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A comparitive pharmaceutico analytical study of *Nishamalaki Vati*

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ABSTRACT

Vati Kalpana is the widely used dosage forms because of its advantages like palatability, easy transportation and fixation of dose; an effort is made to analyze the organoleptic, physical and analytical changes with and without addition of starch in the preparation of *Nishamalaki Vati.* Here, a small attempt of two different pharmaceutico-analytical techniques is implied in making of *Nishamalaki Vati* which may bring change in pharmaceutical science of Ayurveda.

Key words: *Nishamalaki, Satva, Excipient, Vati.*

INTRODUCTION

In Ayurveda, *Bhaishajya Kalpana* is the science which deals with the process of preparation of single and compound formulations. Also preparation can be classified into two major groups, primary and secondary. *Vati*[1] is a popular secondary preparation in Ayurveda Pharmaceutics. It is a solid dosage form which is largely produced and marketed in the field of pharmaceutics. This is because of the advantages like, it can be swallowed easily without any irritation, handy and also fixation of dosage becomes easier. On the other hand there are even some of disadvantages faced by pharmaceutical industries like hardness, delayed disintegration, palatability etc. which forces them to incorporate modern techniques of adding excipients, flavoring and colouring agents.

The *Vatis* can be prepared by two methods they are *Sagni* and *Niragni*. In *Niragni* method of preparation the powders of drugs are mixed and triturated with specified *Drava Dravyas*, are rolled into *Vatis* and dried under shade. *Nishamalaki Vati* is one such preparation prepared by *Niragni* method, which is described in Ayurvedic classics and indicated in the disease *Prameha* also well known for its proven efficacy.

MATERIALS AND METHODS

Nishamalaki Vati is prepared as per the reference in the text of *Ashtanga Hridaya.*[2] The preparation was carried out by two methods, where the first sample is as per the reference and the other one was with the addition of starch as an excipient. The attempt is made to utilize the *Satva* of the same *Nisha Swarasa (Haridra)* to observe the changes in organoleptic characteristics, physical changes and analytical point of view.

Sample 1 - The fine powder of *Amalaki Churna* 50gms was taken, to this quantity sufficient of *Haridra Swarasa* (quantity sufficient to immerse the powder) was added and *Bhavana*[3] was carried out till the attainment of *Subhavitha Laxana.*[4] Similarly seven *Bhavanas* were given and after final drying it was scrapped out of *Khalvayantra*, rolled into pills and was dried in shade.

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Sample 2 - The fine powder of *Amalaki Churna* 50gms was taken, to this quantity sufficient of *Haridra Swarasa* (quantity sufficient to immerse the powder) was added and *Bhavana* was carried out till the attainment of *Subhavitha Laxana*. Similarly seven *Bhavanas* were given and then after final drying it was scrapped out of *Khalvayantra* and 10% starch (*Haridra Satwa* was prepared and added) and mixed well, later rolled into pills and dried in shade.

OBSERVATIONS

Table 1: The time duration and its detail for both the samples is as follows.

No of *Bhavana*	Time Duration (Hr/M)	Quantity of *Swarasa* (ml)	Drying Time (Hr)
1st	6	80	overnight
2nd	6	75	overnight
3rd	6	70	overnight
4th	6	70	overnight
5th	6	65	overnight
6th	6	60	overnight
7th	6	60	overnight

Table 2: Organoleptic evaluation of both samples.

Guna Karma	Sample 1	Sample 2
Varna	Greenish Brown	Sap green
Swaroopa	Solid	Solid
Gandha	*Haridraghanda*	*Haridraghanda*
Rasa	*Tikta, Amla (Pradhana)*	*Tikta (Pradhana), Amla*
Prabhava	*Pramehahara*	*Pramehahara*
Rogagnatha	*Prameha*	*Prameha*

Table 3: Physical evaluation of both samples.

Observation	Sample 1	Sample 2
Touch	Hard	Soft
Smell (*Haridra)*	Comparatively less felt	More felt
Drying	Comparatively faster	Little slow
Sticky Nature	Less sticky	More sticky
Yield	Comparatively more	less

Table 4: Disintegration and hardness test of *Nishamalaki Vati*

Hardness		Disintegration			
Sample 1	Sample 2	Sample 1		Sample 2	
		Acidic pH (hr)	Alkaline pH (hr)	Acidic pH (hr)	Alkaline pH (hr)
13 Kg/cm^2	9 Kg/cm^2	3.10min	3.40min	2.53min	3.30min

RESULTS

The organoleptic evaluation reveals the difference between the two different samples.

a) The yield was less and *Vatis* were dried slowly in 2nd Sample when compared to the 1st Sample.

b) The Analysis reveals that disintegration time of 1st Sample is more than the 2nd Sample.

c) Also the hardness of the *Vati* in 2nd Sample is less compared to 1st Sample.

d) The consistency of 2nd Sample was little sticky.

DISCUSSION

By comparing the above two samples, it was observed that 2nd sample was more appealing with respect to its pleasing colour of sap green colour. Also the time

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taken for disintegration was less when compared to 1st sample as the hardness may also decreased after the addition of starch. The only hurdle faced in preparation of 2nd sample was difficulty in rolling the pills manually due to addition of starch. The starch used here was nothing but the *Satva* of *Haridra* only. This was added to the *Nishamalaki Churna* after the seventh *Bhavana* and mixed with a spoon until homogeneous mixture was obtained. Therefore the mixing of *Satva* and *Churna* took a very long time. It would have been better if a little bit of *Mardana* was done for few minutes. Overall 2nd sample stands superior as the disintegration time helps in quick absorption and fast action of the drug.

Conclusion

The pharmaceutical industries are behind addition of chemicals to prolong the shelf life and early disintegration, addition of flavoring agents to enhance taste, appearance and fragrance for commercial purposes. In this process there are chances where excipients may hinder the action of the drug. So to overcome these problems faced by the pharmaceutical industries this was an attempt made to imply *Satva* of same *Swarasa* acts as an excipient and even as binding agent. By this neither the action of drug is hampered nor there any need to compromise with the quality. The addition of *Satva* instead of extracted excipients may increase the efficacy of the *Vati*. Therefore such small innovative attempts of analyzing techniques may highlight the scientific analyzing techniques and may bring the novel change in pharmaceutical science of Ayurveda.

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