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# PREPARATION & CHARACTERIZATION OF VANGA BHASMA

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## ABSTRACT

Rasashastra is a part of indian traditional medicinal system called Ayurveda. And it deals with the processing band therapeutic uses of metals and minerals. "Bhasmas" are unique herbo-mineral metallic preparation. Vanga Bhasma is on of the most commonly used metallic preparation. Mostly the Bhasmas are chemically metal oxide, from this point of view, it is essential to carry out their structural characterization and also to study the role of various steps involved in the preparation of Vanga Bhasma, so this work was towards, describing the importance of exact process and to attempt for the decision of charter of prepared Vanga Bhasma.

**KEYWORDS:** Vanga Bhasma, preparatio Characterization.

## INTRODUCTION

In Ayurveda use of metal and mineral preparation for maintaining positive health is mainly based on clinic observation. But this does not mean that Ayurveda have never adopted scientific approach regarding safe use of these preparation. Bhasma which is a unique herbo-mineral preparation in which metal is converted into a non reversible from. The preparation of Bhasma involves different processes such as Shodhana, Marana, Jarana, Dhavana etc. Which helps to remove the harmful contents of the heavy metal and covert it into metal oxide, thus can be made suitable for medical application. In Ayurveda, there are certain test like Rekhapurnatva, Varitaratva, etc. to control over the quality of these Bhasmas. However, scientific acceptance of the same tests are under consideration. As there is shift from efficacy to safety, it is necessary to know the physical properties and chemical composition of these Bhasmas to make them applicable for medical applications in this modern. Word.

In the present study, we have prepared the `Vanga Bhasma' and has been characterized by Physico-chemical analysis.

## AIMS AND OBJECTIVES

1. To prepare Vanga Bhasma by SOP (Standard Operating Procedure)
2. To study the physico-chemical characterization of Vanga Bhasma.

## MATERIAL AND METHODS

## (EXPERIMENTAL)

The raw sample of Vanga (Sn) i.e. Tin (99.96%) was used for Bhasma preparation Purity of sample was done by using Atomic Absorption spectrometry (AAS).

Vanga Marana i.e preparation of Vanga Bhasma consists of three major steps i.e.

A) Shodhana B) Jarana C) Marana

A) Shodhana was performed in two steps.

1) Samanya Shodhana[1]

2) Vishes Shodhana[1] (using the reference R.T.15/6 and R.T.18/19)

### A) 1) Samanya Shodhana

In this process, raw Vanga was melted by beating it in S.S (stainless steel) ladle and poured in a borosil beaker. After self cooling, the Vanga were taken out and again subjected for heating in a S.S. ladle. This procedure is called Dhalana which is performed for three times in each Shodhana Dravya i.e. Kanji, Takra, Kulattha Kwatha, Gomutra and Tiltaila respectively.

### 2) Vishesh Shodhana

It was performed in Churnodaka. For this, the procedure of Dhalana was performed for 7 times repeatadely. Every time fresh Shodhana Dravya was used.

Weight before Shodhana = 260gm

Weight after Shodhana =250gm

### B] JARANA

Jarana of Vanga was performed by using a Churna of Ashwattha Twaka by the reference of R.T. 18/331 The obtained product from Shodhana was heated in an iron pan and stirring of the products using Ashwattha Twaka Churna during heating was done. A strong heat near about 1 day was given by covering it with Sharava. Thus obtained ash was then washed with

tap water called as Dhavana to obtain a fine powder and to remove Kshareeya Dravya. This fine powder is called as Jarit Vanga.

Weight of Jarit Vanga =200gm

Weight of coarse powder=2lgm

**C) MARANA**

Marana was done by using a reference from Rasamitra Pg No.126.[2]

The mixture obtained through Dhavana was then triturated manually by adding equal quantity of juice of Aloevera till a homogeneous paste was formed. The Chakrikas i.e. flat circular cakes prepared from this mixture were placed into an earthen pot i.e. Sharava and Sharava Samputa was done. Then this was subjected for puta procedure.

Pit used for Puta was measuring 48 cm in length, breadth and depth. Twenty five cow dung cakes were used for the first Puta. For the further Putas cowdung cakes were increased gradually upto 6th Puta. Again the no. of cowdung cakes were reduced gradually upto 12th Puta. i.e. last Puta. The temperature changes during Puta were recorded using pyrometer.

**2) Moisture content**

The percentage of moisture content in Vanga Bhasma was 1.02%

**3) Inductively Coupled Plasma- Atomic Emission Spectrometry (ICP-AES)**

The percentage of tine in raw sample was decreased from 99.9% to 76.5% in Vanga Bhasma and other elements like Fe, Mg, Ca, K, Al etc. increases.

**4) Thermal Analysis**

On heating at the rate of 10° C per minute from 35° C to 815° C temperature, the TG curve shows following ovservation.

1) TG curve of Vanga Bhasma shows there is no weight loss or weight gain i.e. constant weight at a given temperature.

2) TG curve of Jarit Vanga shows 3.177% weight loss whole process.

**DTA (Differential Thermal Analysis)**

**1) Raw Vanga**

DTA of raw Vanga Shows some sharp peaks at the temperature of 234.3° C which gives and idea that there was some physical change like melting of change of crystallinity, etc.

