ANALYTICAL STUDY OF TILADI TAILA – A GOOD REMEDY FOR HAIR FALL

*Dr. M. Durga Bhavani and **Dr. Ch. Sridurga M.D(Ayu) Ph.D

*P.G Scholar Final Year, Dept. of Rasa Shastra & Bhaisajya Kalpana.
**Associate Professor & HOD, Dept. of Rasa Shastra & Bhaisajya Kalpana. S. V. Ayurvedic College, T.T.D, Tirupati, Andhra Pradesh, India.

ABSTRACT
The incidence of Hairfall is increasing alarmingly now a day’s due to changes in life style and increased stress. Hair plays an important role not only as a protective appendage of the body but also enhances the beauty of the individual. In Ayurveda herbs are used for the problems related with hair. Now a day’s herbal cosmetics are preferred because of their efficacy and safety. In Ayurveda, falling of hair (Khalitya or Keshapata) is described in detail along with numerous formulations for managing this condition. Tiladi Taila, mentioned in Sahasrayogam (TailaPrakarana) is one such formulation. An attempt has been made in the present study to prepare Tiladi Taila and analyse it for its Organoleptic properties, Acid value, Iodine value, Moisture content W/W and Saponification value. All the parameters are found to be good and within the standard parameters.

KEYWORDS: Khalitya, TiladiTaila, Sahasrayogam.

INTRODUCTION
The ancient science of Ayurveda is known for its natural remedies in treating almost all chronic life style diseases. Khalitya which is primarily a Pitta predominant Tridoshaja Vyadhi. Romakupagata vitiated Pitta (Bhrajaka Pitta mainly) along with vitiated Vata lead to dislodgement of the hair from hair roots. Further vitiated Kapha along with Rakta will cover and cause obstruction to the hair roots, which results in arrest of growth of hair.[1] Sneha Kalpana is a procedure where the active principles present in the drugs are extracted into the Sneha (Ghee or Taila) during the Pharmaceutical process. Especially Taila Kalpana has its
own importance in the treatment of Khalitya. TiladiTaila is one such formulation, which mainly consists of Kalka of Yastimadhu and KrisnaTila, Mahisha Kshira as Dravadravya and Tila Taila as a base.\textsuperscript{[2]}

Glycyrrhiza glabraLinn. known as Yastimadhu, is having properties like Chakshusya, Balavarnakruta, Shukrala, Keshya, Svarya, VataPitahara, Vranaropana etc.\textsuperscript{[3]} Sesamum (Tila) is one of the most ancient cultivated crops in India. Krisna Tila possesses qualities like Balya, Twacya, Vranaropana, Kesyna, Shukrala etc.\textsuperscript{[4]} Mahishakshira is known for its Nidrajanana property.\textsuperscript{[5]} The present study was focussed to prepare TiladiTaila according to general rule of Sneha Kalpana and it is further studied for its Organoleptic properties, Acid value, Iodine value, Moisture content W/W and Saponification value.

MATERIAL AND METHODS

1. Pharmaceutical Study

Procurement of Raw materials

All the ingredients were purchased from local market and foreign matter adhering to raw drugs was removed and cleaned. The base, which was used for preparation of this taila i.e., Tilataila was also purchased from local market.

Tiladi Taila

Preparation of Kalka dravyas

Dried roots of Yastimadhu and Seeds of KrisnaTila were taken according to general rule of Sneha Kalpana.\textsuperscript{[6]}

- 62.5g each of dried roots of Yastimadhu and seeds of Krisna tila were taken and pounded in a clean Khalwa Yantra to form coarse powder. Sufficient quantity of water was added, to form Kalka (paste).

Preparation of Snehapaka

- In a steel vessel, 500ml Tila Taila was taken and heated on mild fire. Then Kalkadravyas were added to it, followed by two litres of Mahisha Kshira. Heating was continued without covering the vessel. The mixture was stirred continuously to avoid sticking of Kalka to the bottom of vessel
- After 2½ hrs of Paka, Sneha sidhi lakshanas started to appear. The Kalka was evaluated for Agni pariksha and Vartipariksha.
When Kalka was put onto fire it did not produce any crackling sound and when rolled in between the fingers, forms a Varti.

Appearance of foam was observed, heating was then stopped.

The vessel was taken out of gas stove. Sidha sneha was filtered through double layered cotton cloth in the warm stage itself.

After self-cooling, 420ml of Tiladi Taila was obtained and preserved in a clean and dry glass bottle.

2. Analytical Study

Organoleptic Characters

Tiladi Taila sample was inspected for colour, odour, appearance, touch and clarity.

