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PHARMACEUTICO AND PHYSICOCHEMICAL EVALUATION OF SOMRAJI OINTMENT AND ITS MODIFICATION INTO OINTMENT

[1]*Dr. Nivedita Hiregoudar, [2]Dr. M. B. Rudrapuri

[1]Second-Year P.G. Scholar, Department of Rasa Shastra and Bhaishajya Kalpana, Shri Shivayogeeshwara Rural Ayurvedic Medical College and Hospital, Inchal, Belgaum, Karnataka, India.

[2]Professor and Head of the Department of Rasa Shastra and Bhaishajya Kalpana, Shri Shivayogeeshwara Rural Ayurvedic Medical College and Hospital, Inchal, Belgaum, Belguam, Karnataka.

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***Corresponding Author**

Dr. Nivedita Hiregoudar

Second-Year P.G. Scholar, Department of Rasa Shastra and Bhaishajya Kalpana, Shri Shivayogeeshwara Rural Ayurvedic Medical College and Hospital, Inchal, Belgaum, Karnataka, India.

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ABSTRACT

Sneha Kalpana is a significant pharmaceutical dosage form in Ayurveda, employed in the preparation of medicated oils and ghee through a controlled process involving the prescribed proportions of *Kalka Dravya* (herbal paste), *Drava Dravya* (liquid media), and *Sneha Dravya* (lipid base). The ingredients are processed under regulated heating conditions for a specified period to facilitate the incorporation of herbal constituents into the lipid medium. *Somraji Taila* is a traditional Ayurvedic medicated oil described in the *Kushthadhikara* of *Bhaishajya Ratnavali*, It is indicated in various skin conditions, including *Dadru*, *Pama*, *Kandu*, *Nadivrana*, *Dushtavrana*, *Nilika*, and *Pidaka*.[1] Its classical indications highlight its traditional relevance in the management of different dermatological conditions. However, the liquid consistency of medicated oil may pose practical challenges in handling, storage, and localized application. Converting the oil into an ointment may offer a more convenient semisolid dosage form for topical use. Considering the traditional importance of Somraji Taila, the present study was undertaken to formulate **Somraji Ointment using Somraji Taila as the principal ingredient** and to evaluate its physicochemical characteristics to assess the quality and formulation properties of the

prepared ointment.

INTRODUCTION

Bhaishajya Kalpana is the branch of Ayurveda concerned with the pharmaceutical preparation of medicinal formulations. *Sneha Kalpana* is an important process in which herbal ingredients are processed with an oil or fat base to incorporate their extractable constituents into the lipid medium. *Taila* serves as both a base and a vehicle in these formulations.

Somraji Taila, described in *Bhaishajya Ratnavali* under *Kushtadhikara*, Chapter 71, is traditionally indicated for skin conditions such as *Dadru, Pama, Kandu, Nadivrana, Dushtavrana, Nilika,* and *Pidaka*. It contains herbal ingredients including Somraji, Haridra, Daruharidra, Sarshapa, Kushta, Latakaranja, Chakramarda, and Aragvadha, and is prepared according to the principles of *Taila Paka Vidhi*.

AIMS ABD OBJECTIVES

1. Preparation of Somraji Taila and its conversion into an ointment dosage form.
2. Physicochemical evaluation of Somraji taila and Ointment.

METHODS AND MATERIALS

The raw materials required for the preparation of Somraji Taila are Somraji (Bakuchi), Haridra, Daruharidra, Kushta, Latakaranja, Sarshapa, and Chakramarda, were procured from reliable sources and authenticated before use. Sarshapa Taila (mustard oil) was purchased from the local market. Somraji Taila was prepared according to the classical reference described in Bhaishajya Ratnavali. The prepared medicated oil was subjected to physicochemical evaluation to assess its quality and suitability for further pharmaceutical development into Somraji Ointment.

Drug name	quantity	part
Somraji	20gm	beeja
Haridra	20gm	rizome
Daruharidra	20gm	stem
Kushta	20gm	root
Lathakaranja	20gm	seeds
Sarshapa	20gm	Seed
Chakramarda	20gm	seed
Araghvada	20gm	patra
Sarshapa taila	640ml	oil
Water	2560ml	-

Apparatars and Ingredients

Instruments: Electronic balance, stainless steel vessel, measuring cylinder, muslin cloth, stainless steel spatula, gas stove, and thermometer.

a. Somraji, Haridra, Daruharidra, Sarshapa, Latakaranja, Chakramarda, and Kushta were procured from Kajarekar Ayurvedic Raw Drug Depot, Belagavi. Fresh leaves of Aragvadha were collected from the college garden.

