

**PHARMACEUTICO-ANALYTICAL STUDY OF DRY FRUITS LINCTUS****Akshatha Gugad<sup>1</sup>, Susheel Shetty<sup>2</sup>, Subrahmanya Padyana<sup>3</sup>, Krishnamurthy M S<sup>4</sup>, Raghavendra Rao<sup>5</sup>**<sup>1</sup>IV<sup>th</sup> Year BAMS, Alva's Ayurveda Medical college, Moodbidire, Karnataka, India<sup>2</sup>Professor, Dept of PG studies in Kayachikitsa, Alva's Ayurveda Medical College Moodubidire, Karnataka, India<sup>3</sup>Director, Alva's Traditional Medicine Archive (ATMA) & Research Centre, Alva's Ayurveda Medical College Moodubidire, Karnataka, India<sup>4</sup>Dean, PhD Studies, Alva's Ayurveda Medical college, Moodbidire, Karnataka, India<sup>5</sup>Professor, Dept. of PG studies in Biotechnology, Alva's College, Moodabidire, Karnataka, India**Corresponding Author:** [akshatagugad99@gmail.com](mailto:akshatagugad99@gmail.com)<https://doi.org/10.46607/iamj05p6022022>**(Published online: January 2022)****Open Access**

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All nutritive value of dry fruits is not completely met to children by its direct administration and most of the children refuses to take dry fruits as such. Among various classical preparations, *Leha* has its upper hand based on its palatability, easy mode of administration and long shelf life. Administration of dry fruits which has proven difficult in children can be resolved by converting it into *leha* form and dry fruit linctus become an effective and beneficial method of supplying the nutrients and other supplements to the children in adequate quantity. The standard operative procedure of linctus preparation is undertaken, and dry fruit linctus is successfully prepared as per the classics. The pharmaceutico-analytical data were observed and recorded. Analysis of dry fruit linctus was carried out as mentioned in Ayurvedic Pharmacopeia of India. The prepared *leha* has shown the upper hand over separate dry fruits in palatability, action and absorption. The overall research is encouraging in the presenting study.

**Keywords:** *Leha*, Dry fruit linctus, Pharmaceutico -analytical study.

## INTRODUCTION

As dry fruits are effective nutrients, but as such administration of dry fruits is very difficult in children. Thus, conversion of these supplements<sup>1</sup> is needed, to supply nutrition to the children in adequate quantity. For children, the most appreciable and convincing way of administration of supplements is in linctus form. Thus, from different types of available classical preparation such as *Choorna*, *Vati*, *Leha*, *Asava* and *Arista*<sup>2</sup>, a highly palatable, long shelf life<sup>3</sup> and nourishing preparation is *leha*.

Since the *leha* preparation contains *snehana dravya*, sweetening agents<sup>4,5</sup>, carminative drugs, it is *balya*, *ruchikara*, *dhatu vardhaka* and easy to digest. The dry fruits in *leha* form will supply more amount of energy and yields benefits such as healthy bones, prevention

of anaemia, aids digestion, as it contains dietary fibres, minerals, calcium, iron, antioxidants.

Thus, by the nutritional importance of dry fruits, an effort to prepare it in *leha* form is taken up in the present study.

### Materials and Method:

The drugs required for the preparation were collected from a dry fruit shop, Moodubidire. Authentication of drugs was done in the department of *Dravya Guna*, Alvas Ayurveda Medical College, Moodbidire. The preparation of dry fruit linctus was done at the laboratory of *Rasashastra and Bhaishajya Kalpana*, Alva's Ayurveda Medical College, Moodbidire as per the classical reference.

**Table 1:** Ingredients

NAME OF THE INGREDIENTS	QUANTITY
Raisins	50 gm
Dates	50 gm
Water	800 ml
Sugarcane Juice	200 ml
Pista	25 gm
Almond	25 gm
Cashew	25 gm
Cardamom	2 gm
Ghee	50 ml

**Preparation of dry fruit linctus:** Raisins and Dates *Kashaya* is prepared as per the classics, that is 50gm each raisin and dates is boiled in 800ml of water and reduced to 1/4<sup>th</sup>, 200ml of sugar cane juice is added and dissolved. Observed for *Asanna paaka lakshanas* and then, the pulp of residue of raisins and dates are fried with 50ml of ghee, for which prepared *Kashaya* is added just before attaining *Lehya paaka siddhi lakshanas*, fine powders of Pista, Almond and Cashew, 25gm each and 2gm fine powder of cardamom was

also added with constant stirring. Then, the vessel is taken out of the fire and allowed to cool. Then it is packed in an airtight wide-mouthed container. The obtained *leha* has got all *leha paaka siddhi lakshanas*.

The pharmaceutical-analytical study of dry fruit linctus was done with parameters like a loss on drying at 105-degree Celsius, total ash, acid-soluble ash, water-soluble ash, total sugar, reducing sugar, nonreducing sugar, pH and proteins were done as per the Ayurvedic pharmacopoeia of India<sup>6</sup>.

**RESULTS:****Table 2:** Organoleptic characters of dry fruit linctus

Description	Results
Form	Semisolid
Colour	Brown
Odour	Characteristic aromatic odour
Taste	Sweet and sour

The results of the Analytical study are mentioned below in table no. 3

**Table 3:** Analytical study of dry fruit linctus

Serial no	Description	Results
1	Loss on drying at 105 degrees Celsius	10%
2	pH value	4.2
3	Total ash	2.88%
4	Water-soluble ash	1.66%
5	Acid soluble ash	1.25%
6	Reducing sugar	29.56%
7	Non reducing sugar	20.543%
8	Total sugar	50.04%
9	Proteins	17%
10	Electrical conductivity	157mV

**DISCUSSION**

In Ayurveda, Bhaishajya Kalpana is a branch that deals with the transformation of standard raw drugs to different preparations like *choorna*, *vati* and *avaleha*. In *Avaleha Kalpana*, the liquid media of *Aushadha Dravyas* is added with sweetening agents, lipid medium, powder form of additives. Later on, *Asanna paaka lakshanas* and *leha paaka siddhi lakshanas* are noticed. Different analytical studies were carried out. The dry fruit linctus showed brown colour, sweet and sour taste with a characteristic aromatic odour. The ash value determines the identity and cleanliness of the drug, and the value is 2.88%. The acid-soluble ash indicates the presence of inorganic matter as an impurity which is 1.25% and has a good move towards palatability. It is noticed that the shelf life of *lehya* is more due to the addition of a sweetening agent that is sugar cane juice. *Lehya* has shown faster absorption than single dry fruit due to its semisolid consistency.

**CONCLUSION**

Here the well-known dry fruits are modified into *lehya* a form that was prepared according to classical reference and is subjected to pharmaceutico-analytical study with different parameters, *lehya* are having better palatability and it is widely accepted by children because of their sweet taste. It is also noticed that the shelf life of *lehya* is more. It is also proved that liquids and semi-solids act faster than solids because of faster absorption. To get protected from early deterioration the *lehya* consist of a concentrated sugar cane juice solution. Thus, here the *lehya* from classical formulation dry fruit *lehya* is prepared are analysed. Thus, preparations can be utilized for clinical trial and upper hand of single dry fruit over dry fruit linctus can be documented and recommended wider therapeutic use

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