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PREPARATION AND ASSESSMENT OF QUALITY CONTROL PARAMETERS OF ABHAYADI TAILA

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ABSTRACT

Introduction:

In Ayurveda classics, *Ushna pariseka* (hot pourings), *Sthanika lepa* (paste application), *Ghritapana* (internal oleation), *Abhyanjana* (oil application) and *Swedana* (fomentation) are explained for treating *Vataja Oshta roga*. *Abhayadi taila* is a formulation that is effectual in the management of 8 types of oshta rogas.

Methodology:

This study is an attempt to make a lip oil that is solely meant for the management of *Vataja Oshta rogas*. Its base being *tila taila* added with *swarasa* of *Abhaya phala*, *Nirgundi* and *Nimba patra* and *kalka* of *Haridra*. *Abhayadi taila* was subjected for physio-chemical, organo-leptic tests and microbial limit test.

Results:

The result shows the *tailapaka lakshana* attained by the prepared *taila* and its detailed analytical study report

Discussion:

This article gives the details about the preparation and analytical study of *Abhayadi Taila*.

Keywords: *Abhayadi taila, vataja oshta roga*, quantification, preparation, taila

INTRODUCTION

Vataja Oshta Roga is one among the 8 *Oshta rogas* mentioned by *Sushruta, Vagbhata* and *Shrangadhara*.

When the aggravated *vata* afflicts the lips, those become *karkasha* (dry), *parusha* (rough), *stabdha* (rigid), *Krishna varna* (hyperpigmentation), *paripatyata*(fissured) causing *vataja oshta roga*¹

Treatment like *Ushna pariseka* (hot pourings), *Sthanika lepa* (paste application), *Ghritapana* (internal oleation), *Abhyanjana* (oil application) and *Swedana* (fomentation) are explained for treating *Vataja Oshta rogas* [1]. *Vaidyasara Sangraha* mentioned about the formulation of *Abhayadi Taila* wherein *taila paka* was carried out as per classics using *patra swarasa* of *nimba* and *nirgundi*, *kashaya* of *haritaki* and *haridra kalka* [2].

Snehapaka is the preparation of medicated *taila* or *ghrita* that constitutes three major ingredients:

1. *Kalka*

2. *Taila* or *ghrita*

3. *Drava dravya*

When not specifically prescribed, the quantity of each component *kalka* (paste), *Sneha* (ghee, oil) and *drava* (liquids) shall be increased four times in successive order are taken in the proportion of 1:4:16 [3].

According to *tailapaka prakarana*, *Abhayadi taila* was prepared with *tila taila* as base, *Haritaki phala kashaya*, *Swarasa* of *Nimba* and *Nirungdi patra* along with *haridra* as *kalka dravya*.

This *Abhayadi Taila* is prepared and developed in the form of lip oil and stored in roller bottles.

Aims and objectives

1. To prepare *Abhayadi Taila* in the form of lip oil rollers
2. To study the Physico-chemical, organoleptic and microbial limit tests of the prepared *Abhayadi Taila*

Table 1: Ingredients of *Abhayadi Taila*

<i>Tila taila</i>	8 parts
<i>Nimba patra swarasa</i>	32 parts
<i>Nirgundi patra swarasa</i>	
<i>Haritaki phala Kashaya</i>	
<i>Haridra kalka</i>	4 parts

Apparatus: Steel vessel, measuring jar, gas stove, ladle, clean muslin cloth.

Method of preparation

All the ingredients were procured from the GMP certified KLE Ayurveda pharmacy after

ascertaining AYUSH certified Drug testing Laboratory with identification, authentication and certification as per API standards: - BMK/CRF/36/2023-24.

Table 2: Quantity for the preparation of *Abhayadi Taila*

Ingredients	Quantity
<i>Haritaki phala</i> (Figure 1)	280 ml
<i>Nimba patra swarasa</i> (Figure 2)	280 ml
<i>Nirgundi patra swarasa</i> (Figure 3)	280 ml
<i>Tila taila</i>	210 ml
<i>Haridra</i> (Figure 4)	26.25 gm

70 gms of *haritaki phala majja* + 1120 ml of water was taken in a vessel and soaked overnight. The vessel with soaked *haritaki* was taken and set to boil in medium heat and reduced to 280ml (**Figure 5**).

Tender leaves of *Nimba* and *Nirgundi* are taken separately and the *swarasa* was extracted. *Haritaki kashaya*, *nimba patra swarasa* and *Nirgundi patra swarasa* are mixed together which is 840 ml of *drava Dravya* (**Figure 6**).

