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Pharmaceutical Study of *Suvarnavanga*

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ABSTRACT

Now a day's *Rasaushadhi* (Herbomineral drugs) is becoming popular, because of their uniqueness, high potency, not having bad taste, gives quick result and hence having edge over the herbal medicines. *Rasaushadhi* has 4 divisions- *Kharaliya Rasayana*, *Kupipakwa Rasayana*, *Parpati Rasayana*, *Pottali Rasayana*. *Kupipakwa Rasayana* and *Pottali Rasayana* are more potent and fast acting. It is believed that the cause for invention of *Kupipakwa* method was its unique method of preparation which increases the potency and efficacy of the medicine. *Suvarnavang* is one of the important *Kupipakwa Rasayana* due to its action in *Madhumeha* and *Shukrakshaya*. Present study is aimed to study the pharmaceutical process of *Suvarnavanga* and to decide the Regulation of heat and record of temperature changes while preparing.

KEYWORDS

Suvarnavanga, *Kupipakwa Rasayana*, *Rasaushadhi*, *Madhumeh*



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INTRODUCTION

Aim

Pharmaceutical study of *Swarnavanga Nirmana*.

Objectives

- 1) To study preparation of “*Swarnavanga*”.
- 2) To highlight the concept of “*Kupipakva Rasayana*.”
- 3) To study the process of *shodhan* of *Rasa dravya* (*Parada, Gandhak, Vanga*).

Rasaushadhi has 4 divisions- *Kharaliya Rasayana, Kupipakva Rasayana, Parpati Rasayana, Pottali Rasayana*. The formulation *Suvarnavanga* is *Sagandha Talastha Kupipakva Rasayana*. It is believed that the cause for invention of *Kupipakva* method was its unique method of preparation which increases the potency and efficacy of the medicine. The main ingredients of *suvarnavanga* are *Shudha Parada, Shudha Gandhak, shudha Vanga, Shudha Navsagara*. *Swarnavang* is one of the important *Kupipakva Rasayana* due to its action in *Madhumeha* and *Shukrakshaya*.

MATERIALS AND METHODS

The preparation of *Swarnavanga* was done according to reference of *Vd. Dhamankarshastri*.

Place of Work- Government Ayurved College Nagpur.

Ingredients-

ShuddhaParada- 3 part,
ShuddhaGandhaka-4 part, *ShuddhaVanga*-
6 part, *ShuddhaNavsagar*-3 part,
Kalamisora-1 part

1) Name of Practical- *ParadaShodhan*¹

Ingredients-*AshuddhaParada*-100 gm,
RasonaSwarasa-160 ml

Procedure - *AshuddhaParada* was taken in *Kharala* and 160 ml *Rasonswarasa* was poured into it. *Mardana* was done continuously. The next day, *Rasonswarasa* was changed and *mardana* was done. The same procedure was repeated upto 7 days. After that *Parada* was washed with warm water. (Figure-1)



Figure 1 *ShuddhaParada*

Precautions- A care was taken while removing the garlic juice from *Kharala* as there is chance of losing mercury.

2) Practical Name *GandhakaShodhana*²



Ingredients-Ashuddha Gandhaka-100 gm, Goghrita-80 gm, Godugdha- ½ liter, Luke warm water-as required

Procedure:AsuddhaGandhaka was made to fine powder in *Khalvayantra*.One liter of *Godugdha* was taken in iron vessel and cloth was tied over mouth of vessel.After that *Goghrita*(cow-ghee) was taken in Aluminum vessel and heated it at *Mandagni*.*Gandhak* powder was added to it and mixture was stirred continuously.*Dhalana* of *Gandhaka* - when *Gandhak* melted completely, heating was stopped and poured the liquefied*Gandhaka* on the cloth tied over vessel containing *Godugdha*.After 10 min *dhalitGandhak* was taken out from *godugdha*.This*Gandhak* was crushed and washed out with hot water till it gets free from *goghrita* and *godugdha* and allowed it to dry.This process was repeated for 2 more time.(Figure- 2)



Figure 2 *ShuddhaGandhaka*

Duration- 4 days

Precautions- *Gandhaka* was used in powdered form.*Gandhaka* should be

completely melted in *goghrita*.*Mandagni* should be maintained during procedure to avoid burning of *Gandhaka*.*Indhalana* process, pouring of liquefied*Gandhaka* should be done quickly.*ShuddhaGandhaka* should be washed with hot water to remove *godugdha* and *goghrita*.*Godugdha* should be changed at every *dhalana* procedure.Mask and goggles should be used to eliminate hazards caused due to Sulfur fumes.

3) **Name of Practical**-*VangaSamanya Shodhana*³

Ingredients-Ashuddha*Vanga*-450gm, (*Til tail, Takra, Gomutra, Kanji, KullathaKwath*) - As per required

Procedure

Til tail was kept in steel vessel covered with the *PitharYantra*.The weighted Tin was placed in steel darvi and heated upon the gas stove.After melting of *Vanga*, it was immediately poured into the *Til Tail* through *PitharYantra*.After cooling, the Tin was collected from the oil, wiped with tissue paper.The same procedure was repeated 6 times.Likewise the process of heating and melting were done for *Takra, Gomutra, Kanji, Kulatthkwath*, respectively.Each time fresh media was used. Finally, the tin was collected and weighted.After *Shodhana*, Tin metal washed with hot water, dried and then weighed.



