



## PHARMACEUTICAL ANALYSIS OF MANIBHADRA YOGA PREPARED WITH DIFFERENT METHODS

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## ABSTRACT

In the present times, awareness regarding preventive healthcare is on the raise, consequently, inclination towards *Ayurveda* is greater than before. In order to meet the demands for pleasing and agreeable products, there is a need to bring in suitable *Ayurvedic* products while maintaining their quality and efficacy. Different references for a same product can be seen in various *Ayurveda* treatises. In *Ayurveda*, reference of *Gudapaka Kalpana* (Jaggery confections) was for the first time mentioned in *Chakradatta*, *Arsha Chikitsa*<sup>1</sup>(treatment of piles). The main ingredient in this formulation is Jaggery. Hence, such formulations have better palatability than any other *Ayurvedic* dosage form. *Manibhadra Yoga*<sup>2</sup> is one such formulation. The aim of this study was to validate the method of manufacture of *Manibhadra Yoga*. Hence, three different methods of *Gudapaka* preparations were adopted in addition to novel methods. The details regarding the same will be discussed during the article.

**Keywords:** - *Manibhadra Yoga*, *Gudapaka*, Granules

## INTRODUCTION

Some *Ayurvedic* formulations are not palatable, hence are not accepted easily. e.g. *Churna* (powder), *Swaras* (juice), *Kalka* (paste). Whereas some are prepared with sweetening agents such as Jaggery, sugar for palatability and stability as well. When in a preparation *Guda* (jaggery) is more in quantity, it is known as *Gudapaka Kalpana*. eg. *Kalyanka Guda*, *Manibhadra Yoga* etc. In today's improved & modernized lifestyle; unhealthy food habits, mental stress, and busy work schedules have aroused number of *Pitta Doshajanya-*

diseases. These can be alleviated with pacifying formulations like *Manibhadra Yoga*, which is a mild laxative drug<sup>3</sup>. This yoga is useful in all ages, from children to old age. There are different procedures for preparation of *Manibhadra Yoga*. But, no work regarding the validation of the method of preparation of *Manibhadra Yoga* has been done before. Hence, in the present study, *Manibhadra Yoga* was prepared by different methods and its analytical study was done to validate the process.

**Materials:** All material required were procured from the market and authenticated.

**Ingredients:** –

Sl.No.	Sanskrit Name	Botanical Name	Part Used	Quantity in gms
1.	<i>Vidanga</i>	<i>Embelia ribes</i> Burm.	Fruit Rind	25
2.	<i>Amalaki</i>	<i>Emblica officinalis</i> Gaertn.	Fruit Rind	25
3.	<i>Haritaki</i>	<i>Terminali chebula</i> Retz	Fruit Rind	25
4.	<i>Trivrutta</i>	<i>Operculina turpethum</i> Linn.	Root bark	75
5.	<i>Guda</i>			300

### Method of Preparation -

*Manibhadra Yoga* was prepared by 3 different methods –

#### 1. *Leha*

#### 2. *Modaka*

#### 3. *Granules*

1. ***Leha Method*** – This was again done by two methods

a. Preparation by *Kwatha*<sup>4</sup>(decoction) Method–

- Coarse powders of all ingredients, except *Guda*, were taken and *Kwatha* was prepared with 1200ml water and reduced to 1/4<sup>th</sup>.
- Broken pieces of *Guda* were added in it & kept on mild fire while continuously stirring.
- When *Guda* melted completely, the mixture was filtered through cloth and residue was removed.
- After it attained 2-3 threads consistency heating was stopped & kept for cooling.
- Brown colored hard, candy-like mass was obtained.
- This was broken and packed in air-tight container and named as Sample A.

b. Preparation by *Gudapaka*<sup>5</sup> method –

- Firstly, *Guda* was broken into small pieces and taken in an inert vessel.
- 150ml of water was added to soak *Guda* & kept on mild fire while continuously stirring.
- When *Guda* melted completely, the mixture was filtered through cloth and residue was removed.
- The filtrate was again boiled on mild fire until *Gudapaka lakshanas*<sup>6</sup> were obtained.
- Maximum temperature maintained was upto 85°C.
- When 1-2 threads consistency was obtained, fire was put off & vessel was kept aside.
- The mixture of three *Choornas* namely, *Amalaki*, *Haritaki*, *Vidanga*, was added in the filtrate & stirred.
- Later, *Trivrutta Choorna* was added & stirred to obtain homogenous mixture.
- On cooling, *Leha* was filled in a sterile, dry, air-tight container & sealed.
- This was named Sample B.

2. **Preparation of *Modaka***<sup>7</sup>–

- *Guda* was broken into small pieces and taken in an inert vessel.

