E-ISSN:2456-3110

Research Article

Jalodarari Rasa

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Journal of Ayurveda and Integrated Medical Sciences

2025 Volume 10 Number 6 JUNE

Publisher

Maharshi Charaka Ayurveda

www.maharshicharaka.in

Pharmaceutical Analytical Standardization of Jalodarari Rasa

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DOI:10.21760/jaims.10.6.14

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It's been challenging now a days to treat liver disorders particularly liver cirrhosis with an modern treatment therefore here an attempt is made to formulate Jalodarari Rasa using one part of Tamra Bhasma, Pippali, Haridra Choorna, Maricha, Four part of Shuddha Jayapaal Beeja and SnuhI Ksheera quantity sufficient by referring book Rasendra Chintamani written by Kaviraj Shri Dhunduka Nath and also Analyse the various physico chemical properties to establish the standard for the preparation and use of Jalodarari Rasa. Jalodarari Rasa was prepared and sent for analysis of quantitative and qualitative parameters using XRD, XRF, and CHNS techniques. All results met standard values. Additional tests conducted included loss on drying, ash value, pH, water-soluble extract, acid-insoluble ash, particle size distribution, and elemental content. The respective results were: 0.15%, 98.08%, 4.95, 0.77%, 2.3%, and 28.70 µm.

Keywords: Jalodarari Rasa, Shodhana, Marana, Pharmaceutical Analytical Standardization

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How to Cite this Article

Jeeru S, Amit, Pharmaceutical Analytical Standardization of Jalodarari Rasa. J Ayu Int Med Sci. 2025;10(6):98-103.

Available From

https://jaims.in/jaims/article/view/4230/

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Conflict of Interest	Funding	Ethical Approval	Plagiarism X-checker	Note
None	Nil	Yes	13.36	

Introduction

Jalodarari Rasa is a classical *Khalviya Rasayana* described in *Rasendra Chintamani.* It contains *Tamra Bhasma, Pippali, Haridra Choornam, Sudha Jayapal Beeja, Maricha* in 1:1:1:4:1 proportion. As such *Jalodara* is characterized by Ascites with a background of Liver Cirrhosis which is considered as one of *Maha Roga* in Ayurveda and the drug *Jalodarari Rasa*, which is effective in the management of *Jalodara.***[1]** The selected topic is an attempt to study and find out the simple, effective and economic preparation of *Jalodarari Rasa* and analyzing various physico chemical properties of the preparation for the standardization.

Materials and Methods

Preparation of *Jalodarari Rasa*[1] was prepared by using the material 50gms of *Tamra Bhasma*, 50gms of *Pippali*, 50gms of *Haridra Choornam*, 200gms of *Sudha Jayapala Beeja*, 50gms of *Maricha* and *Snuhi Ksheera* using an equipment *Khalva Yantra* with the procedure by taking 1:1:1:4:1 proportion of *Tamra Bhasma, Pippali, Haridra Choornam, Shudha Jayapala Beeja*, *Maricha* in a *Khalva Yantra* and powdered separately. Then it was mixed and triturated with sufficient quantity of *Bhavana Dravya Snuhi Ksheera*. Trituration was continued till the mass attains a viscous and semisolid state. After giving *Bhavana,* when mass became viscous and semisolid, round small sized *Vati-like* structure was prepared and kept them in a plate for drying for one day. Once the mixture was found greenish yellow triturate mixture 30 minutes until it turns into Dark grey color, desire fitness of mixture like Spillage of mixture with dusting was observed after six hours.

Analytical Study

In present study sample is collected at completion of preparation & subjected to ancient & modern analytical methods i.e., Physico-Chemical**[2,3]**, Qualitative & Quantitative analysis for *Bhasmas* like *Varna* (Colour) *Gatarasatvam* (Liquid), *Sparsha* (touch), *Gandha* (Smell), *Rekhapurnatva, Varitaratva, Nischandratvam, Amlapareeksha.*

Total Ash**[4]** calculation was done by taking about 2 gms accurately weighed, grounded drug in a previously tarred silica dish, previously ignited and weighed. Scatter the grounded drug in a fine even layer on the bottom of the dish. Incinerate by gradually increasing the heat not exceeding dull red heat (450°C) until free from carbon. Cool and weigh. Calculate the percentage of ash with reference to air dried drug.

