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# Pharmaceutical Standardization of *Saptamrita Lauha*

Pranav K. Shah, L. B. Singh<sup>1</sup>, P.U. Vaishnav<sup>2</sup>, Bharat Kalsariya<sup>3</sup>

Post Graduate Scholar, Dept. of R.S. & B.K., J.S. Ayurveda College, Nadiad. <sup>1</sup>Professor & Director, Sundar Ayurveda Teaching Pharmacy, <sup>2</sup>Principal & HOD of R.S. & B.K., <sup>3</sup>Reader, Department of R.S. & B.K., J.S. Ayurveda College, Nadiad, Gujarat, India.

## ABSTRACT

*Shalaky Tantra* is a one of the branch of *Ashtanga Ayurveda* and *Netra Chikitsa* is a part of *Shalaky Tantra*. There are so many formulations are mentioned in the treatment of *Netra Roga* by oral route as well as external application, *Saptamrita Lauha* is one of them. It is a very popular, very safe and effective formulation for eye diseases. In *Ayurveda* classics there are so many references are available for *Saptamrita Lauha*. These formulation are mainly described in *Netra Roga* and *Shoola Roga* in almost all the books. In majority references *Saptamrita Lauha* powder is taken with *Anupana* or *Sahapana* of honey and ghee. Sundar Ayurveda Teaching Pharmacy is also manufacturing many batches of *Saptamrita Lauha* with the reference from *Bheshaja Samhita*, chapter 4/54, *Loha* and *Mandura Kalpana* and follow the in house quality control parameters to standardized the medicine in large scale production. The particle size of *Saptamrita Lauha* is 3.2  $\mu\text{m}$  to 3.8  $\mu\text{m}$ , pH from 6.0 to 6.9, loss on drying from 1.2 % to 1.8%, ash value 16.2 %w/w to 24.5 %w/w, acid insoluble ash value from 2.6 %w/w to 3.6 %w/w, alcohol soluble extractive value from 42.9% v/w to 47.7 %v/w, water soluble extractive value from 21.1 % to 26.8%. Phyto-chemical screening of *Saptamrita Lauha* shows Glycoside, Amino acid, Protein, Carbohydrate, Flavanoid, Tannin, Steroid, Saponin and Alkaloid were present in all batches. On the basis of this study it's clear that, if we follow the same procedure with authentic drugs then large scale production also having Quality assurance.

**Key words:** *Saptamrita Lauha*, S.M.P., *Netra Roga*, Large scale production.

## INTRODUCTION

*Ayurveda* the codified system is evolved from Lord Brahma to serve the specific function related from the life of human beings is – To maintain the health of healthy individual care of disease of patient. *Ayurveda*

### Address for correspondence:

Dr. Pranav K. Shah

Post Graduate Scholar, Dept. of RS & BK,

J.S. Ayurveda College, College road, Nadiad, Gujarat, India.

E-mail: drpranav\_ks@yahoo.co.in

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in a nutshell consists of three principle viz - *Hetu* (etiology), *Linga* (symptomatology) and *Aushadha* (therapeutic). Etiology have includes the immediate and distant causes of diseases while the symptomatology includes the entire signs and symptom of disease and health, whereas therapeutics includes the knowledge regarding drugs in *Toto*. *Saptamrita Lauha* is a very popular formulation in the society. Everyone knows it is a very safe and effective formulation for eye diseases. In *Ayurveda* classics there are so many references are available for *Saptamrita Lauha*. <sup>[1],[2],[3],[4],[5],[6],[7],[8]</sup> This formulation is mainly described in *Netra Roga* and *Shoola Roga Adhikara* in almost all the books. In majority formulation *Saptamrita Lauha* powder is taken with *Anupana* or *Sahapana* of honey and ghee. Sundar Ayurveda Teaching Pharmacy is also manufacturing many batches of *Saptamrita Lauha* with the reference

from *Bheshaj Samhita*, chapter 4/54, *Loha and Mandura Kalpana*.<sup>[10]</sup> This formulation is widely use by the *Vaidyas* that's why this topic was selected for the quality assurance of the *Saptamrita Lauha* in large scale production.

## OBJECTIVES

To develop Standard Manufacturing Process of *Saptamrita Lauha* and to develop the in house quality control parameters of *Saptamrita Lauha*.

Each process has to follow scrupulously in terms of

1. Effective
2. Efficiency
3. Validity
4. Safety
5. Economy

Validation is defined as a procedure that demonstrates the ability of consistently producing a product with established specifications under ideal conditions.

## MATERIALS AND METHODS

### Preparation of *Saptamrita Lauha*

Raw drugs of *Saptamrita Lauha* were identified and authenticated by the drug selection committee of Sundar Ayurveda Teaching Pharmacy, then prepared the *Yavakuta* (coarse powder) of all the ingredients by hammer mill, then prepared the *Churna* (fine powder) by the pulverizer and sieved it (sieve no. 80) by sieving and grinding machine .

