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COMPARATIVE PHARMACEUTICAL PREPARATION OF KUSHTHARAKSHASA TAILA PREPARED WITH AND WITHOUT WATER: A PHARMACEUTICAL STUDY

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ABSTRACT

Background: Kushtharakshasa Taila is a classical Ayurvedic formulation described in Bhaishajya Ratnavali and indicated in various Kushta (skin disorders). The formulation contains several purified mineral drugs along with herbal ingredients processed in Sarshapa Taila. Classical references provide different approaches for its preparation, including formulations prepared with and without addition of water. Scientific documentation of these pharmaceutical procedures is essential for standardization and reproducibility.[1] **Aim:** To prepare Kushtharakshasa Taila with and without water according to classical principles and compare their pharmaceutical characteristics, observations, and yield. **Materials and Methods:** Purification of Parada, Gandhaka, Haratala, Manashila, and Tamra was carried out according to classical Rasashastra procedures. Tamra Bhasma was prepared through Shodhana, Marana, and Amritikarana. Kajjali was prepared using equal quantities of Shuddha Parada and Shuddha Gandhaka. Herbal ingredients including Kushta, Saptaparna Twak, Chitraka Moola, Bakuchi, Aragwadha, and Rasona were powdered and incorporated into the formulation. Two samples of Kushtharakshasa Taila were prepared: Sample I without water and Sample II with water (1:4 proportion of Taila and Jala). Both samples were subjected to Surya Paka under identical conditions and evaluated organoleptically. **Results:** Sample I (without water) yielded 374 mL (48%) of Taila, whereas Sample II (with water) yielded 342 mL (44%). Sample I showed earlier development of characteristic odour, froth formation, and colour change compared to Sample II. The final product of Sample I appeared greenish-black, while Sample II exhibited a reddish-brown to dark-brown colour. **Conclusion:** Preparation without water demonstrated comparatively faster processing and higher yield than preparation with water. Distinct differences in colour, odour development, and pharmaceutical characteristics were observed between the two samples.

KEYWORDS: Kushtharakshasa Taila, Surya Paka, Rasashastra, Tamra Bhasma, Kajjali, Pharmaceutical Standardization, Ayurvedic Taila.

INTRODUCTION

Dermatological disorders are among the most frequently encountered conditions described in Ayurvedic literature. For their management, several external therapeutic preparations have been advocated, including medicated oils, ointments, and lepas. Among these, Kushtharakshasa Taila is a herbo-mineral formulation indicated for various forms of Kushta and other skin ailments.[1]

The formulation combines purified mineral ingredients with medicinal plants processed in Sarshapa Taila, thereby creating a preparation intended for topical application. The lipid base facilitates prolonged contact

with the affected area and may enhance the penetration of active constituents through the skin. Traditional Ayurvedic pharmaceutics recognizes Suryapaka as a distinct method of Sneha preparation in which solar energy is utilized to gradually process medicinal ingredients within the oil medium.[6]

Although the classical text provides the formulation and method of preparation, variations are observed regarding the incorporation of water during the pharmaceutical process. Such procedural differences may influence the extraction of active principles and consequently alter the biological activity of the final product. In view of the growing need for scientifically validated traditional medicines, the present investigation was undertaken to compare the antimicrobial potential of Suryapaki Kushtharakshasa Taila prepared with and without the addition of water against selected bacterial and fungal strains.[2,3]

MATERIALS AND METHODS

Study Design

A comparative pharmaceutical study was conducted on two batches of Kushtharakshasa Taila:

- Sample I – Kushtharakshasa Taila without water
- Sample II – Kushtharakshasa Taila with water

Preparation of Raw Materials

Parada Shodhana[3]

Ashuddha Parada (750 g) was purified by Urdhwapatana using Haridra Churna and Kumari Swarasa according to Rasendra Sara Sangraha.

Result

Parameter	Value
Initial weight	750 g
Final weight	665 g
Yield	91.06%

Gandhaka Shodhana[4]

Ashuddha Gandhaka (350 g) was purified using Go-Dugdha and Go-Ghrita through Bhudhara Yantra method.

Result: 354 g Shuddha Gandhaka obtained.

Kajjali Preparation

Equal quantities of Shuddha Parada and Shuddha Gandhaka (150 g each) were triturated until attainment of Nischandratva.

Final Yield: 285.5 g

Tamra Bhasma Preparation

Tamra Bhasma was prepared through:

1. Shodhana by Nirvapa in Sauviraka[7]
2. Marana through repeated Gaja Puta[8]
3. Amritikarana using Nimbu Swarasa and Surana Kanda[9]

Final Yield after Amritikarana: 102 g

Manashila Shodhana[5]

Ashuddha Manashila (250 g) was purified by seven Bhavanas with Adraka Swarasa.

Final Yield: 263 g

Haratala Shodhana[6]

Patra Haratala (150 g) was purified by Dola Yantra Swedana using Kushmanda Swarasa.

