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"QUALITY IMPROVEMENT OF BHASMAS W.S.R.TO TUTTHA BHASMA"

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With the development of Rasasastra various metals, minerals, precious stones etc., became frequent in use for therapeutic purposes. Out of various minerals, Tuttha is an important mineral, which is used for Parada Samskara as well as used as medicine in the form of shodhita Tuttha and Tuttha Bhasma.

Tuttha in its bhasma form acts as Derma care, Anti pruritis, Immuno modulator, Antacid, Ant diabetic etc.

"Even then Tuttha bhasma is not regularly produced, marketed and practiced. Therefore to highlight the pharmacological significance and hence to promote and update the drug in current medical practice this paper is thought."

The object can be achieved by

1. Use of standard raw drug
2. Standardizing pharmaceutical process
3. Assessing the quality of bhasma

A. MATERIALS

Tuttha	Khalva yantra
Tankana	Earthan saravas
Gandhaka	Cottan cloth
Matulung swarasa	Balance
Nimbu swarasa	pyrometer
Multani soil	Cow dung cakes
Glass vessel	Filter paper
Steel vessels	

B. METHODS : (Rastaragini-Tarang-21)

1. Nirmalikarana of Tuttha
2. Shodhana of Tuttha
3. Marana of Tuttha

1.Nirmalikarana of Tuttha

Powdered Tuttha - Addition of hot water – dissolved – filtered – recrystralization.

2. Shodhana of Tuttha.

Nirmalikrita tuttha – nimbu swarasa – two bhavana
Initial weight Of Tuttha : 266gms
Weight of Tuttha after shodana : 260 gms

3. Marana of Tuttha

a. Bhavana
b. Preparation of Chakrikas
c. Sharava Samputa formation
d. Kukkuta Puta.

a. **Bhavana**: Trituration with equal quantity of Shodhita Gandhaka & Shodit Tankana and bhavana with Matulung Swarasa.

b. **Preparation of charika**: Size 3cm diameter x 0.5 cm in thickness

c. **Sarava samputa formation**:

d. **Kukkuta puta**: Three kukkuta putas was given. Size-two vitasti (23cm height, depth &width) and 25 Cow dung cake for each kukkuta puta.

Graph showing temperature pattern during kukkuta puta.

