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A COMPARATIVE ANALYTICAL STUDY OF RASAPARPATI PREPARED WITH KADALI PATRA AND PALASA PATRA WITH SPECIAL REFERENCE TO MADHYAMA PAKA

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Abstract:

Introduction: The Parpati kalpana is one amongst four types of Parada Murchana, unique in the field of Rasashastra. The general method of preparation is similar for all parpatis, yet difference in ingredients. Rasaparpati is a sagandha sagni type of kalpa. Leaves while using in Parpati, mostly kadali patra is utilized, particularly in rasaparpati, seems to have some role on its preparation. Apart from Kadali patra, specific leaves are utilised for preparation of particular Parpati. So, we can assume that there should be role of leaves in the preparation of Parpati. **Materials and Methods:**The treatise Cakradatta is reviewed for the specific formulation, Rasaparpati. Kajjali nirmana and preparation of Rasaparpati were carried out and analysis of Rasaparpati in terms of organoleptic parameters, Physico chemical parameters and instrumental analysis ie, SEM-EDAX. **Results and conclusion:** By analysing the reports of EDAX, many observations are identified. Here comparison of madhyama paka rasaparpati prepared with kadali and palasa is done based on elements and its concentrations. It is found that certain common elements with different concentrations are present in Rasaparpati by using Kadali patra and Palasa patra. The elemental analysis provides that elemental concentration of patra is incorporated to the final product i.e., Rasaparpati. From all the above studies, we can conclude that there is a role of leaves in the preparation of Rasaparpati.

Key words: Rasaparpati, kadali patra , Palasa patra , Parada

Introduction

Ayurveda is a well-documented traditional system of Indian Medicine. Rasashastra, a branch of Ayurveda popular from medieval period, which deals with the metals, minerals, gemstones, and their processing. The Parpati kalpana is one amongst four types of Parada Murchana¹, unique in the field of Rasashastra. Murchana is a process which induces definite disease curing property in Parada. Parpati rasayana have high therapeutic value. The general method of preparation is similar for all parpatis, yet difference in ingredients. Rasa parpati is a sagandha sagni type of kalpa. Based on the duration of heat given, the Parpati paka is of three types viz., mrudu, madhyama and khara paka of Parpati.² Mrudu and madhyama paka can be used for therapeutics. The Parpati of Khara paka is considered as toxic and should not be used for therapeutic purpose. Leaves while using in Parpati, mostly kadali patra is utilized, particularly in rasa parpati, seems to have some role on its preparation. Apart from Kadali patra, specific leaves are utilised for preparation of particular Parpati. For example, the book Rasa Yoga Sagara mentioned that Kutaja Patra in Sudhasara Rasa which may be imparting its Stambhana property to Parpati that is utilized in Athisara and Arka Patra is utilized in Tamra Parpati which may be giving its property for treating Swasa. So, we can assume that there should be role of leaves in the preparation of Parpati. Present study is aimed to explore the role of leaves in Rasaparpati using analytical techniques.

Materials and Methods

➤ Two samples of Rasaparpati, one with Madhyama paka Rasaparpati prepared by using Kadali patra and another with Palasa patra were prepared according to the reference of Cakradatta Grahani chikitsa.³ Preparation of ashta samkarita parada according to the reference of Rasa hrudaya tantra.⁴

➤ Vishesha sodhana of Parada ⁵

Mardana of ashta samskatita parada with Jayanti, Eranda, Ardraka and Kakamachi respectively for one day each.

➤ Gandhaka sodhana ⁶

Gandhaka is dipped in Bhringaraja swarasa in an iron vessel and dried in intense sun light. This was repeated for three times. Then this Gandhaka liquefied on fire and was dipped in Bhringaraja swarasa being strained through a piece of cloth. Then washed, dried and powdered.

➤ Preparation of kajjali⁷

Using Ashta Samskarita Parada-1 part, Sodhita Gandhaka-1 part

Preparation of Rasaparpati⁸

- Iron frying pan filled with sand was placed on fire and heated.
- Prepared Kajjali was taken in a Darvi smeared with ghee.
- This Darvi was placed over the heated sand and mild fire was given to melt the Kajjali
- To bring uniformity in melting, the compound was stirred periodically with the help of spatula.
- In the mean time, cow dung was spread on an even surface and over it an intact Kadali Patra smeared with ghee was placed.
- On attaining Madhyama paka lakshanas^{9, 10} the melted Kajjali was immediately poured on the smooth surface of Kadali Patra which is kept over Gomaya peeda and covered with ghee smeared Kadali Patra. These leaves were then immediately compressed gently by using Gomaya Pottali.
- Similarly, Preparation of Rasaparpati by using Palasa patra of madhyama paka also done.
- Thus, the obtained melted Kajjali which was solidified and flat shape was collected as Rasa Parpati.

