WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Processing and Organoleptic Evalution of Fudge Prepared by using Dehydrated Fig

Medha kumari[1], Dr. Priyanka Shankar[2]

PG Student[1], Assistant Professor[2]

[1,2]Department of Food Science & Nutrition School of Home Science Babasaheb Bhimrao Ambedkar University (A, Central University) Lucknow, 226025

ABSTRACT:

Essential nutrients, phytochemicals, and antioxidants are abundant in fig fruit, which is prized for both its fresh and processed forms. Fig fruit has a high-water activity level, making it very perishable. The fig fruit must be processed in order to maximise its value and frequency of use in our daily diet. This study attempted to create the technique for processing fresh figs into powder, which would then be added to fudge, which people of all ages were really interested in eating. Fig mechanically dehydrates by using dehydrator machine. In order to mechanically dehydrate figs, we maintained them at 75 degrees Celsius for 24 to 48 hours while following the correct instructions and keeping track of their progress. powder produced by crushing dried fig slivers from dehydration. About 15 g of fig powder was added to the recipe formulation when it was being made. Fig powder that has been dehydrated has a strong nutritional value and acceptable characteristics. The product prepared from the dehydrated fig powder is fudge, which is a type of confection. The final acceptability of the product was based on its sensory quality. The Hedonic rating scale used to know about flavour, mouth feel, appearance and overall acceptability of the fudge. It was found that Fudge prepared by 15g of mechanically dehydrated fig was accounted highest organoleptic values.

KEYWORDS: Fudge, Mechanical dehydration, Fig powder, Confection

1. INTRODUCTION

Traditionally, it is very well known by us that fruits are most important source of nutrient in our daily food habit. Many studies and research describe the importance of fruits in our life for the maintenance of our bodies. There has been large number of beneficial studies suggested that increase consumption of fruits decreases the risk of chronic disease such as cancer, heart disease, and stroke. All recommendable fruits are mostly taken in fresh form while there is no evidence that prove that there are any nutrients destruction in dried fruit or any change in nutritive value of dried fruit except than change in volume.

Figs are one of the most therapeutically use fruit, because of high nutrition and medical value. Mostly figs are consumed in dried form which is sweet in taste, also it is consumed in fresh, preserved, freezed, canned form. The fresh form of fig fruit is highly perishable can be stored in refrigerator for 2-3 days while the dried form of fig can store more than 6-7 month. The process drying the fresh fig in dried form have many advantages for food quality as it decreases water activity and minimized physical and chemical changes, so that fruit can be stored for long period of time. Fig helps in balancing the pH of the body because it is one of the alkaline fruits. It is delicious and with many nutritional properties such as good source of fibre which helps in promoting bowel function, rich in calcium which prompts bone density and also contain several medical components such as flavones which can be used in cardiovascular disease medicine production. Dried figs are delineated to be good source of carbohydrates, sugars, organic acid, phenolic compounds, and also free from fat and cholesterol. Furthermore, Figs have good amount of vitamin A, C and E which are considered an antioxidant can effectively prevent deficiencies and vision destroying disease like macular degeneration. Vitamin K and some minerals like copper, manganese, magnesium, potassium, calcium are also found in fig.

Ficus Carica is the scientific name of fig in which antidiabetic, hypolipidemic, hepatoprotective, antispasmodic, antipyretic, antibacterial, antifungal, scavenging activity and immune response also has been found. Dried figs are fat free, sodium free, and cholesterol free like other plant foods. The rush and work load in day-to-day life may increase the demand of good quality of nutrition in our life. As result we can add dried fig in different form to our diet incorporates with different food products. Mostly dried form of figs commercially sold while fig can used in more different form, mostly as jam – jelly, barfi, and other sweets.

Figs (Ficus Carica) in one of the most admired fruits in India. Different variety of fig grown in different states of India including Karnataka, Tamil Nadu, Maharashtra, Gujrat, and Uttar Pradesh. However, there are approximately 800 varieties of figs in the world, the fig variety “Poona” is the most popular in India even so 21 more varieties of fig are also cultivated in our country. It can grow to more than 2.4m tall in only three month and start bearing fruits. The Common fig is a large, deciduous shrub or small tree native to southwestern Asia and the eastern Mediterranean region (Greece east to Afghanistan). It grows to a height of 3–10 m, with smooth gray bark. The fruit is 3–5 cm long, with a green skin, sometimes ripening towards purple. The sap of the

tree's green parts is an irritant to human skin. The fig fruit is actually the flower of the tree, known as an inflorescence (an arrangement of multiple flowers), a false fruit or multiple fruit, in which the flowers and seeds grow together to form a single mass. Figs have a laxative effect and contain many antioxidants. Moreover, they are a good source of flavonoids and other polyphenols. In one study, a 40 g portion of dried figs (two medium size figs) produced a significant increase in the plasma antioxidant capacity. Fig trees are commonly cultivated in warm and dry climates. The ideal conditions for intensive fig cultivation are a semiarid climate and orchards equipped with an irrigation system. According to the Food and Agriculture Organization of the United Nations the world production of fig fruit is stable, with a decade average of approximately 1.1 million tons per year. Turkey is the biggest world producer with 298,914 tons in 2013 accounting for 26.8% of total world production.