Acid insoluble ash**[5]** value done by taking with dilute HCl filtered through Whatman no. 42 filter paper. The residue was washed with hot water till it was free from chloride. The residue was taken in a crucible, dried & ignited at a low temperature. Calculated the percentage of acid insoluble ash with reference to the moisture free drug.

Loss on drying**[3]** was performed by taking 1gm of accurately weighed sample and heated on electric oven up to 110°c and again weighed, the difference in weight was calculated by Initial weighed-weighed after 110°c=-gram.

NPST**[6]** Whole procedure is carried out in four steps 1) Impregnation of Whatman's paper No. 1. 2) Preparation of solution of *Jalodarari Rasa*. 3) Dropping of supernatant fluid 4) Recording the observations Impregnation of Whatman's paper Done by taking 14 cm x 8 cm sizes four-what man's paper No.1. 40 ml of potassium Ferro cyanide solution to be taken into stainless steel tray and what man's paper pieces were uniformly dipped one after the other. Then the paper to be dried on a clean glass sheet taking care to ensure that there should not be any air bubble or space between the glass sheet and paper. In the form potassium iodide paper where prepared. Preparation of solution of *Jalodarari Rasa* done by taking 0.5mg *Jalodarari Rasa* to be added to the tube. Then 0.5 ml of con. HCl to be dropped in test tube then the solution to be transferred into semi micro test tube. The first phase carried out for 5mins, second is carried out for 20mins and then six test tubes to be kept for 24 Hrs. to allow the reaction. Before 24 Hrs. third phase is taken. Dropping of supernatant fluid After solution becomes clear, a drop of supernatant solution from test tube to be carefully taken by a dropper and to be dropped on separate 5 % potassium Ferro cyanide and potassium iodide papers, time to be noted. Recording observations These spots to be studied in three phases in natural light away from direct sunlight. The first phase of reaction extends from very moment of formation of spot till end of 5th minute. This phase is so called "Immediate reaction" The second phase of reaction extends thereafter up to 20th minute. This phase Is called "Delayed reaction".

The third phase extends from 20th minute to 24 hrs or above. This phase is called as "Late reaction". Division of spot are as It can be divided into three imaginary areas based on difference in colours Central spot– Central area of the spot Middle area– Central spot to outer periphery Outer periphery– The margin of the spot which is outer most.

1: Ingredients of Jalodarari Rasa

2: Mixing all ingredient

3: Homogenous mixture of Jalodarari Rasa

4: Collection of Snuhi Ksheera

5: Bhavana of Snuhi Ksheera

6: Jalodarari Rasa

Figure 1: Preparation of *Jalodarari Rasa*

Observations and Results

Table 1: After Formulation of *Jaladorari Rasa*

Initial weight of mixture(Tamra Bhasma, Maricha, Pippali, Haridra Choornam, Sudhajayapala Beeja)	400gms.
Weight after Bhavana of Snuhi Ksheera	510gms.
Weight of dried Gutikas	415gms.
Final weight of Jalodarari Rasa after powdering	412gms.

Table 2: Showing Analysis of *Bhasmas* by Ancient method

SN	Test	Bhasma	Observation
1.	Varna[7]	Jalodarari Rasa	Dark Grey
2.	Gatara Satvam (Rasa)	Jalodarari Rasa	Non-Perceivable
3.	Sparsha (Slakshnatvam and Mrudutvam)	Jalodarari Rasa	Mrudutva and Slakshnatva was felt by simple touch with fingertips.
4.	Gandha	Jalodarari Rasa	Non-Perceivable
5.	Rekhapurnatva[8]	Jalodarari Rasa	Penetrates into the furrows of the fingers-Positive.