Then 210 ml of *tila taila* was taken in an empty vessel; 840 ml of *drava dravya* & 26.25gm of *haridra kalka* and heated on mild to medium flame (**Figure 7**).

The contents are stirred continuously to avoid charring. The boiling process is continued till the moisture gets evaporated and characteristics of *tailapaka* appears. After it is cooled; the content is filtered through a muslin cloth and poured in a measuring jar and measured (**Figure 8**).

190ml was the total quantity measured, due to loss in the muslin cloth and in the *kalka* during filtration.

50ml was sent for analytical study and 100ml is taken for the study and packed in 20 pieces of 10ml roller bottles and 5ml is dispensed in each roller bottles with the help of a syringe (**Figure 9 and 10**).

Precautions:

The vessel used for the process should be clean, dry and adequate size.

Continuous stirring should be done to avoid sticking of materials to the vessel.

Mandagni should be maintained throughout the procedure till *khara paka* is attained.

A clean cloth should be used for filtration.

ANALYTICAL STUDY:

OBSERVATIONS (Figure 11.1, 11.2)

Prepared *Abhayadi Taila* was subjected to various analytical parameters such as organoleptic characters, physio-chemical standards, tests for specified Micro-organisms

(Qualitative) and Microbial limit test (Quantitative) to develop basic standards. The study of this sample was done in ASU approved CRF lab of KLE Ayurvedic College, Shahapur, Belagavi, Karnataka, India (BMK/CRF/36/2023-24)

RESULTS

Organoleptic characters:

The *Abhayadi Taila* was subjected for organoleptic test for assessment of form, colour & odour. The results are tabulated below in **Table 3**:

Table 3: organoleptic characters of Abhayadi Taila

S. No.	Tests	Results
1	Form	Taila
2	Color	Greenish
3	Odour	Odorless

Physio-chemical standards:

The same *taila* was also tested for the Physio-Chemical parameters. The results are given in the **Table 4**.

Tests for specified Micro-Organisms (Qualitative)

The *taila* was also subjected for the microbial limit test and total microbial and fungal count. Results are given below **Table 5**.

Microbial limit test (Quantitative) (Table 6)

Table 4: Analytical study of Abhayadi Taila

S. No.	Tests	Results
1	Loss on drying at 110 °C	0.123%
2	Saponification value	203.71
3	Iodine value	88.879
4	Refractive index at 40° C	1.478
5	Specific gravity	0.920
6	Acid value	2.583

Table 5: Tests for specified Micro-Organisms (Qualitative)

	Limits (as per IP)	Results
<i>E coli</i>	Absent/100ml	Absent
<i>S aureus</i>	Absent/100ml	Absent
<i>P aeruginosa</i>	Absent/100ml	Absent
<i>S abony</i>	Absent/100ml	Absent

Table 6: Microbial limit test (Quantitative)

	Limits (as per IP)	Results
Total bacterial count	30 – 300 cfu/ml	59 cfu/ml
Total fungal count	10 – 100 cfu/ml	06 cfu/ml



Figure 1: (HARITAKI PHALA)



Figure 2: (NIMBA)



Figure 3: (NIRGUNDI PATRA)



Figure 4: (HARIDRA CHURNA)



Figure 5: (HARITAKI KASHAYA)



Figure 6: (DRAVA DRAVYA)



Figure 7: (PREPARATION)



Figure 8: (FILTRATION)



Figure 9: (DISPENSING)



Figure 10: (LABELLED)

SHREE B H KANKARWADI AYURVEDIC PHARMACEUTICALS
A COMMITTEE OF B.H.K. AYURVEDIC PHARMACEUTICALS, INCORPORATED BY AN ORDINANCE
CENTRAL RESEARCH FACILITY
Approved: AYUR Drug Testing Laboratories Ltd. No. 16, 40/9112

Quotation No: 00000000000000000000
Reference No: CTR/2024/00000000000000000000
Submitted by: Dr. Anurag Sagar
Sample: Approved
Dr. No. Not Available

Registration No.: 1234567890
Date: 2024-07-15
Sample Qty: 100ml

TEST REPORT
(The Charge of Certificate, for Test and for the Test Item only)

Organoleptic Characteristics:	RESULTS
Taste	1. Sweet
Color	1. Brownish
Other	1. Odorless

Physico-Chemical Standards:	RESULTS
TSS (Total Solids)	1. 0.00%
Loss on Drying at 100°C	1. 0.00%
Residue on Ignition	1. 0.00%
Acid Value	1. 0.00%
Alkaline Value	1. 0.00%
Reduction Value at 30°C	1. 0.00%
Specific Gravity	1. 0.00%
Acid Value	1. 0.00%

Note: - IPR Standards are not Available. Other results are of the standard analysis.