According to Vinson JA, (1999) the major aims of fig fruit provide good quality products with good flavour, colour, texture, and taste and make convenient fruit products. Therefore, many attempts are made for increasing the self-life of fig without any disturbance in nutritional quality of products. The process of dehydration method for fig may vary in different categories such as sun drying, oven drying, solar drying, mechanical dehydration and osmotic dehydration. The dehydration process decreases the volume of fruits by decreasing the moisture content from figs because the framework of fruit is made of cellulose which forms the walls of the plant cells and in which large amounts of water are held which may increase the microbial activity which may shortens its shelf life, while dehydration process doesn't affect the nutritional quality of figs. To assess their effect on the nutritional and health related properties of figs, sugars, organic acids, single phenolic, total phenolic and antioxidant activity were determined before and after processing. Drying causes water removal result changing in textures such as shrinkage and fruit hardening. The pH of fig may also differ from fresh fig to dried fig.

The product prepared from the dehydrated fig powder is fudge, which is a type of confection. It can easily prepare at home by mixing of dates syrup, butter, milk, and additional product to enhance the taste and nutritional quality of product. Fudge prepared from dehydrated fig is also desirable product among the healthiest choice. It is a kind of dessert or sweetmeat.

Although the history of fudge's invention is hazy, the sweet dessert first made an appearance in notebooks and diaries at the end of the 19th century. And although many people would presume that fudge was invented in the UK, it was actually made in America!!!The early fudge recipes were renowned for being delicate, requiring exact amounts and cooking times to produce the sweet and smooth final product.

2.MATERIAL AND METHOD-

This section contains the preparation and processing of Fudge prepared by using dehydrated fig.

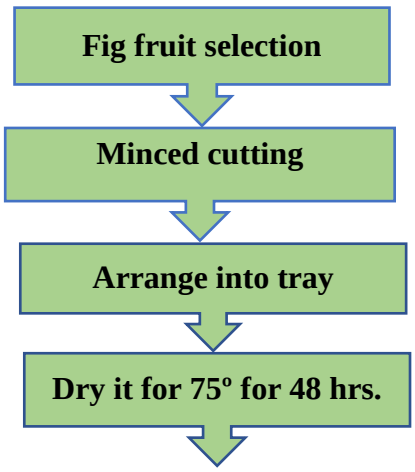
TOOLS: Dehydrator, Mixer Grinder, Refrigerator, Weighing Machine, Spoon, Gas Stove, Pan, Plates, knife

COLLECTION OF RAW INGREDIENTS: Dried fig packet, dried dates packet, butter, milk vanilla essence and sodium bicarbonate were collected from the local grocery market of Telibagh, Lucknow and Uttar Pradesh.

2.1 Processing of fig fruit powder

The study was conducted at School of Home Science Department, Babasaheb Bhimrao Ambedkar University, Central University, Vidiya Vihar Raibareli, Lucknow 226025.

The dried form of fig was purchased from local market of Lucknow in bulk. To increase the surface area, the fig was minced before being placed onto an aluminium tray for 48 to 72 hours at 75°C under strict supervision. The appearance of the fig should be periodically checked to ensure that it doesn't burn for an extended period of time owing to warmth. This ensures that there are no mistakes made when drying the fig to remove the moisture content. After the dehydration time, the fig was placed in a grinder to be ground into powder. As a result, fig powder is mechanically dehydrated.



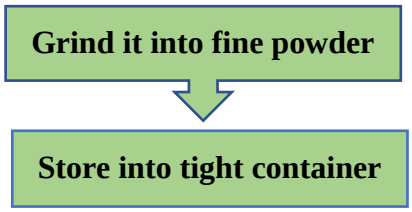


Fig. 1 Processing of Fig Fruit Powder

2.2 Product Development

Fudge was made with mechanically dehydrated fig powder. This is made by combining components in correct proportion such fig powder (25g), dates syrup (50g) which can be used in place of sugar, butter (5g), milk (15ml), water (15ml), vanilla essence (3 drops), sodium bicarbonate and addition of chopped dry fruits may optional. Fudge is made by gently heating of manually adding of ingredients for a predetermined amount of time, beating it until the desired consistency is reached after withdrawing it from the heat, and then pour into greased tin, mark into desired shape after cooling it by the use of refrigerator.