SL.NO	Name	Botonical name	Part used	Chemical compostion
1	Bakuchi[2]	Psorolea corliolia Linn.	Seed	Psoralen
2	Haridra[3]	Cucurma longa	rizome	Curcumin,curumen
3	Daruharidra[4]	Beriberis aristata DC	stem	Berberine
b	Sarshapa[5]	Brassica compestris	seed	Myrosinase
5	Kusta[6]	Saussrea lappa	root	Kushtin.costus lactone
6	Latakaranja[7]	Caesalpinia bonducella	seed	Bonducin
7	Edagajabeeja[8]	Casia tora	seed	cathartin
8	Araghvada[9]	Casia fistula	leaf	Anthraquinone

b. Ingredients Used for the Preparation of Somraji Taila

Sarshapa Taila (mustard oil) was procured from Kajarekar Ayurvedic Raw Drug Depot, Belagavi, and used for the preparation of Somraji Taila.

METHOD OF PREPARATION OF SOMRAJI TAILA

Ensure that all raw drugs are free from moisture, insects, and contaminants, and clean all equipment thoroughly before use. Weigh equal quantities of the selected ingredients, triturate them in a Khalva Yantra to obtain coarse powder, and sieve through mesh No. 40–50. Store the prepared powder in an airtight container, protected from heat, light, and humidity.

After Churna preparation, 20 g each of Somraji, Haridra, Daruharidra, Sarshapa, Kushta, Chakramarda, Latakaranja, and Aragvadha were accurately weighed, mixed uniformly, and triturated with sufficient water to obtain a homogeneous Kalka (herbal paste) for further processing.

After Churna and Kalka preparation, 640 mL of Sarshapa Taila was gently heated until the initial froth disappeared. Then, 160 g of Kalka and 2560 mL of water were added in the classical proportion of 1:4:16 (Kalka:Taila:Water). The mixture was continuously stirred until the Kalka attained Varti consistency. Completion was confirmed by Agni Pariksha through the absence of a crackling sound. The oil was filtered through muslin cloth and stored in a clean glass container. The process took approximately six hours and yielded 500 mL of

Somraji Taila.

Obsevation

a) Pheṇa Parīkṣā: Foam formation was observed on the surface of the Taila.
b) Varti Parīkṣā: When the Kalka was rubbed between the fingers, it formed a wick-like structure (Varti).
c) Śabda Parīkṣā: When a drop of Sneha was placed on the flame, it burned without producing a crackling sound.

METHOD OF PREPARATION OF TAILA

Formulation of ointment

Component	Quantity(g)	Proportion%
Bee wax	10	5
Soft paraffin	10	5
Hard paraffin	180	90
Base material	200	100

Instruments: A digital weighing balance, mortar and pestle, stainless steel vessel, glass rod, spatula, water bath, thermometer, and suitable storage containers were used for the preparation of the ointment.

Beeswax and hard paraffin were melted in a water bath at moderate temperature, followed by the addition of white soft paraffin with continuous stirring to prepare a uniform ointment base. The measured quantity of Somraji Taila was gradually incorporated into the base and triturated thoroughly in a mortar until a smooth, homogeneous consistency was obtained. The ointment was cooled to room temperature and packed in a suitable airtight container.

PHYSICO CHEMICAL EVALUATION

1. Moisture Content: Determines the moisture present in Somraji Taila. Excess moisture may cause oil deterioration and reduce its storage stability.
2. Weight per mL: Helps assess the density and uniformity of Somraji Taila and identify variations in its quality during preparation and storage.
3. Importance of Specific Gravity: Specific gravity determination helps assess the density and quality of Somraji Taila by comparing its weight with an equal volume of water. It is useful for evaluating batch consistency and identifying possible variations in the oil's composition or purity.

Importance of Rancidity Test: The rancidity test helps detect oxidative deterioration in Somraji Taila. It indicates the freshness and storage stability of the oil, as rancidity may cause unpleasant odour, changes in quality, and reduced shelf life.

Importance of Acid Value: Acid value helps assess the quality and stability of Somraji Taila by measuring the free fatty acids present in the oil. A higher acid value may indicate hydrolysis or deterioration, making it useful for monitoring the oil's quality during preparation and storage.