Precautions-Pouring should be done immediately after melting Tin. Direct pouring has been avoided as there is chance of explosion while pouring the molten Tin.

4) Practical Name *Vishesh Shodhana of Vanga*⁴

Ingredients-*Samanya Shodhit Vanga*- 280 gm, *Churnodak*-As per required

Procedure-First *Churnodak* was prepared. The *shodhit* Tin was melted in steel darvi and then poured into *Churnodaka* through *Pithar Yantra*. After cooling it was taken out and then wiped properly by tissue paper. Likewise the process of heating and melting was done for 6 times. (Figure-3)



Figure 3 *Shuddha Vanga*

5) Practical Name-*Navsagar Shodhana*⁵

Ingredients-*Ashuddha Navasagar*-100gm, Water-300 ml

Procedure- *Ashuddha Navasagar* was crushed in *Kharala*. Powdered *Navasagar* was taken in Steel Vessel and water added into it and stirred properly to dissolve all the powder. Filter the solution 3 times through filter paper. This filtrate heated on medium flame till the dissolved *Navsagar* is

regained. The mixture was stirred continuously.

Precautions- Continuous stirring is essential.

6) Name of Practical Preparation of *Svarnavanga Kajjali*⁶

Ingredients-*Shuddha Parada*-45 gm, *Shuddha Gandhaka*-60 gm, *Shuddha Vanga*-90 gm, *Shuddha Navsagar*-45 gm, *Kalamisora*-15 gm

Procedure- Firstly *Shuddha Parada* was taken in *Khalva Yantra*. After that melted *Vanga* was poured in *Parada* and trituration done. The above mixture triturated well to form *Pishti*. Then *Parada*- *Vangapishti* was washed with *Nimbuswarasa* and *Saindhava* till water became clear, saltless & kept for drying. In this *Parada*-*Vangapishti* *Shuddha Gandhaka* was added and triturated well till black color powder formed. Then *Shuddha Navsagar* was added in the above mixture and triturated well. Lastly the *Kalamisora* was added in the above *Kajjali* and triturated well. (Figure-4)



Figure 4 *Suvarnavanga Kajjali*



Precautions- Trituration must be steady and continuous to avoid loss.

7) Name of Practical- Preparation of *Svarnavanga*⁶

Equipments *Kachkupi* with 7 layer *matkapada*, Cork, *Multanimitti*, cloth, funnel, Pyrometer, torch, Weighing machine, *Lohashalaka*, Portable *ValukaYantra*, Gas stove, thread, Knife, Kerosene.

Ingredients–*SvarnavangaKajjali*- 250 gms
Procedure–*Kajjalimardana* was done for 1 hour. Then *Kachkupi* of 1 lit. capacity were filled with 250 gms with *SuvarnavangaKajjali*. Then *Kupi* placed at the center of the *ValukaYantra* and space was filled with *Valuka* up to the neck of the bottles. Pyrometer was kept 5 cm away from the *Kachkupi* (Figure-5).



Figure 5 White fumes of *Navsagar*
The temperature was recorded every 30 min by Pyrometer. Total 13½ hour *Madhyamagni* was given. Red hot *shalaka* was repeatedly inserted in the mouth of *Kachkupi* to burn accumulated *Navsagar* and Sulfur at the neck of the bottle to prevent blocking. These fumes decreased

gradually. In the later stage, *Tamrapatra* was kept over the mouth to confirm complete *jarana* of *Gandhaka*. Confirming *Tamrapatra* test, cork was applied and gas was turned off and the *kupi* was kept for *swangshitikaran*. On next day, *kupi* was broken appropriately to get the formed product. This end product was washed with water and dried. (Figure 6-8)



Figure 6 *ShitaShalakaPariksha*



Figure 7 *TalasthaSuvarnavanga*



Figure 8 Finished product-*Suvarnavanga*



Precautions One hour before *kupibharana*, *Kajjaimardan* should be done properly. *Madhyamagni* should be maintained

OBSERVATIONS

The facts observed during the process of preparation of *Suvarnavanga* are described as below.

1) *ParadaShodhana*-(Table 1)

Table 1 Observations during trituration of *Parada* with *Rasonswarasa*

Sr. No	Time since started trituration	Observations
1.	1 hours	<i>Rason swarasa</i> turned to blackishgreen in color
2.	1 ½ hours	<i>Rason swarasa</i> turned to dark blackishgreen in color

a) As *Rasonswarasa* mixed in *kharala*, *Parada* started dissociate into small globules.

b) Every day garlic juice in *Kharala* turned black and more viscous.

2) *GandhakaShodhana*-

a) The physical impurities were observed on the cloth.

b) The color of *Gandhaka* turned to light yellow after each *Shodhana*.

c) Smell of *Gandhaka* was reduced.

d) Brownish *ghritawas* seen over *godugdha*.

