Upcycling of Sneha Kalka - A Novel Design

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ABSTRACT

Sneha Kalka is the by-product formed due to addition of Kalka and Drava Dravya to Sneha (oil or ghee) during Snehapaka which is considered as waste and discarded. Sneha Kalpana is a type of dosage form which is extensively used in clinical practice and prepared on large scale production leading to formation of huge quantity of Sneha Kalka. This study is an attempt to convert this Sneha Kalka into a new dosage form i.e., Granules. In this study, the Sneha Kalka of Ashwagandha Ghrita was converted into Ashwagandha Granules. The resultant product was highly palatable and can act as a substitute to expensive malt based health drink powders.

Key words: Khanda Kalpana, Avaleha, Ashwagandha, Sneha Kalka.

INTRODUCTION

Upcycling of waste is the hottest trend considering the current scenario of humans taking earth towards destruction. Waste or industrial waste is generated in many forms which can be classified under biodegradable and non-biodegradable. Though biodegradable wastes are considered relatively non-hazardous, they still have their own disadvantages. One such biodegradable waste generated in Ayurveda pharmaceutical industries is Sneha Kalka.

This Sneha Kalka is a by-product formed due to addition of Kalka and Drava Dravya to Sneha (oil or ghee) during Paka. Sneha Kalpana forms a major dosage form manufactured industrially and practiced widely due to its innumerable benefits. According to classical reference,[¹] 1/4⁴th part of Kalka is added to 1 part of Sneha i.e., 250g for every 1000ml of Sneha and the quantity of Drava Dravya is 4 times to that of Sneha i.e., 4000ml to 1000ml of Sneha.

These Drava Dravyas (liquids) are mostly Swarasa (extracted juice), Kashaya (decoction), Dadhi (curd), Takra (buttermilk), Ksheera (milk) etc.[²] While the Swarasa and Kashaya contribute to Sneha Kalka negligibly, the milk and milk products contribute a lot in increasing its weight. Hence, the initially added Kalka may gain upto 20% weight. And this entire volume of Kalka is discarded. Even in a small scale setup, for a batch of 5 Liter Sneha almost 1.25Kg of Kalka is generated and discarded as waste. This gets magnified for large scale preparations.

Since this Sneha Kalka consists of substances with medicinal value and is processed with Sneha, instead of wasting it, it can be used for preparation of other dosage forms. This study is an attempt in that direction.

Here, Sneha Kalka obtained after preparing Ashwagandha Ghrita was taken, added with sugar syrup to convert it into granules. Thus rendering them consumable as it is or as an additive to milk.
MATERIALS AND METHODS

Ingredients

Table 1: Showing Ingredients of Ashwagandha Granules.

<table>
<thead>
<tr>
<th>SN</th>
<th>Ingredient</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sneha Kalka</td>
<td>1 Part</td>
</tr>
<tr>
<td>2</td>
<td>Sugar</td>
<td>4 Parts</td>
</tr>
<tr>
<td>3</td>
<td>Water</td>
<td>Q.S. for Paka</td>
</tr>
</tbody>
</table>

Procedure

The classical method of preparing Avaleha was adopted and Paka was continued till the product turned into granules. The preparation was carried out under following steps;

A. Preparation of Sugar Syrup
B. Mixing of Kalka with Sugar Syrup
C. Preparation of Granules

A. Preparation of Sugar Syrup

Sugar was added with water and heated on Madhyamagni till attainment of 1-2 thread consistency.

B. Mixing of Kalka with Sugar Syrup

To the prepared sugar syrup, the Sneha Kalka was added and mixed thoroughly. It should be ensured that the mixture is homogenous and no lumps are present. It is heated till Avaleha Siddhi Lakshanas appear.

C. Preparation of Granules

The heating is continued with constant stirring for 10 minutes. By then, the Avaleha turns into granules. It is then taken off the heat and allowed to cool. Then they are packed in air-tight containers.

DISCUSSION

As previously mentioned, Sneha Kalka can be a composition of multiple drugs. In this case, Sneha Kalka of Ashwagandha Ghrita is selected. It mainly consists of remnants of Ashwagandha and Ksheera. Both these ingredients are told as Rasayana in Ayurveda classics. Hence, this Kalka was selected for this dosage form. Granules are multifaceted dosage forms which can be mixed with milk and consumed or consumed as it is. The sugar content in granules renders it palatable.

One of the simplest methods of preparing granules is by heating the Avaleha further. This can be found in our classics in the form of Khanda Kalpana. Also, many of the Rasayana Yogas are administered in Avaleha form. Hence, this Sneha Kalka was converted into Avaleha and then to granules.

Acharya Sharangadhara mentions Anukta Mana for preparation of Leha. It can be inferred that this Anukta Mana is applicable while designing a new formulation because most of the classical formulations have their ingredient’s quantities mentioned. In relation to this, the quantity of sugar was decided. For any Avaleha to be prepared, Sneha is an important constituent. Here, that was omitted because the Kalka itself was processed in Sneha. Hence, addition of extra Sneha is not necessary. Also, when we speak of upcycling it indicates towards the process of transforming by-products or wastes into new product of better quality with minimal investment. So, addition of Ghrita will mean unnecessary investment.

Ashwagandha, as such is a Tikta Dravya. Even after preparation of Ghrita, the Ghrita ends up tasting bitter. The Sneha Kalka obtained from it is also extremely bitter to taste. On addition of Sharkara, the bitterness of the drug reduces substantially rendering it palatable. Also, the Sheeta Veerya of Sharkara helps in balancing the Usnatva of Ashwagandha. Hence, this can also be given in children as a substitute for expensive malt based health drinks.

Also, to enhance the taste and acceptability ingredients like cocoa powder, vanilla essence etc. can be added to the preparation after the stage of granulation. There is a wide scope for exploration in this purview.
CONCLUSION

In an era where new medicinal plant is being added to the list of endangered species, this way of upcycling might be of tremendous help. The so prepared Ashwagandha granules are an efficient substitution because the Sneha Kalka formed out of Sneha Paka might retain certain amount of active principles making it beneficial. Also, since the waste is upcycled, the wastage of large quantities of Dravya is minimized and converted into new dosage form. As the saying goes “It’s not about what it is, It’s about what it can become”. There is tremendous scope for further exploration and research in relation to waste management in the Ayurveda Pharmaceutical Industry.

REFERENCES


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