

A Review :

DIFFERENT DRYING TECHNIQUES FOR PREPARATION OF FRUIT JUICE POWDER

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Accepted : November, 2007
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ABSTRACT

The aim of drying is to improve the storability of the products by reducing its moisture content. For preparation of fruit powder, fruit juice is dried using different types of dryer. As the fruit is perishable, one of the drying techniques is used to enlarge its lifetime for consumption, reducing its volume, and minimizing packaging and transportation cost, also improving sensorial attributes and preserving the nutritional value. The fruit juice powder is used for the beverages, baked goods (biscuits, bread), pharmacy, flavouring, ice cream, soups, baby foods *etc.* Due to enhancing shelf life the fruit juice powder offer several advantages. Such as, economy of transportation through reduced mass and volume. Also, act as balance wheel to meet the challenges of regional and seasonal surpluses. Its use in emergencies and disastrous management and suitable for the tailored food formulation.

Key words : Fruit drying, Technique, Preservation.

Fruits are perishable, and yet for a number of reasons it is desirable to preserve it for later consumption. Drying can be described as the removal of 95% or more of the water from a food substance, by exposure to thermal energy by various means. Of the many methods of preservation, drying is one of the most prevalent methods for food preservation. The ultimate aim of drying is to improve the storability of the products by reducing its moisture content.

For preparation of fruit powder, fruit juice is dried using types of dryer i.e. Spray dryer for mango juice, tomato juice, orange juice, guava juice, Rotary dryer for banana, Vacuum dryer for mango juice, guava juice, Foam mat drying for mango juice, Freeze drying for pineapple juice, mango juice blue grape juice, mosambi juice, guava juice, Drum drying for tomato juice, guava juice, Cabinet drying for guava juice, foam mat drying for lemon juice. (Ammu *et al.*, 1997; Jayathilakan *et al.*, 2003 and Arya *et al.*, 1958)

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RESULTS AND DISCUSSION

Drying techniques for preparation of fruit juice powder:

No horticultural venture can be complete success without the accompaniment of its two necessary adjuncts, namely post harvest technology and processing technology. Drying is one of them for fruit preservation.

Mango :

The king of fruit mango (*Mangifera indica*) is considered as one of the choicest fruit of the world because of its attractive colour delicious taste and excellent nutritional properties (Khalil, 2002).

Mango powder is prepared by sun drying, solar drying thin layer forced convection drying, fluidized bed drying. Among this thin layer forced convection drying, are most suitable to prepare the mango powder. (Jaya and Das; 2003 and Sharma, 1974)

Preparation of mango powder using thin layer forced convection drying, at temperature 60°C and 30m³/min airflow rate. The thickness of mango slices should be 5-7mm. The moisture content of dried powder observed to be 4 to 5% (d.b.) (Sagar, 2000)

The other method for mango powder is spray drying, where juice with 12° Brix is used and maltodextrin, arabic gum, and waxy starch are added at concentration of 12% (pp). The result shows that, stickiness of the final product decreased. The drying parameters are input temperature 160°C, out put temperature 74°C (Muralikrishna, 1969; Savaliya and Dayabhai, 2000 and Jaya and Das, 2004)