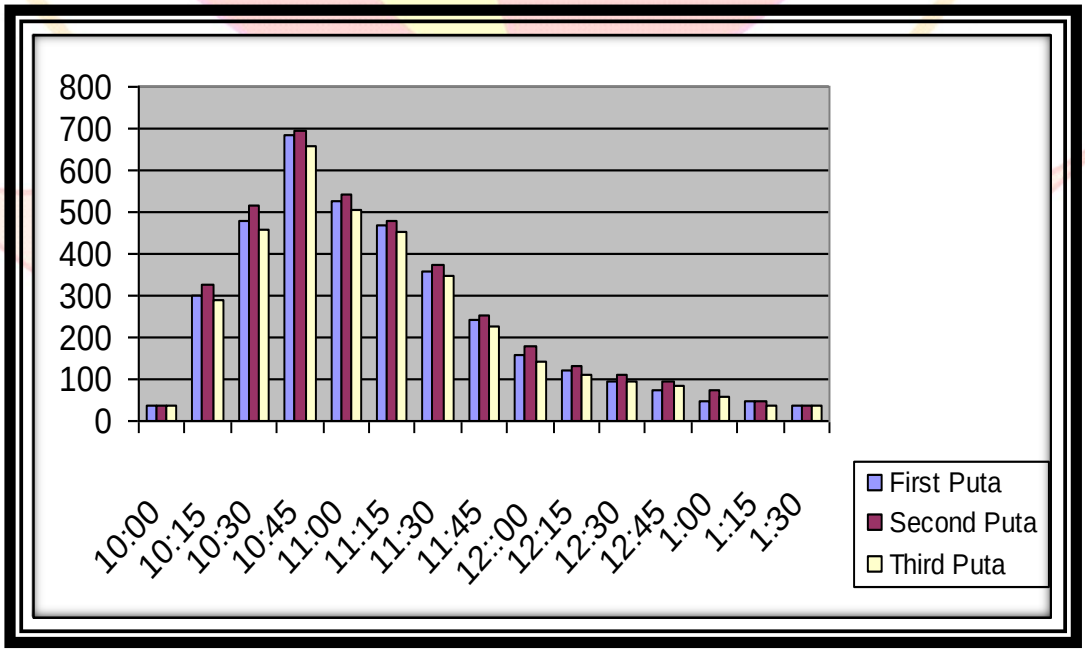

Table No.1 showing observations made during Marana of Tuttha

Sl No	Number of Kukkuta Puta	Drug Used for Marana	Bhavana Dravya	Quantity Of Bhavana Dravya	Duration of Trituration	Cow dung Cakes used
1.	I	Gandhaka, Tankana	Lakucha Swarasa	300 ml	6 hrs.	25
2.	II	Gandhaka	Lakucha Swarasa	150 ml	3 hrs.	25
3.	III	Gandhaka	Lakucha Swarasa	150 ml	3 hrs.	25

Table No. 2 showing relationship of number of Puta,Weight and Colour of drug

Sl No.	Number of Puta	Weight of Drug			Colour of Drug
		Initial Weight	Final Weight	Loss of weight	
1.	I	450 gms	105 gms	345 gms	Greenish Black
2.	II	210 gms	100 gms	110 gms	Dark Brown
3.	III	200 gms	98 gms	102 gms	Black.

QUALITY ASSESMENT

Table No. 3 Showing Ancient parameters:

Parameters	Result
Varna	Black
Rasa	Non - Perceivable
Sparsha	Mrudhu
Gandha	Non- perceivable

Rekapurnatva	Total portion floted on water surface
Varitaratva	Present
Avami	No nausea,vomiting &giddiness
Dadhi pariksha	No bluish apperance

Modern parameters:

1. **Physical analysis**
2. **Chemical analysis**

1**. Physical analysis**

- The ash value of Tuttha Bhasma is 79.7%,
- Acid insoluble ash is 5.2%
- Loss on ignition at 110 0 C is 2.1%.

2**. Chemical analysis**

I. Qualitative chemical analysis
II. Quantitative chemical analysis

Namburi Phased Spot Test: It was done for **qualitative analysis.**

Table No 4: Showing the observations made during **N.P.S.T**

I Phase	II Phase	III Phase
Chocolate colour is appeared at center with narrow blue periphery enclosed with yellow margin	The central chocolate colour spot remains as it is. The blue periphery becames slightly intense white & Yellow margin becomes wide.	Central spot with chocolate colour with moderate deep blue narrow periphery with moderately wide blue margin. Yellow margin faded out.

Table No.5: Showing quantitative chemical analysis

Sl. No.	Samples	% Of Cu.	% Of S	% Of Fe.	% Of Na.
1.	Crude Tuttha	23.78	11.98	0.33	_
2.	Tuttha afters shodhana	22.74	8.46	0.76	_
3.	Tuttha Bhasma	15.06	8.63	0.61	5.30

DISCUSSION

1. Before going to Tuttha Shodhana, Tuttha was subjected to Nirmalikarana process.
2. Nimbu Swarasa was used for Tuttha Shodhana.
3. Marana of Tuttha was done by adding Gandhaka, Tankana and bhavana with Lakucha swarasa.
4. Total three Kukkuta puta were given to obtained Tuttha Bhasma.
5. Quality assesment was done by using ancient and modern parameters.

CONCLUSION

For **improving the quality of Tuttha bhasma** following **tips** should be remembered.

1. Selection of standardized Tuttha is essential.

2. Tuttha bhasma prepared by using Gandhaka, Tankana and Lakucha swarasa requires Kukkuta

puta, Size of two vitasti with 25 cowdung cakes (each wt. 90gms) for incineration(Marana).

3. The colour of Tuttha bhasma prepared by using Gandhaka, Tankana and Lakucha swarasa is of

black colour.

4. Qualitative chemical analysis of Tuttha bhasma reveals the presence of Cu and S.

5. Quantitative chemical analysis of Tuttha bhasma reveals that it contains Cu 15.06%,

S 8.46%, Na 5.30% and Fe 0.61%.

6. Namburi Phased Spot Test proved the quality of Tuttha bhasma.