3) *VangaSamanyaShodhan*-

a) Initially tin melts early but afterwards, the time for melting was increased.

b) The color of used *Til tail* was slightly blackish.

c) A hissing sound was heard when melted *Vangawas* poured in *Takra* and separation of *Vanga* particles started.

d) The color of butter milk turned to dull.

e) A hissing sound was heard while pouring melted tin in cow's urine. The conversion of *Vanga* granules was more in *Gomutra* compared to previous *Shodhanadravyas*.

f) The color of used *Gomutra* turned into black.

g) On pouring the melted Tin into *Kanji* there was a black smoke observed. The color of used *Kanji* changed to black.

h) A hissing sound was heard on pouring the molten Tin in *Kulatthakwath*.

i) Granules of metallic Tin were present in the product.

4) *VisheshShodhana of Vanga*-

a) While melting initially it melts early, but afterwards the time for melting was increased.

b) A hissing sound was heard on pouring the well-melted tin into *Churnodaka*.

5) *NavsagarShodhan*-

a) *Navsagar* completely dissolves in water within ½ hour.



b) Blackish impurities were observed on filter paper.

c) White granular powder is formed.

6) Suvarnavanga Kajjali preparation-

a) Pishti of *Parada*- Vanga had a white shine.

b) When *saindhav Jal* was mixed in above *pishti* and triturated, the water became black in color.

c) After adding *Shuddha Gandhak* in *Parad- Vangapishti*, mixture became Greyish black in color.

d) After adding *Navsagar* & triturated, *Kajjali* became black in color.

7) Suvarnavanga preparation-(Table 2)

8) *Swarnavanga* is a *Talastha* type of *Kupipakva Rasayana*

9) Total time taken for preparation
- 13 ½ hour

10) Time required for *swangshitikaran*
- 12 hour

11) Total weight of *Kajjali* taken
- 250 gm

12) Total weight of *Svarnavanga* obtained - 170 gm

13) Physical properties of *Svarnavanga-*

14) Appearance - lustrous
Texture

15) Color - Golden
yellow color

16) Smell - odourless

17) Touch - smooth

18) Taste - Tasteless

Table 2 Observation of time and temperature recording during *Suvarnavanga* preparation

Sr.No	Duration	Temperature	Observations
1	10.30am	250°C	<i>Madhyamagni</i> started
2	10.45am	300°C	White fumes of <i>Navsagar</i> noted
3	1.00pm	350°C	<i>Gandhaka</i> fumes started
4	3.30pm	350°C	Hot <i>shalakasanchalan</i> started
5	8.00pm	380°C	<i>Shitashalakapariks ha</i> done. Golden particles adhere to <i>Shalaka</i> observed.
6	11.00 pm	400°C	<i>Gandhaka</i> fumes decreased
7	12.00	450°C	<i>Tamrapatra</i> test positive, <i>agni</i> stopped, <i>Mukhamudran</i> done.

RESULT

The results of Pharmaceutical procedure are given in table 3 to 7.

Table 3 Result of *Parada Shodhan* (purification of Mercury) Process

	Weight before Shodhana	Wt. after shodhana
<i>Parada</i>	150 gm	110 gm

Table 4 Showing result of *Gandhaka Shodhana* (purification of Sulfur) Process

Wt. before shodhana	Wt. after 1 st shodhana	Wt. after 2 nd shodhana	Wt. after 3 rd shodhana	Total loss of wt.	Duration



Gandhak	100 gm	90 gm	85 gm	80 gm	20 gm	3 days
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Table 5 Result showing VangaSamanyaShodhan

	Weight before Shodhan	Wt. after shodhan in Tail	Wt. after shodhan in Takra	Wt. after shodhan in Gomuta	Wt. after shodhan in Kanji	Wt. after shodhan inKulathth Kwath	Total loss of wt.	Duraton
Vanga	450 gm	430 gm	400 gm	350 gm	300 gm	280 gm	170g m	days

Table 6 Showing result of Vishesh Shodhan of Vanga Process

Weight of Samanya shodhit Vanga	Weight after Vishesh Shodhan	Total loss of Weight
280	260	20

Table 7 Showing result of NavsagarShodhan Process

	Weight before Shodhana	Wt. after shodhana	Total Loss of weight
Navsagar	100 gm	92 gm	8 gm

Swarnavanga is a *Kupipakwa Rasayana* with different methods of preparation. Collection and identification of raw material is very important step in preparation of a medicine as it influences final product. *Shodhana* process is necessary for *apadravyanirharan* and *gunawardhan*. The role of agni is very important. *Madhyamagni* should be maintained properly. *Pakpariksha* should be done carefully to avoid *mrudu* and *kharapaka*.

DISCUSSION

The method of preparation of *KupipakwaRasayan* is very unique and difficult compare to other preparation of Mercury. *Swarnavanga* is a *SagandhaTalastha* type of *KupipakwaRasayana*. It is named due to the appearance of final product (bright Golden yellow colour). During *Suwarnavanga* process 170 gms (68%) of *talastha* was obtained out of 250 gm of *Kajjali*.

CONCLUSION



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