



## Standardisation of Loha Bhasma Prepared with different Methods

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### ABSTRACT:

The Loha bhasma is indicated in different diseases like Udara roga, Kusta, Pandu, Gulma, Kamala, Rajayakshma etc. and many Rasoushadhies like Tapyadi Loha, Dhatri Loha, Lohasava, Navayasa Loha and Saptamruta Loha contains Loha bhasma as one of the ingredient. In this commercialised world the standard quality of Loha bhasma, available in the market is questionable, and practitioners and patients are worried about prescribing and taking the drug. Therefore to assess the standard quality of Loha bhasma it needs standardisation with present advance technology.

**Key words:** Lohabhasma,Iron,Rasaoushadhi

### INTRODUCTION

From mineralogical point of view the numbers of metals found in nature throughout the world are innumerable. But only a few of them have been recognized to possess medicinal values in ancient time.

Among them Loha has been known from prehistoric times and has been employed as an in making tools and different types of weapons. During samhita period that its medicinal use

was found. From the 12<sup>th</sup> century onwards the references to bhasmas are available.

The Loha bhasma is indicated in different diseases like Udara roga, Kusta, Pandu, Gulma, Kamala, Rajayakshma etc. and many Rasoushadhies like Tapyadi Loha, Dhatri Loha, Lohasava, Navayasa Loha and Saptamruta Loha contains Loha bhasma as one of the ingredient.

In many Rasagranthas like Rasa Ratna Samuchchaya, Rasa Tarangini, Ayurveda Prakasha, Rasendra Sara Sangraha etc various procedure for the preparation of Loha bhasma with different media have been mentioned.

The vast majority of the population depends upon the drugs of indigenous origin. The raw material to be used in a medicine, every stage of Process and final product should be standardised.

If Loha bhasma is not prepared by proper Procedure and with sufficient number of putas, it may comprise impurities or components more than permissible quantity and may cause toxic effect in the body, like Nausea, Vomiting, Diarrhoea, Dyspepsia and Some time fatal also, in order to avoid its toxic effects and to get its therapeutic value it needs standardization, and to eliminate any frankly poisonous substances, and to assure a safety, toxicity study on Loha bhasma is required. Hence standardization becomes necessary to safeguard the Public interest. A misconception is carried in public about bhasma is toxic towards vital organs, like Liver and Kidney. In this commercialized world the standard

quality of Loha bhasma, available in the market is questionable, and practitioners and patients are worried about prescribing and taking the drug.

### **Importance of Loha**

Lohas are highly important for our day-to-day life as well as for our health. From the therapeutic point of view Lohas are used for the maintenance of health and curing of diseases. But to use them internally according to Ayurvedic concept they need purification and incineration.

### **Classification of Lohas**

- 1) Saralohas
- 2) Sadharana Lohas
- 3) Pootilohas
- 4) Mishra lohas

### **Origin of Loha**

According to Rasa literature Lohas originated from the nine planets beginning with Sun and the Loha having its origin from grahas likely to please that graha when used and thus nine Lohas are described to have their relationship with nine grahas respectively from which they had their origin.

### **Modern view regarding Lohas (Metals)**

But from the modern point of view if we consider the metals and

their alloys they may be innumerable and their number cannot be limited to nine.

### Properties of metals

- 1) Metallic luster
- 2) High specific gravity
- 3) Good conductivity of heat electricity
- 4) Malleability that is they can be given the shape of either sheets or wires
- 5) Liable to produce basic or alkaline substances when heated in the presence of oxygen
- 6) Specific melting points

### MATERIALS AND METHODS

Raw material of Loha was taken from st. Anatomy's workshop, Bijapur

#### Loha Samanya Shodhana :<sup>2</sup>

Materials	Quantity
Raw Loha	-2.400gms
Tila taila	- Q.S
Takra	- Q.S
Go-Mutra	- Q.S
Kanji	- Q.S
Kulatha Kwatha	- Q.S

**Equipments** :Iron cauldron, Gas, cylinder, Big vessel, Big spetula etc.

**Methods** : Above mentioned amount of raw loha was taken in a iron cauldron, heated upto red hot and immediately immersed in Tilataila. The same process was repeated for seven

times in Tilataila. The same process was for seven times in Tilataila and also in Takra, Gomutra, Kanji, Kulatha Kwatha. Each time fresh liquid was used for dipping.