Analysis of samples

Organoleptic parameters

Analysis of *Rasa* (taste), *Gandha* (smell) , *Varna* (colour), *Rupa* (form and appearance), *Sparsa*- rub the sample between the fingers to know the fineness or roughness, *Sabda*

(sound) of Rasa parpati were done at Rasashala, RSBK department of MVR AMC Parassinikkadavu.

Physico-chemical parameters

pH value, Loss on drying, Ash value, Acid insoluble ash, Water soluble ash of Rasa parpati were done at Rasashala, RSBK department of MVR AMC Parassinikkadavu.

SEM –EDAX

A scanning electron microscope (SEM) ¹¹ is a type of electron microscope that produces images of a sample by scanning it with a focused beam of electrons. Energy - dispersive X-ray Spectroscopy is an analytical technique used for the elemental analysis or chemical characterization of a sample. SEM- EDAX Analysis was done at DST PURSE LAB, Manglore University, Mangalagangothri, Karnataka.

Results:

Organoleptic parameters

Table no.1 showing organoleptic parameters of *Rasaparpati*

Characteristics	Kadali- madhyama	Palasa - madhyama
<i>Varna</i>	Black with more shining than mridu, breaks easily and broken parts glitters like silver.	Black with more shining than mridu, breaks easily and broken parts glitters like silver
<i>Rupa</i>	parpatakara	Parpatakara
<i>Gandha</i>	No odour	No odour
<i>Rasa</i>	No particular taste	No particular taste
<i>Sparsha</i>	Very fine, smooth, ,easy to break	Very fine, smooth, ,easy to break
<i>Sabda</i>	Not applicable	Not applicable

Physico-chemical parameters**Table no.2 showing physico chemical parameters of *Rasaparpati***

	Kadali-madhyama	Palasa- madhyama
pH	5.24	5.25
LOD	0.652%w/w	0.480%w/w
Total Ash	0.119%w/w	0.143%w/w
Water soluble Ash	0.004%w/w	0.123%w/w
Acid insoluble Ash	0.054%w/w	0.074%w/w

SEM –EDAX**Table no.3 showing EDAX results of *Rasaparpati* – kadali madhyama paka**

Element	Atomic %
S	42
O	30.52
C	15.26
Hg	10.74
Fe	0.82
Cu	0.27
Mg	0.15
Ca	0.14
K	0.08
As,Cd	0.01

Table no.4 showing EDAX results of Rasaparpati – Palasa madhyama paka

Element	Atomic %
S	68.06
Hg	14.18
O	9.43
C	4.72
Fe	1.45
Ru	1.4
Mg	0.26
Cr	0.23
Cu	0.11
Ca	0.09
Mn	0.04
Zn	0.02

