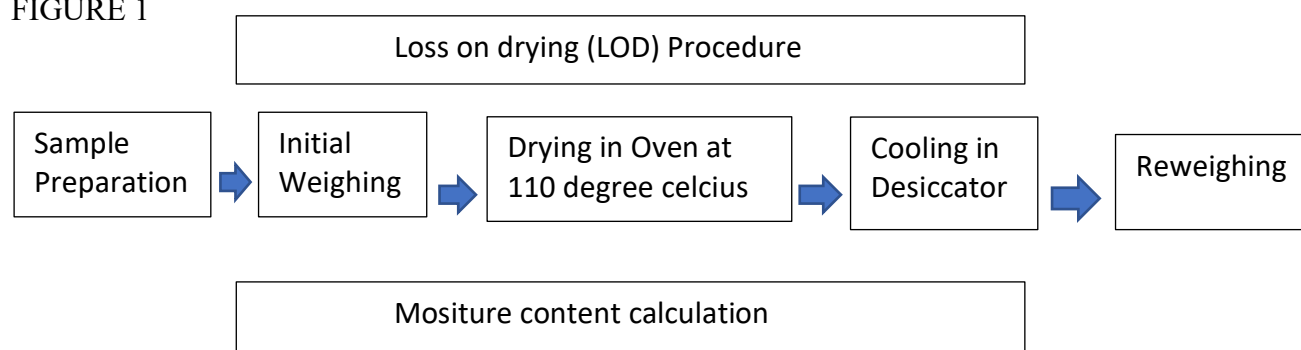


Figure 2- weight of an empty petri dish



Figure 3- Weight of crude drug



Figure 4- Weight after drving at 12:28 pm



Figure 5- Weight
after drying at 2:44
PM



Figure 6- Weight after
drying at 4:10 PM

Results

Time of Measurement | Weight (dish +
sample, gm) | Moisture content (%)

12:27 PM | 37.010 | 8.0

2:44 PM | 37.003 | 8.05

4:10 PM | 37.001 | 8.08

Mean | - | 8.04 ~ 8.0

Discussion

Moisture content is a critical quality attribute for powdered herbal drugs. The observed mean moisture content of 8.0% confirms proper drying and stability of Kokilaksha churna.

At this level, moisture is low enough to prevent microbial contamination and hydrolytic degradation of bioactive compounds, yet adequate to maintain powder flowability and compressibility for formulation.

The loss on Drying method is reliable and reproducible for routine quality

control. The slight reduction in weight between readings indicates progressive moisture removal, achieving constant weight at 4:10 PM.

Conclusion

-Kokilaksha Churna has a mean moisture content of 8.0% confirming compliance with quality standards.

-LOD is a simple, reproducible, and reliable method for moisture estimation.

-Routine moisture evaluation ensures stability, microbial safety and therapeutic efficacy of powdered herbal drugs.

Highlights

- 1) Moisture content is essential for stability and safety of Kokilaksha Churna.
- 2) LOD method provides accurate moisture determination

- 3) Mean moisture content: 8.0%, within acceptable range.
- 4) Ensures proper handling, storage, and efficacy of powdered formulation
- 6) Indian Pharmacopoeia. Methods for moisture determination (Loss on Drying)
- 7) Thakur L et al. Physiochemical evaluation of herbal drugs. *Pharmacogn Rev.* 2011;5(9):48-54.

Author Contributions

- Dr. Acharya Maitri: Conceptualization, methodology, experimental work, manuscript drafting

-Dr. Satej T. Banne: Supervision, methodology validation, critical review

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Conflicts of Interest: The authors declare no conflict of interest.

Ethical Approval: Not applicable, study did not involve human or animal subjects

References

- 1) Chuneekar KC, Pandey GS. Bhavaprakasha Nighanti. Chaukhambha Bharati Academy; 2015.
- 2) Ayurvedic Pharmacopoeia of India, Part I, Vol. III. Ministry of AYUSH, Government of India.
- 3) Sharma P, et al. Phytochemical and Pharmacological profile of *Asteracantha longifolia*. *J Ayurveda Integr Med.* 2021; 12(4): 555-562.
- 4) Singh A, et al. Saponins, flavonoids, and antioxidant activity of *Kokilaksha*. *Pharmacogn J.* 2022; 14(1): 120-128.
- 5) Thakur L, Ghodasra U, Patel N, Dabhi M. Quality control of herbal medicines. *Pharmacogn Rev.* 2011;5(9):48-54.