#### Vishesha Shodhana :<sup>1</sup>

Materials	Quantity
Samanya shodhita	
Loha churna	- 2.020gms
Triphala Kwatha	- Q.S
Gomutra	- Q.S

**Equipments**:Iron cauldron, Gas Cylinder, Big spetula, Big vessel etc.

**Methods** : Samanya Shodhita Loha Churna was heated strongly up to it became red hot and then immersed immediately in Triphala kwatha with equal quantity of Gomutra for seven times

#### Preparation of Loha Bhasama – Sample A<sup>2</sup>

Materials	Quantity
Visesha shodhita	
Loha Churna	- 500gms
Shodhita Gandhaka	- 500gms
Kumari Swarasa	- Q.S

#### Gandhaka Shodhana :<sup>4</sup>

Materials	Quantity
Raw Gandhaka	- 1Kg
Cow's Ghee	- 1Kg
Milk	- 2 Litres

**Equipments :** Steel vessel,  
Cloth, Gas, Cylinder

**Method :** First ½ kg of Cow's ghee was heated in iron cauldron in that added ½ kg of Raw Gandhaka after Gandhaka get completely melted it was poured in a vessel which was covered by cloth, the vessel contained 1 Litre of milk after that cloth was removed, melted Gandhaka became solid that solid Gandhaka was removed and washed with hot water for several times Same procedure was followed for another ½ Kg of Gandhaka

**Equipments :** Motor pestle,  
Sharava samputa, Cloth,  
Gopichandana, Cow dung etc

**Method :** Above mentioned amount of Vishesha shodhita Loha churna and Shodhita Gandhaka was taken in mortar and up to samyak pluta Kumari swarasa was added to it and triturated for 6 hrs daily, for 2 days on 3<sup>rd</sup> day when it became paste like, small flat, rounded chakrikas were made and dried. After proper drying the chakrikas were kept in sarava samputa and sandhibandhana was done by 3 layers of gopichandana paste, cloth and dried and subjected to gajaputa with the help of 1000 cow's dung (below 650 and above 350) were

kept and fire was given. Next day when puta became self cooled, sarava samputa was taken out and chakrikas were collected after careful opening of sandhibandhana. Loha Bhasma was powdered and weighed. The procedure was repeated for 8 times.

### Preparation of Loha Bhasma – Sample B <sup>2</sup>

Materials	Quantity
Visesha shodita	
Loha churna	- 400gms
Go-ghrita	- 2Kg
Triphala Kashaya	- Q.S.

**Equipments :** Iron cauldron, Gas cylinder, Big vessel, and Iron Big spatula

**Method :** The powdered Vishesha shodhita loha was taken along with equal quantity of ghee in an iron cauldron and heated in strong fire. The mixture was continuously stirred during heating. It was heated strongly, so that if a dry grass is put on this mixture, it should burn instantly. This process was repeated for 5 times after each process it was taken out from cauldron after cooling itself, next process was started. After 5<sup>th</sup> process powder was triturated with Triphala kashaya for 2-days on 3<sup>rd</sup> day chakrikas were prepared, and placed

in sharava samputa and sealed then subjected to Gajaputa and this process was repeated for 4 times.

### Preparation of Loha Bhasma – Sample C<sup>3</sup>

Materials	Quantity
Visesha Shodhita	
Loha churna	- 400gms
Dadima Patra swarasa	- Q.S

**Equipments :** Mortor and pestle, cow dungs, vessel, cloth etc

**Method :** Visesha shodhita Loha churna was subjected to bhavana with Dadima Patra swarasa for 7 times in Atapa (Sunlight) and given Gaja Puta. This process was repeated 2 times. Above mentioned quantity of visesha Shodhita Loha churna was taken in khalwa yantra and upto samyak Pluta Dadima patra swarasa was added and bhavana started in Atapa (Sunlight). Totally 6 hrs-triturated daily then it became churna form, like this 7th day the process was continued. After 7<sup>th</sup> day when it became paste like, small, flat, rounded chakrikas were made and dried after proper drying the chakrikas kept in a sharava samputa and sandhibandhana was done by 3 layers of Gopichandana paste and cloth, dried and subjected to gajaputa with

the help of 1000 cow's dung (below 650 and above 350) were kept and fire was given next day when puta became cooled, sharava samputa was taken out chakrika's were collected after careful opening of sandhibandhana. Loha bhasma was powdered and weighed the procedure was repeated for 2 times.

