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# PHARMACEUTICAL AND ANALYTICAL STANDARDIZATION OF *ASHTAKATVARA TAILA*

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## ABSTRACT

*Ashtakatvara Taila* is a classical Ayurvedic formulation indicated in the management of *Gridhrasi*. In the present study, *Ashtakatvara Taila* was prepared according to the principles of Sneha Kalpana and standard guidelines of the Ayurvedic Formulary of India. The prepared formulation was subjected to pharmaceutical, organoleptic and physicochemical evaluation to establish preliminary quality standards. The formulation attained *Kharapaka* with characteristic *Sneha Siddhi Lakshanas*. Organoleptic evaluation revealed a pleasant odour, golden-yellow colour and greasy consistency. Physicochemical analysis was carried out to assess the quality and stability of the prepared formulation. The findings obtained in the present study may serve as preliminary analytical standards for quality control and further standardization of *Ashtakatvara Taila.*

**Keywords**: *Ashtakatvara Taila, Sneha Kalpana, Gridhrasi,* Physicochemical evaluation, Standardization.

## INTRODUCTION

*Sneha Kalpana* is a commonly employed and highly preferred dosage form in *Ayurveda*. It is a pharmaceutical preparation method in which an oleaginous formulation is produced by processing *Kalka, Kwatha*, and *Drava Dravya* in prescribed proportions under a specific heating pattern for a defined duration[1].

Among the various *Ayurvedic* dosage forms, *Sneha Kalpana* is considered superior because of its advantages, including better absorption, improved bioavailability, and the ability to extract both fat-soluble and water-soluble active principles simultaneously in a single formulation[2].

*Ashtakatvara Taila* is one among *Taila Kalpana*, that is explained in various classical texts. It is mentioned in *Charaka Samhita,Chikitsa Sthana, Urustambha Chikitsa Adhyaya*[3].It is indicated for *Urustambha* and *Gridhrasi*. In *Ashtakatvara taila ,Tila taila* is used as *Taila dravya* and other ingredients such as *Pippalimula,Nagara,Katvara* and *Dadhi* are *Vatakaphahara* in action. In this present study, analytical parameters have been discussed.

## MATERIAL AND METHOD

## PHARMACEUTICAL STUDY OF *ASHTAKATVARA TAILA*

Table 1: Ingredients of *Ashtakatvara Taila*[3]

| SL NO: | DRUG | BOTANICAL NAME | PARTS USED | QUANTITY |
|---|---|---|---|---|
| 1 | *TILA TAILA* | Indian sesame | Seed oil | 1 *Prastha* (approx 0.768L) |
| 2 | *KATVARA* | Butter milk | Butter milk | 8 *Prastha* (approx 6L) |
| 3 | *DADHI* | Curd | Curd | 1 *Prastha* (approx 0.768L) |
| 4 | *PIPPALIMULA* | Piper longum | Root | 2 *Pala* (approx 96gm) |
| 5 | *NAGARA* | Zingiber officinale | Rhizome | 2 *Pala* (approx 96gm) |

## METHOD OF PREPARATION:

**a) Collection of the drug**

The raw drugs required for the preparation of medicine were taken from MVR Ayurveda Medical College,Parassinkadavu,Kannur.

**b) Preparation of *Taila*-** *Taila* was prepared according to Guidelines of *Sneha kalpana* given in AFI[4] at MVRAMCH Pharmacy,Kannur.

**Fig no:1 *Pippali***

**Fig no:2 *Shundi***

**Fig no:3 *Dadhi***

**Fig no:4 *Tila taila***

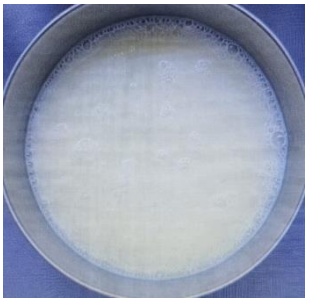

**Fig no:5 *Katvara***

**Fig no:6 Kalka added**

**Fig no:7 After adding curd and buttermilk**

**Fig no:8 Final product**

**Table 2:*Rasa Panchaka* of *Ashtakatvara Taila***

| **DRUG** | ***RASA*** | ***GUNA*** | ***VIRYA*** | ***VIPAKA*** | ***KARMA*** |
|---|---|---|---|---|---|
| *Tila taila* | *Madhura* | *Guru,saram* | *Ushna* | *Madhura* | *Vatakaphahara* |
| *Katvara* | *Kashaya,amla* | *Laghu* | *Ushna* | *Madhura* | *Vatakaphahara* |
| *Dadhi* | *Amla* | *Guru* | *Ushna* | *Amla* | *Vatahara* |
| *Pippali moola* | *Katu* | *Laghu,ruksha* | *Ushna* | *Katu* | *Vatakaphahara,deepana* |
| *Nagara* | *Katu* | *Laghu,ruksha* | *Ushna* | *Madhura* | *Vatakaphahara, pachana* |

**PHYSICO CHEMICAL AND ANALYTICAL STUDY OF *ASHTA KATAVARA TAILA***

Organoleptic characters- Odour, Colour,Consistency were analysed.

Physico chemical parameters- Specific gravity,Acid value,LOD, refractive index, rancidity and Saponification value were analysed.

**1. Specific gravity[5]**

Specific gravity is the ratio of the weight of the substance in air at a specific temperature to that of an equal volume of water at the same temperature to that of an equal volume of water at the same temperature.