Importance of Homogeneity: Homogeneity ensures uniform distribution of Somraji Taila and other ingredients throughout the ointment. It helps maintain consistent texture, appearance, and uniformity of the formulation, ensuring reliable application.

Importance of Viscosity: Viscosity measurement helps determine the resistance of Somraji Taila to flow. It is useful for assessing the oil's consistency, ease of application, and uniformity, as well as monitoring changes during.

Parameter	Result
Initial quantity of oil used	640 mL
Final quantity of Somraji Taila obtained	500 mL
Processing loss	140 mL
Final Somraji Taila obtained	500 mL

RESULT

Organoleptic properties of taila

S.no	Test parameter	Resulu
1	Colour	Brownish
2	Odour	Pleasent
3	Form	Semisolid

Physicochemical properties of taila

No.	Test Parameter	Result
1	Moisture Content	0.029%
2	Weight per mL	1.057 g/mL
3	Specific Gravity	0.914
4	Refractive Index	1.4712
5	Acid Value	3.362
6	Rancidity Test	Negative
7	Viscosity	46.932×10^6 cP

Organoleptic properties of oinment

S. No.	Parameter	Observation
1	Colour	Bright yellow
2	Odour	Pleasant characteristic odour
3	Appearance/Cons istency	Smooth semisolid

Physicochemical properties of ointment

S.No.	Parameter	Observation
1	Moisture Content	0.387%
2	Spreadability	45 mm
3	Extrudability	Passes
4	Homogeneity	Passes



Haridra



Somraji beeja



Sarshapa



Kushta



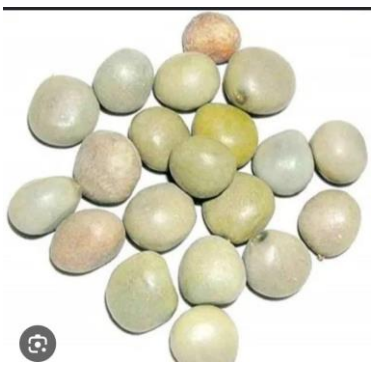
Araghvada



Daruharidra



Chakramarda



Lata karanja



Churna



Kalka



Preparation of oil





Prepared somraji taila



Prepartion of ointment



Prepared oinment

DISCUSSION

The present study was undertaken to develop Somraji Ointment using Somraji Taila as the active herbal ingredient and to evaluate its physicochemical characteristics. In Ayurvedic pharmaceutics, the conversion of medicated oil into an ointment provides a convenient topical dosage form that facilitates application, improves handling, and may help maintain the formulation during storage.

Somraji Taila was prepared using the prescribed herbal ingredients and Sarshapa Taila as the base oil. Sarshapa Taila was selected for its traditional use in skin disorders and its Kushtaghna properties. Somraji and the other herbal ingredients contribute to the therapeutic rationale of the formulation based on their traditional Ayurvedic applications. Incorporating Somraji Taila into an ointment base offers an alternative method of topical administration.

Hard paraffin and beeswax were incorporated to provide the required consistency and structural stability, while soft paraffin served as an emollient to support skin softness and reduce moisture loss. These excipients helped transform the medicated oil into a smooth, semisolid preparation suitable for external application.

The physicochemical evaluation of Somraji Taila and Somraji Ointment was carried out to

establish preliminary quality parameters. The assessment included relevant organoleptic characteristics and analytical properties such as specific gravity, refractive index, acid value, moisture content, pH, and spreadability, wherever applicable. The findings provide baseline information that can assist in evaluating the quality, consistency, and reproducibility of the prepared formulation. However, further studies are necessary to establish its long-term stability, safety, and therapeutic efficacy.

CONCLUSION

The present study successfully developed Somraji Ointment using Somraji Taila as the principal herbal ingredient and evaluated its physicochemical properties. The incorporation of suitable ointment-base ingredients resulted in a semisolid formulation intended for convenient topical application. The analytical findings provide preliminary standards for assessing the quality and consistency of the formulation and may serve as a reference for future research and standardization.

Further investigations involving stability studies, microbial quality assessment, skin compatibility testing, and appropriate pharmacological evaluation are required to establish the formulation's shelf life, safety, and therapeutic potential. The study provides a foundation for the further pharmaceutical development and standardization of Somraji Ointment as a topical Ayurvedic formulation.

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