- 150ml of water was added to soak *Guda* & kept on mild fire while continuously stirring.
  - When *Guda* melted completely, the mixture was filtered through cloth & residue was removed.
  - The filtrate was again boiled on mild fire until *Gudapaka Lakshnas* were obtained.
  - Maximum temp maintained upto 85°C.
  - When 2-3 threads consistency was obtained, fire was put off & vessel kept aside.
  - Mixture of three *Choornas* namely *Amalaki, Haritaki, Vidanga* was added in the filtrate & stirred.
  - Later, *Trivrutta Choorna* was added & stirred to obtain a homogenous mixture.
  - When the mixture attained a thicker consistency suitable for rolling *Vati, Modaka* of approximately 10gm each were rolled out.
  - *Modaka* were filled in sterile, dry, air-tight bottles & sealed.
  - This was named Sample C.
- 3. Preparation of Granules –**
- *Guda* was broken into small pieces and taken in an inert vessel.
  - 150ml of water was added to soak *Guda* & kept on mild fire while continuously stirring.
  - When *Guda* melted completely, the mixture was filtered through cloth & residue was removed.
  - The filtrate was again boiled on mild fire until *Gudapaka Lakshnas* were obtained.
  - Maximum temp maintained upto 85°C.
  - When 2-3 threads consistency was obtained, fire was put off & vessel kept aside.
  - Mixture of three *Choornas* namely *Amalaki, Haritaki, Vidanga* was added in the filtrate & stirred.
  - Later, *Trivrutta Choorna* was added & stirred to obtain a homogenous mixture.
  - Mixture was slightly cooled under fan and passed through mesh<sup>8</sup> to obtain granules.
  - Brownish colored granules were collected and kept in hot air oven at 35°C for 3 hours to remove excess moisture.
  - Granules were filled in sterile, dry, air-tight bottles & sealed.
  - This was named Sample D.

**Table 1:** Observations

Sr. No.	Sample A	Sample B	Sample C	Sample D
Initial weight	450 gm	450 gm	450 gm	450 gm
Water	1200 ml & reduced to 1/4 <sup>th</sup>	150 ml	150 ml	150 ml
Final weight	290 gm	472 gm	430 gm	424 gm

**Table 2:** Organoleptic Characters

Tests	Sample A	Sample B	Sample C	Sample D
<i>Roopa</i>	Brown, candy like	Black	Brown	Brown, Granular
<i>Rasa</i>	<i>Madhur, Tikta, Kashaya</i>	<i>Madhur, Tikta, Kashaya</i>	<i>Madhur, Tikta, Kashaya</i>	<i>Madhur, Tikta, Kashaya</i>
<i>Gandha</i>	<i>Guda, Pleasant</i>	<i>Guda, Pleasant</i>	<i>Guda, Pleasant</i>	<i>Guda, Pleasant</i>
<i>Sparsha</i>	Hard mass	Semisolid, soft	Hard	Rough, granular
<i>Shabda</i>	-	-	Hard, blunt	Crispy

Samples B & D were taken for analysis. Sample A was rejected as it formed an unusually hard mass.

*Modaka* happened to be hard and too large a size for individual dose.

**Table 3: Result**

Sr.No.	Parameter	Unit	Leha	Granules
1.	Loss on drying at 105 <sup>o</sup> C	%	9.78	7.05
2.	Total Ash	%	1.98	2.32
3.	Acid insoluble ash	%	0.69	0.23
4.	pH (5% soln.)		4.54	3.24
5.	Bulk density	g/cm <sup>3</sup>	1.26	0.70
6.	Total solid content	%	90.22	92.95
7.	Alcohol soluble extractive	%	21.83	5.71
8.	Water soluble extractive	%	27.78	53.45
9.	Total sugar	%	34.96	28.95
10.	Reducing sugar	%	6.36	10.80
<b>Heavy metal</b>				
11.	Cadmium	ppm	Not detected	Not detected
12.	Arsenic	ppm	Not detected	Not detected
13.	Lead	ppm	Not detected	Not detected
14.	Mercury	ppm	Not detected	Not detected
<b>Microbial Test</b>				
1.	Total plate count	Cfu/g	8 x10 <sup>2</sup>	30 x10 <sup>2</sup>
2.	Total fungal count	Cfu/g	6 x10 <sup>2</sup>	20 x10 <sup>2</sup>
3.	Enterobacter	Cfu/25g	Absent	Absent
4.	Salmonella spp.	Cfu/25g	Absent	Absent
5.	Escherichia coli	Cfu/g	Absent	Absent

## DISCUSSION

*Manibhadra Yoga* is a simple and economically cheaper formulation. All the ingredients are easily available, and the production cost is quite low. Out of the four methods of preparations adopted, Sample A was rejected as it formed an unusually hard mass. Sample B, *Leha* form, tends to degrade faster due to higher moisture content. Sample C, *Modaka*, happened to be hard and too large a size for individual dose. Hence, there was a requirement to modify it into a preparation which would be easy to handle, administer, and fix dose according to individual need. Moreover, stability and longer shelf life was another point to be considered. Consequently, it was decided to convert *Gudapaka* into granules, Sample D. It was found that the granulation process was not very tedious. The final product had a good appearance and therefore more appealing, palatable and would be easier to dispense. On analysis, it was found to have lesser percentage of moisture content, had much higher water-soluble extractives and reducing sugars.

## CONCLUSION

It was concluded that granulation was a better procedure. Dose fixation with granules was easier. Filling and storage were trouble-free. Hence, it was confirmed that granulation of *Manibhadra Yoga* be taken for further study of process standardization.

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