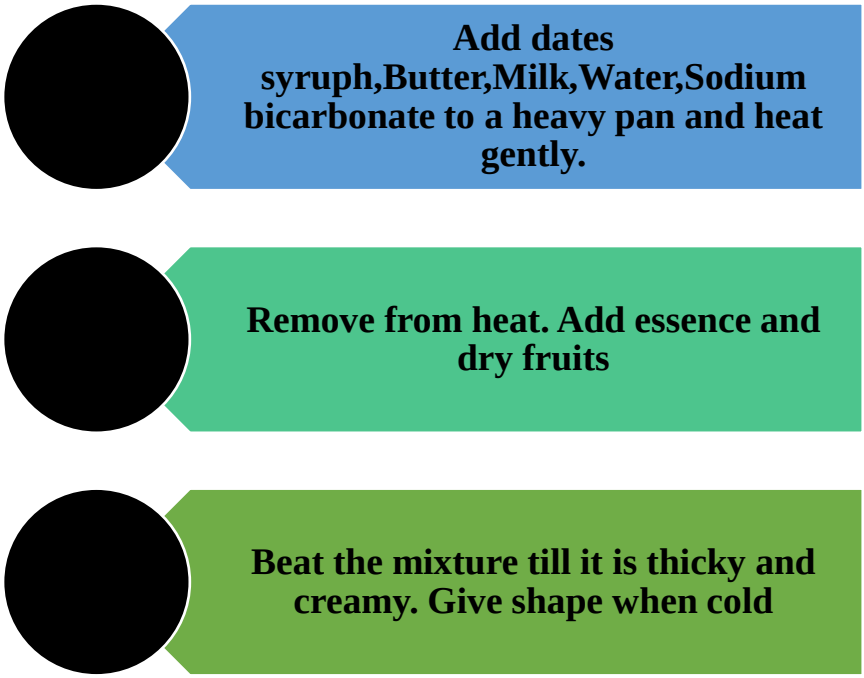


Fig. 2 Preparation of Fudge

3.RESULT AND DISCUSSION

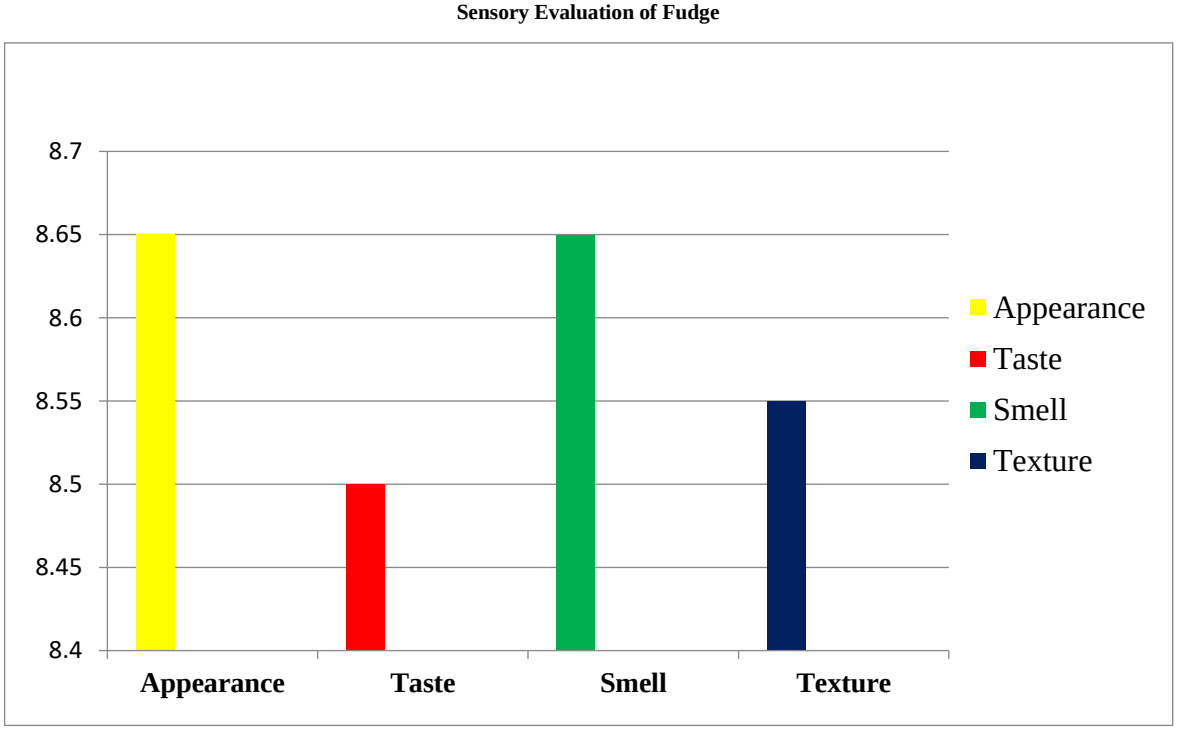
Organoleptic evaluation

The organoleptic evaluation of Fudge from dehydrated fig based on sensory evaluation between semi-trained group of people. It was found that Fudge prepared by 15g of mechanically dehydrated fig was accounted highest organoleptic values. A total 20 number of members randomly selected to assess the appearance, colour, taste, and flavour of the fudge. Sensory quality is a combination of different senses of perception coming unit play in choose and eating a food, appearances, flavours and mouth feeling decided and appearances of the food.

The final acceptability of the product was based on its sensory quality. The Hedonic rating scale used to know about flavour, mouth feel, appearance and overall acceptability of the fudge.

Table 1: Sensory scores of Fudge on the basis of Acceptance

Panelist Member	Appearance/ Colour	Taste/ Flavour	Smell/ Odour	Texture/ Mouth feel
1	9	9	9	9
2	9	9	9	9
3	9	9	9	8
4	9	8	9	8
5	9	8	8	9
6	8	8	8	8
7	9	9	9	9
8	8	7	8	7
9	8	8	8	9
10	9	9	9	9
11	9	9	8	7
12	9	9	9	9
13	8	8	8	8
14	8	8	9	8
15	9	9	9	9
16	9	9	9	9
17	8	9	8	9
18	8	9	9	9
19	9	8	9	9
20	9	8	9	9
TOTAL	173	170	173	171
AVERAGE	8.65	8.5	8.65	8.55



4.CONCLUSION

We can infer from the study that fig can be mechanically dried and then used in a variety of food products as a fine powder. It can be kept in an airtight container for more than two to three months after the moisture has been removed. According to the study, products with dehydrated fig powder added are popular among consumers of all ages. Because of their high nutritional content and accessibility in local markets, figs are generally considered to be acceptable or edible fruits. Fudge, a processed product made from dehydrated figs, scored highly on the sensory evaluation. The use of mechanically dehydrated fig fruit in various products expanded the range of food items that offer a good complement with the appropriate nutritional content.

