

**PHARMACEUTICO - PHYSICOCHEMICAL STUDY OF *BILVA TAIL***

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**ABSTRACT**

*Bilvataila* is a preparation of *Bilvaphalmajja*, *Ajadugdha*, *Tilataila* and *Gomutra*. This preparation is used for the treatment of *Karnaroga* and prepared by *Snehapaka* process as mentioned in classical textbooks of *Ayurveda*. During the manufacturing process *Siddhi lakashanas* mentioned in *Ayurveda* was recorded. Standard analytical parameters of a number of *Ayurvedic* oils have been described in API. *Bilvataila* is one of the most commonly used oil by *Ayurvedic* physicians. But there no standard analytical parameters are available in any authentic texts. Therefore this study aimed to set the Quality control parameters with SOP of *Bilvataila*.

**Keywords:** *Bilvataila*, *Ajadugdha*, *Karnaroga*, *Snehapaka*, *Siddhi lakashanas*, Saponification

**INTRODUCTION**

*Ayurveda* is a science of life. It is ever growing eternal health science. It is considered as the oldest documented form of health care system on the planet.

*Bhaishajyakalpana* is the science which deals with preparation of various Medicine in details. It explains various methods of processing to convert the drug into different formulations into more palatable form with higher shelf life. Herbal and Herbomineral formulations are prepared in *Ayurveda* namely *Swaras*, *Kalka*, *Kwath*, *Hima*, *Phanta*, *Churna*, *Avleha*, *Sneha*, *Sandhan*, *Satva* etc. The nomenclature of *SnehaKalpana* is derived from words *Sneha* and *Kalpana*, where '*Sneha*' means fat or fatty materials and '*Kalpana*' stands for pharmaceutical process of medicaments. In *Ayurveda*, *Ghri-*

*taKalpana* and *TailaKalpana* are included in *SnehaKalpana* (1).

*Bilvataila* is one of the most important remedy and commonly used oil by *Ayurvedic* physicians. *Bilvataila* is used for the treatment of *Karnaroga*. For present Pharmaceutico-analytical study we followed reference of *BhaishajyaRatnavali Karnarogachikitsa*(2). The *Bilvataila* was prepared and analysed for Quality control on the parameters described in *Ayurvedic* texts as well as modern technology.

**MATERIAL AND METHODS**

Fresh *Bilva* were collected from local market of Pune. *Ajadugdha* were collected from Shepherd. *Tila taila* and *Gomutra* was procured from *Manakarnika aushadhalaya* Chinchwad, Pune. *Bilvataila* will be pre-

pared w.s.r.to *BhaishajyaRatnavali Karnarogachikitsa* at Rasashastra-*Bhaishajykalana* Department Of Dr.D.Y.Patil College Of *Ayurved* and Research Centre, Pimpri, Pune-018.

Pharmaceutico- analytical study of *bilvataila* will be carried out in Rasashastra-*Bhaishajykalpana* Department and Departmental Quality Control Lab of Dr.D.Y.Patil College of *Ayurved* and Research Centre, Pimpri, Pune-018 and External Sources Whenever Necessary.

### PREPARATION OF DRUG

#### ***Murchhna of tila taila:***

The purpose of *Murchhna* is remove its *Daurgandh* from the crude form of *Tila taila* and it is having its own specific colour. It removes *Aamdosha*. Impares good colour like pinkish red and brings good odour (3,4).

#### ***Procedure:***

*Tila taila* is heated over *Mandagni* till the foam and sound is subsided, then vessel is taken out from the fire. Above mentioned drugs (table no.1) are made into powder form and then converted into *Kalka* form by adding little amount of water, then this *Kalka* and mentioned quantity of water is added to *Tila taila* and heated for making *Paka* till up to the attaining the *tailaSiddhi lakshanas*, then vessel is taken out from the fire and *taila* is filtered. During the heating process material is stirred continuously in order to avoid sticking of *Kalka* to bottom of container and also avoid burning of *Kalka* (4,6,7). This *Murchhita taila* was used in preparation of *Bilvataila*.