Table 3: Showing the Physical analysis of *Bhasma*

Parameters	Jalodarari Rasa
Loss on drying (LOD) (%w/w)	0.15
Ash Value (%w/w)	98.08
Water soluble extract (%w/w)	0.77
Acid insoluble ash (%w/w)	2.33
pH (1% solution)	4.95
Phase identification (XRD)	CuS

Table 4: Showing the Chemical analysis of *Bhasmas*

SN	Chemical	Jalodararirasa
1.	Copper (Cu)	59.46
2.	Mercury (Hg)	--
3.	Sulphur (S)	22.43
4.	Iron (Fe)	0.35
5.	Arsenic (As)	--

Table 5: Showing the NPST test

Reagent	Reacting paper	Observation of The Color		
		1st phase	2nd phase	3rd phase
Jalodarari Rasa with HCL	5% KI	At the end of first phase light brownish color appears at center with slight brownish green periphery enclosed with Green margin	After 15 min of the first phase, the light Brownish color spot becomes Lighter. The brownish periphery Should became	At the end of 24hrs, Central spot with light brown color with moderate brownish periphery with moderately Wide greenish
Jalodarari Rasa with 5N HNO3	10% KI	At the end of first phase Dark brown color appears at center with slight white periphery enclosed light brown margin	After 15min of the first phase, the Dark brown color spot remains as itis. The brownish periphery should become slightly intense light Brown	At the end of 24hrs, Central spot with dark brown color with moderate whitish periphery with moderately wide brownish

Table 6: XRF analysis of *Jalodarari Rasa*[9]

Characteristic	Wt%
CuO	59.46%
S	22.4%
CaO	1.52%
Fe2O3	0.15%
MgO	0.15%
SiO2	0.05%
K2O	0.21%
SO3	0.14%
BaO	0.04%
P2O5	0.04%
NiO	0.01%
BaO	0.03%
SrO	0.01%
ZnO	Not detected
Mn	Not detected
Al2O3	0.02%
WO3	Not detected
Organic matter	96.83%

Table 7: XRF analysis of *Jalodarari Rasa*[9]

Characteristic	Wt%
CuO	59.46
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SO3	0.14%
BaO	0.04%
P2O5	0.04%
NiO	0.01%
BaO	0.03%
SrO	0.01%
ZnO	Not detected
Mn	Not detected
Al2O3	0.02%
WO3	Not detected
Organic matter	96.83%

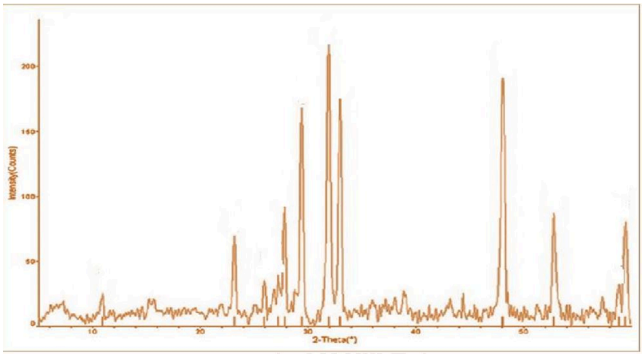

Figure 2: XRD graph of Jalodarari Rasa[10]

Discussion

Before preparing Homogenous mixture all ingredient were powdered separately based on practical experience proper mixing of ingredients was finalized. The Homogenous mixture i.e., 1:1:1:4:1 proportion of *Tamra Bhasma, Pippali, Haridra Choornam, Shudha Jayapala Beeja, Maricha* were taken in *Khalva Yantra* & powdered separately Then it was mixed & triturated with sufficient quantity of *Bhavana Dravya Snuhi Ksheera*. Trituration was continued till mass attains viscous & semisolid state. As per *Ayurvedic* classics analysis of *Jalodarari Rasa* is as follows. Dark grey colour powder with pungent smell, soft in touch. *Jalodarari Rasa* has been subjected to modern physical analysis in which loss on drying was 0.15% w/w, ash value 98.08% w/w, water soluble extract 0.77%w/w, acid insoluble ash 2.33% w/w, pH 4.95 & phase identification by XRD reviled presence of CuS test conducted on *Jalodarari Rasa* has shown Copper as Cu to extent of 59.46% Estimation of Mercury & Iron was done on *jalodarari Rasa*, in which 0.35% of Mercury was found & 0.35% of Iron (Fe)