5. REFERENCE

- Makeshwari, R., & Bhuvaneswari, D. (2019). Processing and value addition of fig fruit. *International Journal of Research and Analytical Reviews*, *6*(2), 157-162.
- Gülcin, I. (2012). Antioxidant activity of food constituents: an overview. *Archives of toxicology*, *86*, 345-391.
- Murtaza, M. A., Huma, N. U. Z. H. A. T., Mueen-Ud-Din, G., Shabbir, M. A., & Mahmood, S. H. A. H. I. D. (2004). Effect of fat replacement by fig addition on ice cream quality. *Int J Agric Biol*, *6*(1), 68-70.
- Soni, N., Mehta, S., Satpathy, G., & Gupta, R. K. (2014). Estimation of nutritional, phytochemical, antioxidant and antibacterial activity of dried fig (Ficus carica). *Journal of Pharmacognosy and Phytochemistry*, *3*(2), 158-165.
- Bharathkumar, A., Jagadeesh, S. L., Hegde, V., Bhuvaneshwari, G., & Bindu, H. (2018). A study on fruit preparation on quality of fig fruits (cv. Bellary) osmotic-dehydrated under solar tunnel dryer. *Journal of Pharmacognosy and Phytochemistry*, *7*(3), 3177-3180.
- Verma, I., & Gupta, R. K. (2015). Estimation of phytochemical, nutritional, antioxidant and antibacterial activity of dried fruit of sacred figs (Ficus religiosa) and formulation of value added product (Hard Candy). *Journal of Pharmacognosy and Phytochemistry*, *4*(3), 257-267.
- Dhumal, C. Y., Dhemre, J. K., Kad, V. P., & Shete, M. B. (2018). Chemical and sensory changes during storage of concentrated fig (Ficus carica L.) pulp. *IJCS*, *6*(2), 1837-1843.
- Anand, A., Jagadeesh, S. L., & Bhuvaneshwari, G. (2018). Effect of different pre-treatments on dehydration of fig fruits under electric tray dryer. *International Journal of Chemical Studies*, *6*, 1716-1721.