Physico – Chemical Parameters

Acid value\(^7\)

The acid value of an oil or fat is defined as the number of milligrams of Potassium Hydroxide required to neutralize the free acid in one gram of the sample.

**Procedure**

Mix 25ml of ether with 25ml of alcohol (95%) and 1 ml of 1% Phenolphthalein solution and neutralize with N/10 alkali (few drops). Dissolve about 5 gm of the fat or oil accurately weighed in the mixed neutral solvent and titrate with N/10 Potassium (or Sodium) Hydroxide, shaking constantly until a pink colour which persists for fifteen seconds is obtained.

\[
\text{Acid value} = \frac{\text{No. of ml of N/10 alkali used} \times 5.61}{\text{Weight of sample in grams}}.
\]

Titration should preferably not exceed about 10 ml. The free fatty acid calculated as oleic acid % (1ml N/10) alkali =0.028 g. oleic acid).

Iodine value\(^8\)

The iodine value of an oil or fat is the weight of iodine absorbed by 100 parts by weight of the sample; it is determined by the following method.

**Iodine monochloride method (Wij’s method)**

Place the sample accurately weighed in a dry iodine flask of 250 ml capacity, add10 ml of carbon tetrachloride and dissolve. (The approximate weight in grams of the sample to be taken may be calculated by dividing 20 by the highest expected Iodine value). Add 10 ml of
Chloroform and 20ml of Iodine mono-chloride solution, insert the stopper previously moistened with Potassium iodide solution and allow standing in a dark place at a temperature of about 17°C for 30 minutes. Add 15 ml of Potassiumiodide solution and 100 ml of water shake and titrate with N/10 Sodium thio-sulphate using starch mucilage as indicator. Note the number of ml required (a). At the same time carry out the operation in exactly the same manner, but without the sample being tested and note the number of ml N/10 Sodium thio – sulphate required (b).

\[
\text{Iodine value} = \frac{(b-a) \times 0.01269 \times 100}{\text{Wt. of Sample in grams}}
\]

- **Moisture value w/w**[9]

Weighed quantity of oil was taken in a crucible, heated to 105 °c for an hour. After cooling it was reweighed. The difference in the weight, before and after heating, indicated amount of moisture presents (loss on drying).

- **Saponification value**[10]

The Saponification value of an oil or fat is defined as the number of milligrams of Potassium hydroxide required to neutralize the fatty acids resulting from the complete hydrolysis of 1gram of the sample.

**Procedure**

Weigh 2 gram of the oil or fat into a conical flask and add exactly 25 ml of the alcoholic Potassium hydroxide solution. Attach reflex condenser and heat the flask in boiling water for 1hr along with shaking frequently. Add 1 ml of Phenolphthalein (1%) solutionand titrate excess alkali with N/2 Hydrochloric acid (titration=a ml) and carry out a blank at the same time (titration=b ml).

\[
\text{Saponification value} = \frac{(b - a) \times 56.1}{\text{Wt. of sample in grams}}
\]

**RESULTS**

Organoleptic changes observed are tabulated as follows
Table No. 1: Organoleptic Parameters.

<table>
<thead>
<tr>
<th>S.no.</th>
<th>Parameters</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Colour</td>
<td>Pale yellow</td>
</tr>
<tr>
<td>2.</td>
<td>Odour</td>
<td>Pleasant smell</td>
</tr>
<tr>
<td>3.</td>
<td>Appearance</td>
<td>Oily</td>
</tr>
<tr>
<td>4.</td>
<td>Touch</td>
<td>Snigdha</td>
</tr>
<tr>
<td>5.</td>
<td>Clarity</td>
<td>Clear, transparent</td>
</tr>
<tr>
<td>6.</td>
<td>Taste</td>
<td>Madhura</td>
</tr>
</tbody>
</table>

Table no. 2: Physico-chemical Parameters.

<table>
<thead>
<tr>
<th>S.no</th>
<th>Name of the test</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Acid value</td>
<td>3.2</td>
</tr>
<tr>
<td>2.</td>
<td>Moisture value W/W</td>
<td>1.03</td>
</tr>
<tr>
<td>3.</td>
<td>Iodine value</td>
<td>101.84</td>
</tr>
<tr>
<td>4.</td>
<td>Saponification value</td>
<td>192.42</td>
</tr>
</tbody>
</table>

Roots of Yastimadhu

Seeds of Krisna Tila

Mahisha Kshira

Tila Taila
DISCUSSION

Tiladitaila is a unique preparation mentioned in Sahasrayogam- Taila prakarana for Kesa Patana comprising the Snehapaka of Tila Taila with the kalka of Yastimadhu roots and seeds of Krisna tila along with Mahisha ksheera.