### Preparation of Loha Bhasama Sample – D<sup>2</sup>

Materials	Quantity
Visesha Shodhita	
Loha churna	- 300gms
Kajjali	- 300gms
Kumari Pulp swarasa	- Q.S.

### Preparation of Parada samanya shodhana :<sup>1</sup>

Materials	Quantity
Asuddha Parada	- 200gms
Sudha Churna	- 200gms
Lasuna	- 75gms
Saindhava Lavana	- 37gms

**Method :** Above mentioned amount of Asuddha Parada and Sudha churna was taken in mortar and triturated for 3 days then it was filtered with double layered cloth Lasuna Kalka and Saindhava Lavana mixed and triturated continuously for 3 day and on 4<sup>th</sup> day it became black then it carefully washed with water by this process shuddha Parada was obtained.

### Preparation of Kajjali :<sup>1</sup>

Materials	Quantity
Shodita Gandhaka	- 250gms
Shodita Prada	- 125gms

**Method :** 125 gms shodhita Parada and its double quantity i.e. 250gms of Shodhita Gandhaka were taken in khalva yantra and triturated for 7day's till it became blackish coloured.

### Preparation of Sample D:<sup>2</sup>

**Method :** Equal quantity of Vishesha shodhita Loha churna and Kajjali was taken in khalwa yantra and Kumari swarasa was added (samyak pluta) and triturated for 6 hrs then made a bolus of that and then placed in Eranda Patra and that bolus was kept in copper vessel and that pot was kept in intensive sunlight for 11/2 hr then that copper vessel was kept in midst of heap grains for 3 days then on 4<sup>th</sup> day morning from heap grain the bolus was removed and powdered in khalwayantra then filtered through cloth.

### DISCUSSION:

Samples of Loha bhasma prepared with different methods were subjected to **organoleptic, physical and chemical analysis**. It was observed that samples of loha bhasma shown faint odour,

amorphous to touch, tasteless, appears as powder form. Sample A and B were coffee brown in colour but Sample C and D having respectively reddish brown and black colour.

Analytical report of the samples were obtained by using inductively coupled plasma atomic emission spectroscopy. S, P, Mn, Ca, Fe, and Si were detected in all the samples. There was increase in % of Ca 2.35, 2.53 and 3.45 respectively in Sample A, B and C comparatively to raw loha sample 0.019 may be due to Kumari, Dadima patra swarasa and Triphala Kashaya used in these samples. There was decrease in % of Fe 51.92, 43.27 and 39.52 respectively in sample A, B and C compared to raw sample Fe 87.29. In Swayamagni loha bhasma (Sample D), there was increase in % of S (21.70) (raw Sample 0.085) but there was increase in % of Fe (29.55) (raw sample 87.29) may be due to use of Kajjali in the preparation and Amalgation power of Hg.

**Particle size assessment** was done at IIT Powai, Mumbai. The mean particle size value of Loha Bhasma samples 1.82 $\mu$ m was noted in Sample A and B, 1.54  $\mu$ m in sample AI, C and

CI, 1.9  $\mu\text{m}$  in BI and 2.36  $\mu\text{m}$  particle size was noted in sample D.

Loha bhasma samples A, B, and C were sparingly soluble in distilled water, and Ethyl alcohol. Sample D was soluble in distilled water, sparingly soluble in Ethyl alcohol.

Samples of Loha Bhasma were subjected to **P<sup>H</sup> study**. P<sup>H</sup> of sample A, B, C and D were 7.83, 7.05, 7.08 and 8.35 respectively. Acidic and Alkaline neutralising activity of Loha bhasma samples was conducted in different P<sup>H</sup> of acidic like P<sup>H</sup> = 1.2, P<sup>H</sup> = 3.2, and alkaline media like P<sup>H</sup> = 7.4, P<sup>H</sup> = 9.2. It was noted from 0 hrs to 12 hrs at the interval of every 1 hrs, that gradual decrease of P<sup>H</sup> of 1.2 and 9.2 and gradual increase of P<sup>H</sup> 3.2, 7.4 in all samples. As Loha bhasma is shita virya and having tikta, Kashaya rasa might have contributed for this change.

### CONCLUSION:

This study with limited facilities revealed some encouraging observations, Pharmaceutically Loha bhasma prepared by using triphala as media has been found better when compared with others. Loha bhasma in

general showed remarkable relief in the volume of Hb %. The Loha bhasma prepared with the media of Triphala showed better results indicating the maximum possibility of Fe absorption

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