Research Article.

International Research Journal of Ayurveda & Yoga

An International Peer Reviewed Journal for Ayurveda & Yoga

Pharmaceutico- Analytical Study of *Masha Taila*

Rakesh Bishnoi[1], Shamsa Fiaz[2]

VOLUME 4 ISSUE 6

1. Ph.D. (Ayu.), P.G. Department of *Shalakya Tantra*, N.I.A. - Jaipur.
2. Professor & HOD, P.G. Department of *Shalakya Tantra*, N.I.A. - Jaipur.

Corresponding Author:- Rakesh Bishnoi, Ph.D. (Ayu.), P.G. Department of Shalakya Tantra, N.I.A. - Jaipur.

Article received on 21 May 2021 Article Accepted 25 June 2021 Article published 30 June 2021

ABSTRACT: -

Background – *Masha Taila* is an *Ayurvedic* formulation used for *Urdhwajatrugata Vyadhi*. Present study is attempted to develop some newer approaches for the quality control and standardization of *Masha Taila*.

Material and methods - The present study was designed to standardize an *Ayurveda* formulation, *Masha Taila*, by evaluation of its organoleptic, physico-chemical and chromatographic parameters.

Result- The organoleptic analysis of *Masha Taila* reveals its pale-yellow colour and characteristic odour. Physico-chemical study reveals Moisture content-0.25 %, Density-0.93018 gm/ml, Sp. Gravity-0.93297, Refractive index-1.3758, Total Fat Content -90.45%, Iodine value-2.07, Saponification value- 124.76, acid value- 1.288%, Peroxide value-4.134, Viscosity- 27.2245. In TLC, Rf values were found 0.98, 0.91, 0.41, 0.38, 0.25, 0.2 when visualized under iodine vapour.

Conclusion – This study may aid as a reference for standardization and quality control analysis of *Masha Taila* in further researches.

Key words – *Masha Taila*, standardization, quality control.

How to cite this article: Bishnoi R, Fiaz S "Pharmaceutico- Analytical Study Of *Masha Taila*" . IRJAY. [Online] 2021;4(6): 9-14.
Available from: http://irjay.com ; **DOI: https://doi.org/10.47223/IRJAY.2021.4602**

INTRODUCTION

Masha Taila is described in *Bhaishajyaratnavali* and a best remedy for *Urdhwajatrugata Vyadhi* (supra-clavicular diseases). It can be used as *Pana* (internal application), *Abhyanga* (external application) and *Basti* (enema). It is indicated in *Pakshaghata* (Paralysis), *Ardita* (Facial paralysis), *Karnashoola*, (Otalgia), *Mandashruti* (Hearing loss), *Ashravana* (Deafness), *Timira* (Cataract), *Hastakampa*, *Shirahkampa* (Parkinsonism), *Vishvachi*, *Avabahuka* (Frozen Shoulder), *Kalayakhanjaka*, main ingredients are *Masha*, *Tila Taila* and *Godhugdha*. Other than this *Masha Taila* have 18 ingredients[1]. Maximum drugs having *Madhura Rasa* and some are *Katu* and *Tikta Rasa*, *Guru*, *Snigdha* and *Tikshana Guna*, *Ushna Veerya* and having *Vatashamaka* property. Ingredients of this formulation are having *Vatahara*, *Balya*(toner), *Rasayana*(rejuvenator), *Medhya*(nootropic drugs), *Brinhana*, *Vrishya*(aphrodisiac), *Nadibaladayaka* etc. properties, which helps in breakdown of the pathogenesis of *Badhirya* (deafness). According to modern pharmacology these drugs are having CNS stimulant, antioxidant, anti-inflammatory, antistress etc. properties.

Physico-chemical parameters, macroscopy, microscopy and TLC are the basic criteria for to evaluate the quality of medicines. The present study was planned to standardize the *Masha Taila* by analyzing different quality control parameters.

MATERIAL AND METHODS

Collection of Raw drugs

The ingredients of *Masha Taila* (Table 1) were collected from the pharmacy of National Institute of Ayurveda, Jaipur after proper identification.

Table 1: Contents of *Masha Taila* *(Bhaisajya Ratnavali, Vatavyadhi Rogadhikara 26/523-527)*

S. No.	Drug Name	Latin Name /Scientific Name	Part used	Quantity
1.	*Jivaka*(Vidarikanda)*	*Pueraria tuberosa*	Tuber	781 gm
2.	*Rishabhaka* (Vidarikanda)*	*Pueraria tuberosa*	Tuber	781 gm
3.	*Meda*(Satavari)*	*Asparagus racemosus*	Root	781 gm
4.	*Mahameda*(Satavari)*	*Asparagus racemosus*	Root	781 gm
5.	*Kakoli*(Ashvagandha)*	*Withania somnifera*	Root	781 gm
6.	*Kshirkakoli*(Ashvagandha)*	*Withania somnifera*	Root	781 gm
7.	*Ridhi*(Varahikanda)*	*Dioscorea bulbifera*	Tuber	781 gm
8.	*Vridhi*(Varahikanda)*	*Dioscorea bulbifera*	Tuber	781 gm
9.	*Shatapuspa*	*Foenieulum vulgare*	Fruit	781 gm
10.	*Saindhava*	Sodium chloride	Complete	781 gm
11.	*Rasna*	*Pluchea lancelata*	Leaves	781 gm

12.	*Aatmagupta*	*Mucuna prurita*	Seed	781 gm
13.	*Mulethi*	*Glycyrrhiza glabra*	Stolon/ Root	781 gm
14.	*Bala*	*Sida cordifolia*	*Panchanga*	781 gm
15	*Shunthi*	*Zingiber officinale*	Rhizome	781 gm
16	*Maricha*	*Piper nigrum*	Fruit	781 gm
17	*Pippali*	*Piper longum*	Fruit	781 gm
18	*Gokshura*	*Tribulus terrestris*	Fruit	781 gm
19	*Masha*	*Vignamungo*	Seed	50 kg
20	*TilaTaila*	-	Seed oil	50 lit
21	*Godugdha*	-	-	200 lit

These are drugs of *Ashtavarga* which are not available in present time, so their *Pratinidhi* drugs will be used for preparation of the formulation.