According to Ayurvedic classics, Yastimadhu and Krisna tila are having Kesya property. The Mahisha ksheera has capacity to induce natural sleep.

➢ Acid value

The Acid number is a measure of the amount of carboxylic acid groups in a chemical compound, such as fatty acids or in a mixture of compounds. The Acid number is used to
quantify the amount of acid present. In this study the results of determination of Acid Value indicate that Acid value of *Tiladi Taila* is 3.2.

- **Saponification value**
  The amount of alkali needed to saponify a given quantity of fat will depend up on the number of –COOH group present. The long chain fatty acids found in fats have low saponification value because they have relatively less number of Carboxylic functional groups per unit mass of the fat as compared to short chain fatty acids. Saponification value is directly proportional to the fatty matter content. More the fatty matter content there will be the more chances of rancidity factor and less will be the shelf life and therapeutic value. In this study, *Tiladi Taila* Saponification value was 192.42.

- **Iodine value**
  The determination of Iodine number is useful in determining the quality of oil or whether it is free from adulteration. Iodine number is also a measure of the degree of unsaturation of fat. The more Iodine number, more are unsaturated fattyacid bonds present. This indicates that more number of double bonds in the *Taila*. The more iodine is attached, the higher is the value of its being more reactive, less stable, softer and more susceptible to oxidation and rancidification with *Taila*. The result reported by this study for *Tailadi Taila* is 101.84.

- **Moisture value w/w**
  The moisture value of *Tiladi Taila* was 1.03 which suggests its long shelf life. The excess moisture content in a preparation can lead to growth of microbes, fungi etc which can deteriorate the drug.

**CONCLUSION**

*Tiladi taila* was subjected to standardisation methods of taila to check its shelf life, rate of decomposition and stability. Acid value of *Tiladi taila* is 3.2, Iodine value is 101.84, Moisture content W/W value is 1.03, Saponification value is 192.42. We can conclude that *Tiladi Taila* is stable and efficacious remedy in treating *Kesha patana*.

**REFERENCES**

1. Sushruta Samhita Nidana sthana Ksudraroga Adhikara(13 chapter) verse no. 33, 34 – By Prof. G.D. Singhal & Colleagues, Chaukhamba Sanskrit Pratisthan; Delhi.
2. Sahasrayogam by Dr. Ram Nivas Sharma & Dr. Surendra Sharma – Taila Prakarana Page no. 101- Choukambha Sanskrit Pratistana, Delhi.

3. BhavaprakashNighantu (Indian materia medica) by Shri Bhavamisra (c. 1500 – 1600 A.D), commentary by Padmashri Prof. K.C. Chunekar – HaritakyadiVarga, Verse no. – 146; Page no. 62; Choukambha Bharat Academy, Varanasi.

4. Bhavaprakash Nighantu (Indian materia medica) by Shri Bhavamisra (c. 1500 – 1600 A.D), commentary by Padmashri Prof. K.C. Chunekar –Dhanya Varga, Verse no. –63- 64; Page no.638-639; Choukambha Bharat Academy, Varanasi.

5. BhavaprakashNighantu (Indian materia medica) by Shri Bhavamisra (c. 1500 – 1600 A.D), commentary by Padmashri Prof. K.C. Chunekar –DugdhaVarga, Verse no. –15; Page no.753; Choukambha Bharat Academy, Varanasi.

6. Bhaisajya Kalpana Vijnanam by Dr.K.Rama Chandra Reddy – Sneha Kalpana Adhyaya Page no. 332 & 335; Choukambha Sanskrit Pratistana, Delhi.

7. Quality control & Standardisation of Ayurvedic Medicines by Dr.Devendra Joshi & Dr.Geetha Joshi- page no. 177; Choukambha Orientalia, Varanasi.

8. Quality control & Standardisation of Ayurvedic Medicines by Dr.Devendra Joshi & Dr.Geetha Joshi- page no. 177; Choukambha Orientalia, Varanasi.

9. Quality control & Standardisation of Ayurvedic Medicines by Dr.Devendra Joshi & Dr.Geetha Joshi- page no.133; Choukambha Orientalia, Varanasi.

10. Quality control & Standardisation of Ayurvedic Medicines by Dr. Devendra Joshi & Dr.Geetha Joshi- page no. 178; Choukambha Orientalia, Varanasi.