**Specific gravity = Weight of the substance in air / equal volume of water.**

**2.Acid Value[6]**

Acid value is the number which expresses in milligrams the amount of Pottasium Hydroxide necessary to neutrilise the free acid present in 1gm of Substance.

**3.Loss on Drying[7]**

LOD is the loss of weight in % w/w resulting from water and volatile matter of any kid that can be driven off under specific conditions.

**4.Refractive index[8]**

The refractive index of a substance with reference to air is the ratio of the sine of the angle of incidence to the sine of angle of refraction of beam of light passing from air into the substance.Refractive index was checked by Abbe's refractometer.

**5.Saponification Value[9]**

Saponification value is the number of milligrams of potassium hydroxide necessary to neutrilise the free acids and to saponify the esters present in 1gm of substance.

**6. Rancidity[10]**

Rancidity 1ml of *taila* was mixed with 1ml of conc. HCl and 1ml of 1% solution of phloroglucinol in diethyl ether and then mixed thoroughly with the fat acid mixture. A pink color indicates that the fat is slightly oxidized while a red color indicates that the fat is definitely oxidized.

## OBSERVATION AND RESULTS

### Pharmaceutical observation

*Ashtakatvara Taila* is Prepared in *Kharapaka*.During the preparation *kalka* attain a state where it cannot be rolled in to *varthi*,instead it breaks in to smaller pieces.*Kalka* attains slightly blackish colour and become slightly hard in consistency. Towards the end of the preparation, foam appeared and the formulation exhibited the desired colour, characteristic odour, and taste of its ingredients.

**Table no:3 Organoleptic characters**

| CHARACTERS | RESULT |
|---|---|
| Odour | Pleasant |
| Colour | Golden yellow |
| Consistency | Greasy |

**Table no:4 Physico chemical Analysis**

| PARAMETERS | VALUE |
|---|---|
| Specific Gravity | 0.9201 |
| Acid Value | 8.2275 |
| LOD | 0.4883% |
| Refractive Index | 1.4660 |
| Saponification Value | 7.3127 |
| Rancidity | Slightly oxidised |

## DISCUSSION

The raw materials used for the preparation of *Ashtakatvara Taila* were procured from an authenticated source and processed according to the standard guidelines of *Sneha Kalpana* described in the Ayurvedic Formulary of India (AFI). The formulation was prepared using *Tila Taila* as the base oil along with *Katvara, Dadhi, Pippalimoola,* and *Nagara*. Preparation was carried out under controlled heating until the appearance of classical *Sneha Siddhi Lakshanas*, ensuring proper extraction of the active principles into the oil.

The pharmaceutical observations revealed that the formulation attained *Kharapaka*. During the final stage of processing, the *kalka* became slightly blackish and hard, lost its ability to roll into *varti*, and broke into small pieces, indicating the attainment of the desired *paka* stage. Froth formation, along with the characteristic colour, odour, and taste of the ingredients, further confirmed the completion of the preparation.

Organoleptic evaluation showed that the prepared *Ashtakatvara Taila* possessed a pleasant odour, golden yellow colour, and greasy consistency. These characteristics indicate proper processing of the formulation and acceptable sensory quality, which are essential parameters for the standardization of medicated oils.

The specific gravity of *Ashtakatvara Taila* was found to be 0.9201, which is comparable to the normal range of medicated sesame oil preparations.

The acid value was 8.2275, representing the amount of free fatty acids present in the oil. A moderate acid value suggests minimal hydrolysis of triglycerides and indicates that the formulation maintained satisfactory chemical stability during preparation.

The loss on drying (LOD) was 0.4883%, demonstrating a very low moisture content in the finished product. Reduced moisture content minimizes microbial contamination and hydrolytic degradation, thereby improving the stability and shelf life of the formulation.

The refractive index was found to be 1.4660. Refractive index is an important analytical parameter used to assess the purity and identity of oils. The obtained value suggests uniformity of the formulation and confirms the absence of significant adulteration.

The saponification value was 7.3127. This parameter reflects the amount of potassium hydroxide required to saponify the fatty acids present in the oil. The observed value indicates the presence of saponifiable lipids and serves as a useful quality control parameter for medicated oil preparations.

The rancidity test showed the formulation to be slightly oxidised. Slight oxidation is generally expected in herbal oil preparations because of exposure to heat during processing and does not necessarily indicate deterioration.

*Tila Taila*, used as the base oil, possesses *Ushna Virya* and *Vata-Kaphahara* properties, making it an ideal medium for extracting and delivering the active principles. *Katvara* exhibits *Ama Pachana* and *Vata-Kaphahara* actions, while *Pippalimoola* and *Nagara,* owing to their *Katu Rasa, Ushna Virya*, and *Deepana-Pachana* properties, help alleviate pain, stiffness, and *Kapha*-related obstruction. The combined action of these ingredients makes *Ashtakatvara Taila* a suitable formulation for the management of *Gridhrasi*, particularly in *Vata-Kapha* predominant conditions.

## CONCLUSION

*Ashtakatvara Taila* is a classical formulation indicated in the management of *Gridhrasi.* In the present study, the formulation was prepared according to the standard operating procedures (SOP) of *Sneha Kalpana* using *Tila Taila* as the base oil and subjected to organoleptic and physicochemical evaluation. The prepared *Taila* exhibited the desired *Sneha Siddhi Lakshanas* and acceptable analytical parameters, indicating good quality and stability. The obtained organoleptic and physicochemical values may serve as preliminary standards for the quality control and standardization of *Ashtakatvara Taila* in future pharmaceutical and clinical studies.

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