Preparation of *Masha Taila*

The drug (Batch no. C-141) was prepared in the pharmacy of National Institute of Ayurveda, Jaipur. For preparation of *Masha Kwatha*, *Yavakuta* of *Masha* was boiled with four fold of water and reduced it up to one fourth. For preparation of *Kalka*, paste of all above *Kalkadravya* has been made. Then *Masha Kwath*, *Kalka*, *Tila Taila* and *Ksheera*, all cooked together in *Mandagni*, till *Samyaka Snehapaka Lakshana* occurs.

Then the analytical study of the finished drug *Masha Taila* was performed in the Laboratory of P.G. Department of *Dravyaguna Vigyan*, National institute of Ayurveda, Jaipur.

Macroscopic study:

The collected sample was studied organoleptically i.e. with the help of sense organs and various parameters like colour, touch and odour of the finished product were observed and recorded.

Physico-chemical study

Different Analytical tests have been performed for *Masha Taila* to determine the Moisture Content,[2] Density,[3,4] Refractive Index,[5] Total Fat Content,[6] Sp. Gravity, Iodine value, Saponification value, Acid value, Peroxide value[7] by using standard methods.

Thin layer Chromatography[8]

Thin layer Chromatography is a tool for separation and identification of chemical constituent. Thin-layer chromatography is a technique in which a solute undergoes distribution between two phases, a stationary phase acting through adsorption and a mobile phase in the form of a liquid.

Prepared sample of *Masha Taila* is used for spotting. T.L.C. plate coated with 0.25 mm layer of silica gel 60 F_{254} with fluorescent

indicator was used. Plates were dried in hot oven at 105^0 C for one and half hour. Mobile solution was prepared using Chloroform: Hexane (5:5) and visualized in iodine vapours and the distance of each spot from the point of its application was measured and Rf. Values were calculated.

RESULTS

Results of organoleptic examination of *Masha Taila* are shown in Table 2. Results of different analytical tests of *Masha Taila* are shown in table 3. Results of thin layer Chromatography and different Rf values of *Masha Taila* are shown in table 4.

Table 2: Organoleptic parameters of *Masha Taila*

S. No	Macroscopic study	*Masha Taila*
1	Colour	Pale yellow
2	Odour	Characteristic
3	Taste	oil

Table 3: Results of different analytical tests of *Masha Taila*

Sr. No.	Test	Result
1.	Moisture content	0.25 %
2.	Density	0.93018 gm/ml
3.	Sp. Gravity	0.93297
4.	Refractive index	1.3758
5.	Total Fat Content	90.45%
6.	Iodine value	2.07
7.	Saponification value	124.76
8.	Acid value	1.288%
9.	Peroxide value	4.134
10.	Viscosity	27.2245 poise

Table 4: Results of Thin layer Chromatography of *Mash taila*

Sample	Distance of Solvent	Distance of Spot	Rf Value	Image
Masha Taila	6.0cm	5.9cm,5.5cm,2.5cm, 2.3cm,1.5cm,1.2cm,	0.98,0.91,0.41, 0.38,0.25,0.2,	

DISCUSSION

Standardization is the process of evaluation of the quality and purity of crude drugs and finished products by means of various parameters like morphological, microscopical, physical, chemical and biological observations.[9] Standardization starts right from the collection of raw materials up to their clinical application of finished product. In case of *Ayurveda* medicines, the therapeutic efficacy is also related to its chemical constituents. The quality and purity refer to the total profile of the drug rather than any of its character. Therefore, a multidimensional approach is essential for standardizing an *Ayurveda* drug.

In present study standardization of *Masha Taila* was done by the means of organoleptic characters, different analytical techniques like moisture content, refractive index, viscosity, density, saponification value, iodine value, acid value, peroxide value etc. and thin layer chromatography.

The organoleptic analysis of *Masha Taila* reveals its pale-yellow colour, characteristic odour and oil like taste which aids in its preliminary quality assessment. Analytical test like Moisture content, density, viscosity, acid value, saponification value, peroxide value, iodine value are peculiar analytical tests for any oil preparation. These are also important for quality and purity assessment of *Masha Taila*. Thin layer chromatography (TLC) is a technique used to separate and identify the chemical constituents present in a formulation. Therefore, *Masha Taila* was subjected to chromatographic analysis by TLC method for assurance of its quality and purity.

CONCLUSION

Standardization of different *Ayurveda* formulation on different physico-chemical parameters is the need of time as *Ayurveda* is gaining interest among general people and used extensively. So quality assurance promises safety and efficacy of any *Ayurveda* formulation. Therefore, organoleptic, physico-chemical and chromatographic analysis of *Masha Taila* showed in the present study. As there is no any study found regarding standardization of *Masha Taila* in public domain, this study may aid as a reference for standardization and quality control analysis in further researches.

Acknowledgment: Nil.
Financial Support: Nil.
Conflict of Interest: Nil

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