The estimation of Sulphur present in *Jalodarari Rasa* was done in which 22.43%of Sulphur has been found. Aresenic not be detected in *Jalodarari Rasa* NPST showed *Jalodarari Rasa* with 5N HNO_3 on 10% Potassium Iodide paper has shown mild traces of Mercury by means of slight pink coloured spot and presence of *Tamra* has seen on *Jalodarari Rasa* with hydrochloric acid solution has shown presence of Copper on 5% Potassium Iodide paper. XRD has shown Presence of Copper as CuS in *Jalodarari Rasa*. The XRF analysis of *Jalodarari Rasa* reviled 59.46% of Copper as CuO, 22.4% of Sulphur as S and remaining Cao, Fe_2O_3, MgO, SiO_2, K_2O, SO_3, BaO, P_2O_5, NiO, SrO, Al_2O_3, and organic matter in quantity of (in percentage) 1.52, 0.15, 0.15, 0.05, 0.21, 0.14, 0.04 ,0.04, 0.01,0.01, 0.02 and 96.83 respectively. SEM showed 20µm in magnification of 698X, 2µm in magnification of 5.76KX, 10µm in magnification of 2.81KX, 2µm in magnification of 9.29KX. CHNS analysis shown presence of maximum peak of Carbon and minimum presence of Nitrogen, Hydrogen and Sulphur.

Conclusion

Jalodarari Rasa of *Rasendra* Chintamani (9/12-14) can be considered as available formulation that can be easily prepared.

In any case *Tamra Bhasma* should not be subjected to more heat than the capacity of 700 cow dungs for 500gms of *Tamra. Parada* is purified by the method instructed in *Rasa Tarangini* 6/107. *Gandhaka* purification is best achieved by following the method explained in Rasa Tarangini 8/7-11. *Jayapala Sodhana* is done with the method described under the reference Rasa Tarangini 24/313. After mixing all the Ingredient in the *Khalva Yanta* trituration with *Snuhi Ksheera* took almost 1 full day i.e. 10 hrs for homogenization of mass. The presence of copper was up to 59.46% in the *Jalodarari Rasa* i.e. mainly copper compound formulation was seen while no traces of Mercury were found in this formulation. The particle size was well within the limit of absorbability.

References

1. Nath AD. Rasendra Chintamani. Mishra SN, editor. Reprint ed. *Varanasi: Chaukhamba Orientalia; 2006. Chapter 9, Sloka 12–14, p. 310 [Crossref][PubMed][Google Scholar]*

2. Kokate CK, Purohit AP, Gokhale SB. Pharmacognosy. 42nd ed. Pune: Nirali Prakashan; 2008. *p. 63 [Crossref][PubMed][Google Scholar]*

3. Anonymous. The Ayurvedic Pharmacopoeia of India. Part 2, Vol. 2, Appendices. *1st ed. New Delhi: Government of India, Ministry of Health and Family Welfare; 2008. p. 15–7 [Crossref][PubMed][Google Scholar]*

4. Anonymous. The Ayurvedic Pharmacopoeia of India. Part 2, Vol. 4. *New Delhi: Government of India, Ministry of Health and Family Welfare, Dept. of AYUSH; 117 p [Crossref][PubMed][Google Scholar]*

5. Anonymous. The Ayurvedic Pharmacopoeia of India. Part 1, Vol. 4. *New Delhi: Government of India, Ministry of Health and Family Welfare, Dept. of AYUSH; 159 p [Crossref][PubMed][Google Scholar]*

6. Sharma R, Rathore S, Anitha D. A critical review on Namburi phase spot test. Int J Ayurveda Pharma Chem. 2022;7(4). *[Crossref][PubMed][Google Scholar]*

7. Lakshmipati Shastri. Yogaratnakara. Vidyotini Hindi commentary. 7th ed. *Varanasi: Chaukhamba Sanskrit Sansthan; 2002. Sapta Dhatuvarna. p. 128 [Crossref][PubMed][Google Scholar]*

8. Kulkarni DA. Samuchchaya. Vidnyanabodhini Hindi commentary. New Delhi: Meharchand Lachhmandas Publications; 1998. *8(27):148 [Crossref][PubMed][Google Scholar]*

9. Carleton College. X-ray fluorescence (XRF). [Internet]. Northfield (MN): Science Education Resource Center at Carleton College; [cited 2025 Jul 10]. *Available from: [Article][Crossref][PubMed] [Google Scholar]*

10. Anonymous. The Ayurvedic Pharmacopoeia of India. Part 1, Vol. 10. *New Delhi: Government of India, Ministry of Health and Family Welfare, Dept. of AYUSH; p. 50–1 [Crossref][PubMed][Google Scholar]*