**2) Jarit & Vanga Bhasma**

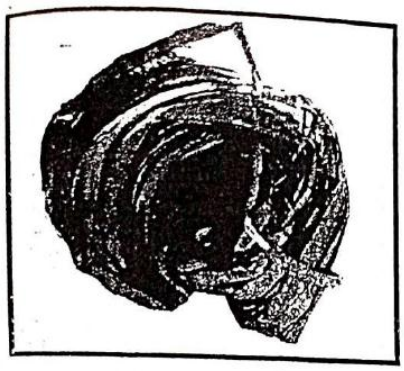
DTA of both Bhasmas shows no any peaks that means no any physical or chemical changes observed.

**5) SCANNING ELECTRON MICROSCOPE (SEM) STUDIES**

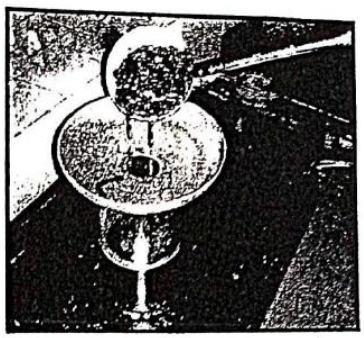
* Prepared Vanga Bhasma consists of irregular shaped particles with uneven surfaces having size less than 1pm to 3[1m. Parikshas satisfactorily and having its ideal i.e. Shubhra = White described in Yogratnakara was obtained.

TGA with DTA test for raw Vanga showed downwards peak at the temperature of 234.3° C which shows some physical change. According to text the melting point of vanga is also that so it can be helpful as a standard test for the quality control.

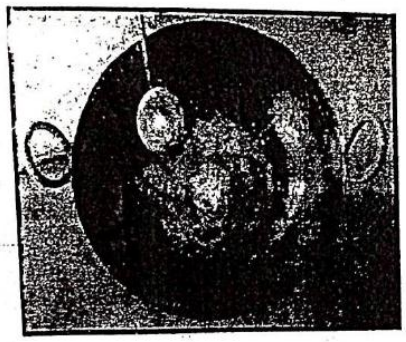
TGA with DTA showed no any weight loss and no any physical or chemical. Changes so it can be an alternative and supportive t Niruttha pariksha. From XRD, prepare Vanga Bhasma having a structure of Tin Oxide (Sn02). With the help of XRD and SEM studies, it has been clearly proving beyond doubt that, the nano sized particles of the Vanga has bee formed.



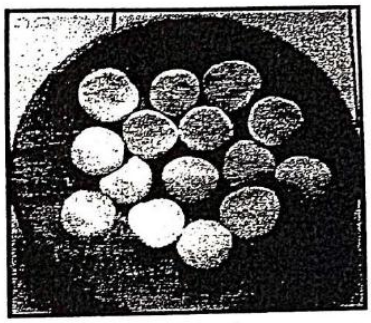
Raw Vanga



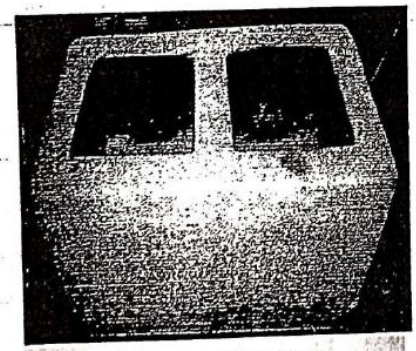
Dhalana of Molten Vanga in Til Taila



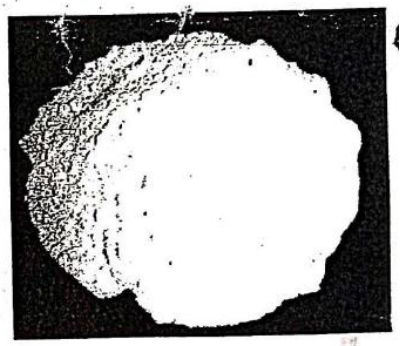
Jarana of Vanga



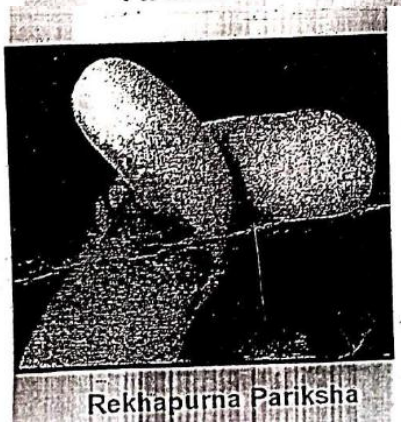
Chakrikas



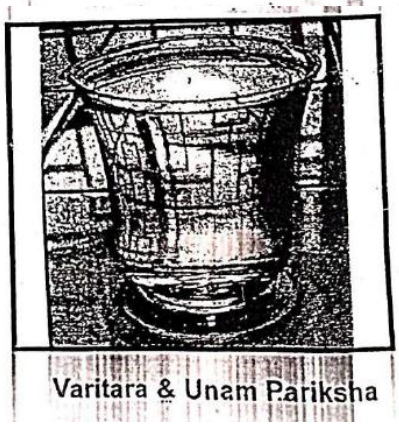
Pit used for Puta



Vanga Bhasma



Rekhapurna Pariksha



Varitara & Unam Pariksha

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