Final Yield: 149.5 g

Ingredients of Kushtharakshasa Taila[1]

Each ingredient was taken in a quantity of 24 g:

- Shuddha Parada
- Shuddha Gandhaka
- Kushta
- Saptaparna Twak
- Chitraka Moola
- Giri Sindura
- Rasona
- Shuddha Haratala
- Bakuchi
- Aragwadha Beeja
- Tamra Bhasma
- Shuddha Manashila

Base

- Sarshapa Taila – 768 mL

Additional for Sample II

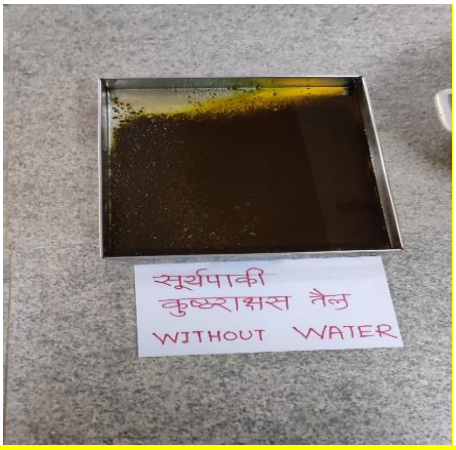
- Water – 3072 mL

Preparation of Kushtharakshasa Taila[1]

Sample I (Without Water)

Purified mineral drugs were powdered and mixed with Kajjali. Powdered herbal ingredients were incorporated to prepare Kalka. The Kalka was mixed with Sarshapa Taila and subjected to Surya Paka with daily stirring until completion of processing.

A. Ingredients



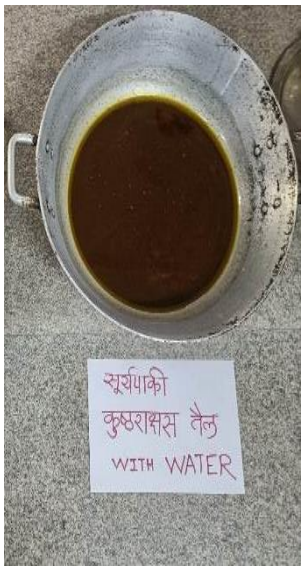
B. Suryapaaki Kushthrakshas Taila Without Water.

Sample II (With Water)

The same procedure was followed except that 3072 mL of water was added along with Sarshapa Taila before exposure to sunlight.

A. Ingredients

B. Water



C. Suryapaaki Kushthrakshas Taila With Water

RESULTS

Observations During Taila Preparation

Sample I (Without Water)

- Characteristic odour gradually intensified.
- Froth formation observed after one week.
- Colour changed from black to greenish-black.
- Temperature range: 30°C–61°C.

Sample II (With Water)

- Changes in colour, odour, and froth formation occurred comparatively later.
- Temperature range: 30°C–48°C.
- Longer processing duration required.

Organoleptic Evaluation

Sample I

Parameter	Observation
Appearance	Oily liquid
Colour	Greenish-black
Odour	Characteristic pungent smell

Sample II

Parameter	Observation
Appearance	Oily liquid
Colour	Reddish-brown to dark-brown
Odour	Characteristic pungent smell

Yield

Sample I (Without Water)		Sample II(With Water)	
Parameter	**Value**	**Parameter**	**Value**
Initial quantity of Taila	768 mL	Initial quantity of Taila	768 mL
Final quantity obtained	342 mL	Final quantity obtained	374 mL
Yield	44%	Yield	48%

DISCUSSION

The agar well diffusion assay demonstrated inhibitory activity of both formulations against the selected microorganisms. The observed zones of inhibition indicate that Kushtharakshasa Taila possesses constituents capable of restricting microbial growth under in vitro conditions.

Among the two preparations, the formulation processed with water exhibited greater inhibition against all three test organisms. The difference was particularly evident in the antibacterial activity against *Streptococcus pyogenes* and *Staphylococcus aureus*, where larger inhibition zones were recorded for the water-containing sample. A similar trend was noted against *Candida albicans*, suggesting enhanced antifungal efficacy.

The improved performance of the formulation prepared with water may be explained by the role of water as an extraction medium during Sneha Kalpana. Water facilitates the transfer of hydrophilic constituents from the herbal ingredients, while the oil phase simultaneously extracts lipophilic compounds. This dual extraction process may result in a broader spectrum of phytoconstituents being incorporated into the final product, thereby enhancing antimicrobial action.[6]

In addition, the formulation contains several ingredients traditionally recognized for their Krimighna, Kushtaghna, and Shodhana properties. The collective action of these ingredients, together with the processed mineral components, may contribute to the antimicrobial effect observed in the study.[1,5,7]

The findings suggest that pharmaceutical modifications during preparation can influence the therapeutic characteristics of the final formulation. Therefore, the inclusion of water during Suryapaka appears to be advantageous when antimicrobial efficacy is considered.

CONCLUSION

The comparative evaluation revealed that both variants of Suryapaki Kushtharakshasa Taila possess measurable antibacterial and antifungal activity against the tested organisms. However, the preparation containing water consistently produced larger zones of inhibition, indicating comparatively stronger antimicrobial activity.

These observations suggest that the incorporation of water during the Suryapaka process may facilitate better extraction of biologically active constituents and thereby enhance the therapeutic potential of the formulation. The study provides experimental support for the use of Kushtharakshasa Taila in conditions associated with microbial involvement. Further investigations involving phytochemical characterization, determination of minimum inhibitory concentration, and clinical evaluation are warranted to establish its efficacy more comprehensively.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest related to this study.

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