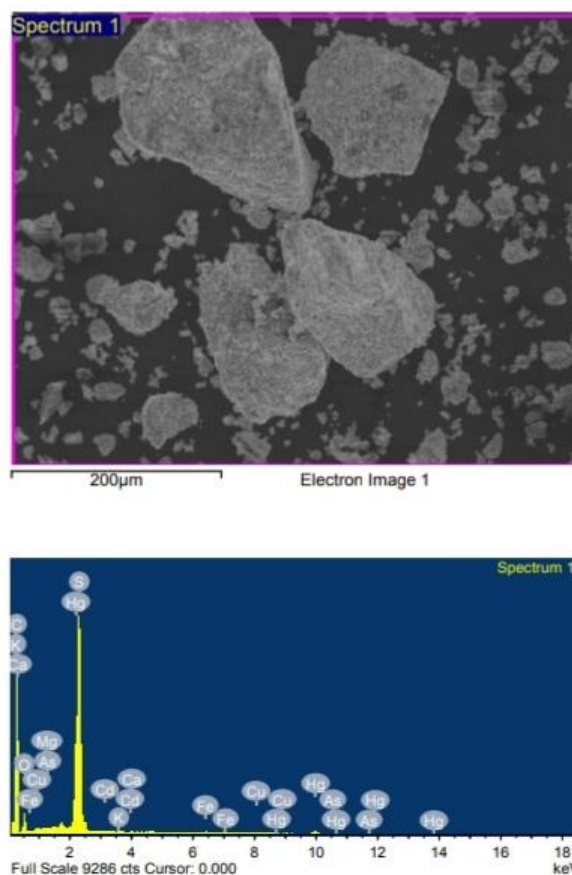


Figure no.1.showing EDAX results of Rasaparpati –kadali madhyama paka

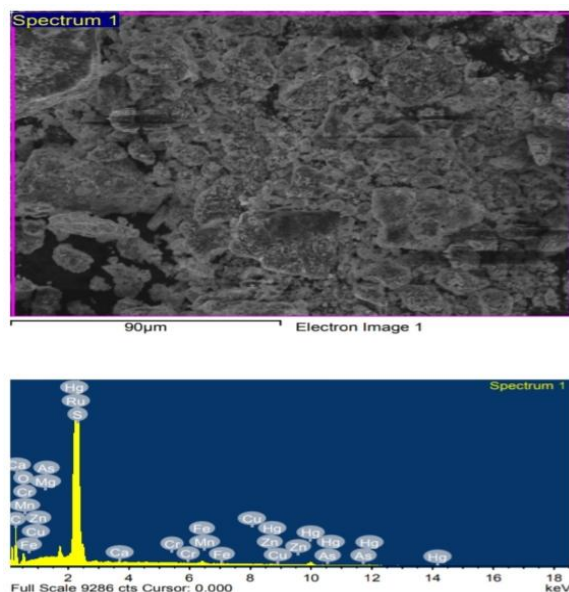


Figure no. 2. Showing EDAX results of Rasaparpati -Palasamadhyama paka

Discussion:

Analytical study of the product was very essential. Safety and efficacy of the product greatly depends on the composition. Based on the organoleptic evaluation, the characteristics of Rsasaparpati in madhyama paka of rasa parpati in each Kadali and Palasa patra was similar. In physico- chemical parameters, There slight variations in the pH values, total ash values, acid insoluble ash values, water soluble ash values in Madhyama paka of rasaparpati prepared with Kadali and palasa patra. By anlysing the reports of EDAX, many observations are identified. Here comparison of madhyama paka rasaparpati prepared with kadali and palasa is done based on elements and its concentrations. By analysing this table, we found that certain common elements with different concentrations are present in each Rasaparpati samples.

When compared the madhyama paka rasaparpati of kadali and palasa, the common elements are S, O, C, Hg, Fe, Cu, Mg, Ca. The concentration of Hg, Fe, Mg are more in sample of Palasa and concentration of oxygen, carbon, Cu, Ca is more in Kadali madhyama paka. The different elements are founded in both samples ie, K, As, Cd, Ru, Cr etc. Madhyama paka rasaparpati posses many elements in comparatively more concentration. According to the classics, Madhyama paka is used for therapeutics. In the present study, some of the

elements identified in madhyama paka of Rasaparpati prepared with Kadali patra and Palasa patra is also present in Kadali and Palasa patra. So the elemental analysis provides that elemental concentration of patra is incorporated to the final product ie, Rasa parpati.

Table no.7 showing the Comparison of Madhyama paka rasaparpati prepared with kadali and palasa patra

Common elements			
Kadali- madhyama paka rasaparpati		palasa- madhyama paka rasaparpati	
Elements	concentrations	Element s	Concentration s
S	42	S	68.06
O	30.52	O	9.43
C	15.26	C	4.72
Hg	10.74	Hg	14.18
Fe	0.82	Fe	1.45
Cu	0.27	Cu	0.11
Mg	0.15	Mg	0.26
Ca	0.14	Ca	0.04
Different elements			
Kadali - madhyama		Palasa madhyama	
Elements	Concentration s	Element s	Concentration
K	0.08	Ru	1.40
As	0.01	Cr	0.23
Cd	0.01	Mn	0.04
		Zn	0.02

Conclusion:

From all the above studies, we can conclude that there is a role of leaves in preparation of parpati. Because the results of Rasaparpati prepared with kadali patra and palasa patra in Madhyama paka shows many common elements with different concentrations and certain different elements are identified. From all of these instrumental analysis and physico chemical analysis, it is been understood that there is role of different patras used for preparing Parpati, and it open ups a new way of further research in the field of Ayurveda.

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