### PREPARATION OF BILVA TAILA:

*Bilva tail* has been prepared w.s.r.to *BhaishajyaRatnavali Karnarogachikitsa*. Three batches were prepared at Rasashastra-*Bhaishajykalana* Department Of Dr.D.Y.Patil College Of *Ayurved* and Re-

search Centre, Pimpri, Pune-018.*Bilvataila* was prepared with *Murchhita Tila taila*. First of all *Murchhita Tila taila* was heated on mild heat, when *taila* was slightly warm then *Kalka (Bilvaphalmajja and Gomutra)* was added into it and mixed thoroughly. During mixing of *Ajadugdh* heating process was continued and continuous stirring of whole material was done. Then *Kalka* was taken out with the help of the ladle and tested for *Sneha Siddhi lakshanas* and stage of the *Paka*. After achieving all *Siddhi lakshanas* it was allow for cooling and kept in glass container (9).

### PHYSICOCHEMICAL EVALUATION:

In physicochemical evaluation, Refractive index, Specific gravity, Acid value, Iodine value and Saponification value are studied as per standards (10). The determinations were performed by preparing three batches (table no.5). Before preparing the preparation all physicochemical tests were done for *Tila taila* (table no.3).

### RESULTS AND DISCUSSION:

When *Snehapaka* completes the following *Siddhi lakshanas* (5,9) were observed.

1. *Sneha Kalka* becomes wick (*Vartivat snehakalka*) like when rolled between two fingers.
2. There was not any crackling sound when *Taila* put over the fire.
3. Foam (appearance of *phena*) is observed when *Tailapaka* completes.
4. Specific colour, odour and taste of the ingredients become marked when *paka* is over.

That results of *Tila taila* are given in (table no.3). The prepared finished product is Reddish yellow colour, characteristic odour (table no.4). Table no.5 narreted the values for physicochemical parameters for *Bilvataila* shows that Specific gravity is (0.912%) and

Refractive index is (1.46 at 40<sup>0</sup>C). Iodine value is (106.66). Kries test for Rancidity was performed after preparing the samples & found negative.

**TLC CONDITION:**

**Adsorbent layer:** Silica gel G

**Solvent system:** Toluene: Ethyl acetate (1:4)

**Sample:** Unsaponifiable matter

**Spot:** Two

**Rf:** 2.22 & 7.11

**CONCLUSION:**

The Quality control parameter is to ensure the quality of product. The parameters may be used as a standard for *Bilva Taila* i.e. Refractive index (1.46 at 40<sup>0</sup>C), Specific gravity (0.912at 25<sup>0</sup>C), Acid value (4.75), Iodine value (106.66) and Saponification value (190.33). The results are being reporting for the first time, could be useful in the identification & standardization of *Bilva Taila*.

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**Table no 1: Ingredients Used and Quantity for Murchhna of TilaTaila**

Sr.no.	Ingredients	Botanical name	Qty. as per Classics	Qty. Taken
1.	<i>TilaTaila</i>	Seasame oil	1 Part	5lit
2.	<i>Manjishtha</i>	Rubiocordifolia	1/16 Part	115 gms
3.	<i>Haridra</i>	Curcuma longa	1/64 Part	115gms
4.	<i>Lodhra</i>	Symplocosracemosa	1/64 Part	115gms
5.	<i>Nagarmotha</i>	Cyperusrotundus	1/64 Part	115gms
6.	<i>Nalika</i>	Ficusarnottiana	1/64 Part	115gms
7.	<i>Aamalki</i>	Embllica officinalis	1/64 Part	115gms
8.	<i>Bibhitaka</i>	Terminalia belerica	1/64 Part	115gms
9.	<i>Haritaki</i>	Terminalia chebula	1/64 Part	115gms
10.	<i>Ketakipushpa</i>	Pandanus odorotissimus	1/64 Part	115gms
11.	<i>Vatankur</i>	Ficusbengalensis	1/64 Part	115gms
12.	<i>Hriber</i>	Coleus vettiveroids	1/64 Part	115gms
13.	<i>Jala</i>	Water	4 Parts	20lit