**Table 1: Showing the 3 batches of *Saptamrita Lauha*.**

S N	Drug	Latin name	Batch 1	Batch 2	Batch 3
1	<i>Haritaki</i>	<i>Terminalia chebula</i>	1 Kg	1 Kg	1 Kg
2	<i>Bibhitaki</i>	<i>Terminalia</i>	1 Kg	1 Kg	1 Kg

		bellirica			
3	<i>Amalaki</i>	<i>Emblica officinalis</i>	1 Kg	1 Kg	1 Kg
4	<i>Ela</i>	<i>Elettaria cardamomum</i>	1 Kg	1 Kg	1 Kg
5	<i>Yashtimadhu</i>	<i>Glycyrrhiza glabra</i>	1 Kg	1 Kg	1 Kg
6	<i>Twak</i>	<i>Cinnamomum zeylanicum</i>	1 Kg	1 Kg	1 Kg
7	<i>Lauha Bhasma</i>	Finished product	1 Kg	1 Kg	1 Kg

### Analysis of *Saptamrita Lauha*

For the in house quality control of *Saptamrita Lauha*, the Organoleptic parameters like colour, odour, taste; physico-chemical parameters like pH, particle size, ash value, extractive values, loss on drying and Phytochemical screening was done.

## OBSERVATION AND RESULTS

**Table 2: Showing the yield of different batches of *Saptamrita Lauha*.**

SN	Drug	Batch 1	Batch 2	Batch 3
1	<i>Haritaki</i> ( <i>Terminalia chebula</i> )	1 Kg	1 Kg	1 Kg
2	<i>Bibhitaki</i> ( <i>Terminalia bellirica</i> )	1 Kg	1 Kg	1 Kg
3	<i>Amalaki</i> ( <i>Emblica officinalis</i> )	1 Kg	1 Kg	1 Kg
4	<i>Ela</i> ( <i>Elettaria cardamomum</i> )	1 Kg	1 Kg	1 Kg

5	<i>Yashtimadhu</i> (Glycyrrhiza glabra)	1 Kg	1 Kg	1 Kg
6	<i>Twak</i> (Cinnamomum zeylanicum)	1 Kg	1 Kg	1 Kg
7	<i>Lauha Bhasma</i>	1 Kg	1 Kg	1 Kg
	Yield	6.8 Kg	6.7 Kg	6.7 Kg

**Table 3: Showing the Organoleptic parameters of Saptamrita Lauha.**

SN	Parameters	Batch 1	Batch 2	Batch 3
1	Colour	Light brown	Light brown	Light brown
2	Order	Pleasant	Pleasant	Pleasant
3	Taste	Astringent	Astringent	Astringent

**Table 4: Showing the Physico-chemical parameters of Saptamrita Lauha.**

SN	Parameters	Batch 1	Batch 2	Batch 3
1	Particle size ( $\mu\text{m}$ ) <sup>[11]</sup>	3.2 $\mu\text{m}$	3.8 $\mu\text{m}$	3.5 $\mu\text{m}$
2	pH (10% aqueous solution) <sup>[12]</sup>	6.0	6.5	6.9
3	Ash Value (% w/w) <sup>[13]</sup>	16.2	24.5	18
4	Acid-insoluble Ash value (% w/w) <sup>[14]</sup>	3.6	2.6	3.0
5	Alcohol soluble extractive value (%v/w) <sup>[14]</sup>	42.9	47.7	45
6	Water soluble extractive value (% v/w) <sup>[14]</sup>	23.7	21.1	26.8

7	Loss on Drying (%) <sup>[14]</sup>	1.2	1.8	1.8
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**Table 5: Showing the Phyto-chemical screening<sup>[15]</sup> of Saptamrita Lauha.**

SN	Parameters	Batch 1	Batch 2	Batch 3
1	Glycoside	Present	Present	Present
2	Amino acid	Present	Present	Present
3	Protein	Present	Present	Present
4	Carbohydrate	Present	Present	Present
5	Flavanoid	Present	Present	Present
6	Tannin	Present	Present	Present
7	Steroid	Present	Present	Present
8	Saponin	Present	Present	Present
9	Alkaloid	Present	Present	Present

## DISCUSSION

*Saptamrita Lauha* formulation is also known as *Sarvachurnasamm Loham* or *Saptamrut Gutti*. Most of the references of *Saptamrita Lauha* having five ingredients i.e. *Haritaki*, *Bibhitaki*, *Amalaki*, *Yastimadhu*, *Lauha Bhasma* with *Anupana/Sahapana* of Honey and *Ghee*. In *Bhruhad Yoga Tarangini*, there are *Swarna Makshika*, *Vidanga*, *Shuddha Sheelajita* and *Kustha Churna* used for *Saptamrita Lauha*. AFI part 1 follow the reference of *Bhaishjya Ratnavali* of *Shoola Rogadhikara*. In a large scale production each ingredient of *Saptamrita Lauha* were taken in 1 kg quantity and average yield was 6.7 kg, loss due to sieving process which is shown in table 2. Colour of *Saptamrita Lauha* is light brown with pleasant smell and astringent taste (table 3). The particle size of *Saptamrita Lauha* is 3.2  $\mu\text{m}$  to 3.8  $\mu\text{m}$ , pH from 6.0 to 6.9, loss on drying from 1.2 % to 1.8%, ash value 16.2 %w/w to 24.5 %w/w, acid insoluble ash value from 2.6

%w/w to 3.6 %w/w, alcohol soluble extractive value from 42.9% v/w to 47.7 %v/w, water soluble extractive value from 21.1 % to 26.8% (table 4). Phyto-chemical screening of *Saptamrita Lauha* shows (table 5) Glycoside, Amino acid, Protein, Carbohydrate, Flavanoid, Tannin, Steroid, Saponin and Alkaloid were present in all batches.

## CONCLUSION

The study reveals that sufficient quality control parameters were followed during the preparation of *Saptamrita Lauha*. Organoleptic parameters, physicochemical analysis were carried out for the standardization of the formulation. On the basis of this study it's clear that, if we follow the same procedure with authentic drugs then large scale production also having Quality assurance.

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