Signature: _____
Date: _____

Figure 11.1: (ANALYTICAL)

SHREE B H KANKARWADI AYURVEDIC PHARMACEUTICALS
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Registration No.: 1234567890
Date: 2024-07-15
Sample Qty: 100ml

TEST REPORT
(The Charge of Certificate, for Test and for the Test Item only)

Test for specified Micro-Organisms (Qualitative)	LIMITS (As per IP)	RESULTS
E. coli	Not to exceed	Absent
S. aureus	Not to exceed	Absent
P. aeruginosa	Not to exceed	Absent
S. albicans	Not to exceed	Absent

Microbial limit test (Quantitative)	LIMITS (As per IP)	RESULTS
Total Bacterial Count	10 ⁶ - 10 ⁸ (CFU/ml)	10 ⁶ CFU/ml
Total Fungal Count	10 ³ - 10 ⁵ (CFU/ml)	10 ³ CFU/ml

(Standards referred please are as per IP/In house Specifications)
* In my opinion the sample is standard quality

Signature: _____
Date: _____

Figure 11.2: (ANALYTICAL)

DISCUSSION:

Abhayadi Taila is an uncommon ayurvedic formulation wherein a study has not been done henceforth there is a need for the preparation and analytical study of this formulation.

Abhayadi Taila is a formulation taken from classical text *Vaidyasara Sangraha - Ekadasha Prakarana* 68 and an attempt has been made as per classical references to prepare this formulation.

This preparation is meant to be use in the 8 types of *Oshta Roga* and contains *Tila taila*, *Haritaki*, *Nimba*, *Nirgundi* and *Haridra*; the ingredients were easily available and were sent for authentication. The preparation was simple and cost effective too.

Tila taila was taken in a vessel and slightly heated, *nimba patra swarasa*, *Nirgundi swarasa* and *haritaki phala kashaya* were added as *drava dravya* and *haridra churna* as *kalka* was added and the flame was maintained from mild to medium flame till *khara paka* was attained and filtered through a dry thin muslin cloth in a vessel and allowed to cool.

There was a manual loss of 30ml of *taila* and the total quantity of *taila* was 190ml. The final product was stored in a 200ml container where 100 ml was packed in roller bottles and labelled and 50ml was taken in another container and subjected for Analytical Study.

The loss on drying indicates the moisture content in the sample which at 110° C of *Abhayadi Taila* was valued to be 0.123%.

Saponification value is collectively used to determine the average molecular weight of the oil and fat and *Abhayadi Taila* was valued at 203.7.

The iodine value determines the double bonds present in oil and fats. The higher the iodine value, the more unsaturation are present in the fat. The prepared *Abhayadi Taila* was valued at 88.879.

The refractive index indicates the possible chances of rancidity development in oil. The refractive index of *tila taila* is 1.47 and the refractive index of *Abhayadi Taila* at 40° is 1.478.

Specific gravity indicates the presence of solute content in the solvent. Specific gravity of plain *tila taila* is 0.90 - 0.92 and the specific gravity of *Abhayadi Taila* is 0.920.

The acid value indicates presence of free fatty acid in the oil which is responsible of rancidity of compounds; higher the free fatty acid more is the rancidity, this helps to decide the shelf life of the oil. The acid value is the number which is expressed in mg, the amount of KOH necessary to neutralize the free acid present in 1mg of substance. The acid value of *Abhayadi Taila* was 2.583.

The *taila* was also tested for the microbial limit test and total microbial and fungal count. For micro-organisms the test showed absent, for total bacterial count it is 59 cfu/ml which is in acceptable range and for total fungal count is 06 cfu/ml which is less than the accepted range.

CONCLUSION:

Abhayadi taila is an uncommon *snehapaka* preparation which is used in 8 types of *Oshta Rogas*. The quantity of the ingredients and the method of preparation is not mentioned henceforth an attempt was made to prepare and assess quality control parameters of *Abhayadi taila* mentioned in *Sharangadhara* [3] and *Ashtanga Hrudaya* [4].

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