**Table no 2: Ingredients Used and Quantity for Bilva taila**

Sr.no.	Ingredients	Botanical name	Qty. as per Classics	Qty. Taken
1.	<i>Bilvaphalmajja</i>	Aegle marmelos	250 gms	1 kg
2.	<i>Ajadugdha</i>	Goat milk	4 lit	2.5 lit
3.	<i>TilaTaila</i>	Seasame oil	1 lit	4 lit
4.	<i>Gomutra</i>	Cows urine	250 ml	1 lit

**Table no 3: Physicochemical results for Tila taila**

Sr.no.	Parameters	Results (% w/w)
1.	Refractive index	1.451
2.	Specific gravity	0.84
3.	Density(g/ml)	0.91
4.	Acid value	0.78
5.	Iodine value	87.02
6.	Saponification value	53.635
7.	Rancidity test	- ve

**Table no 4: Organoleptic results for Oils**

Sr.no.	Characters	<i>Tila taila</i>	<i>Bilva taila</i>
1.	<i>Rupa</i> (Colour)	Yellow	Greenish yellow
2.	<i>Gandha</i> (Odour)	Characteristic	<i>Gomutra</i>

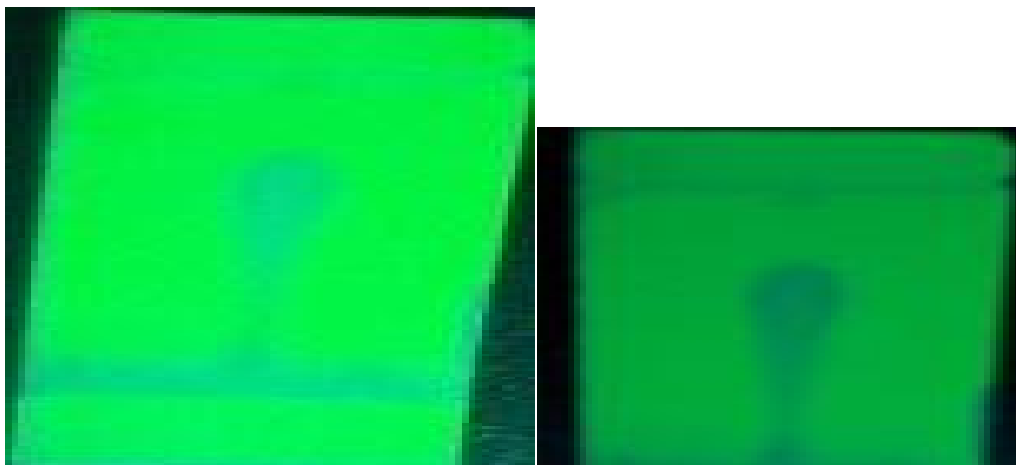
**Table no 5: Physicochemical results for *Bilva taila***

Sr.no.	Parameters	Batch-A	Batch-B	Batch-C	Average values
1.	Refractive index*	1.46	1.47	1.45	1.46
2.	Specific gravity**	0.912	0.913	0.912	0.912
3.	Density(g/ml)	1.01	1.02	1.02	1.016
4.	Acid value* **	4.77	4.73	4.76	4.75
5.	Iodine value* **	107	106	107	106.66
6.	Saponification value* **	191	190	190	190.33
7.	Rancidity test	- ve	- ve	- ve	-ve

\*At 40<sup>0</sup>C, \*\*At 25<sup>0</sup>C, \* \*\*% w/w

**Table no 5: Chromatographic separation of Unsaponifiable matter on Silica gel G**

Solvent System: Toluene: Ethyl acetate (1:4)			
Slide	No of spots	Rf	Solvent System: Toluene: Ethyl acetate (1:4)
A	2	2.22 & 7.11	



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