National Conference on Recent Trends in Synthesis and Characterization of Futuristic Material in Science for the Development of Society
(NCRDAMDS-2018)
In association with
International Journal of Scientific Research in Science and Technology

Improvement of Therapeutic Value of Strawberry Jelly by Adding Drumstick Seeds and Basil Seeds in Considerable Quantities

Sakshi Bang*, Kapil Ubarhande ,Shivani Deshmukh
Sau Vasudhatai Deshmukh College Of Food Technology, Amravati, Maharashtra, India

ABSTRACT

Jelly was prepared from strawberries and it is added with drumstick seeds which are rich in protein and vitamin C. The other ingredient is basil seeds which has cooling effects and helps lowering the acidity. Sensory evaluation for appearance, colour, texture and flavour was carried out and scores were compared favourably with that of normal strawberry jelly. Basil seeds gave characteristic cooling effect to jelly due to which acceptability of jelly was increased. Drumstick seeds helped jelly to be rich in vitamins and minerals content.

Keywords: Jelly, Drumstick Seeds, Basil Seeds, Strawberry

I. INTRODUCTION

Strawberry is the basic ingredient which contains more than 50% of sugar in strawberries in glucose [1]. They also contain unsaturated fatty acid [2]. It is also a good source of manganese and provides several other vitamins and dietary minerals in lesser amount.

Another important ingredient of jelly is drumstick seeds which are rich in fibre and calcium [3]. It has 30 mg of calcium and 2.5g of protein [4].It is best to treat the heart diseases, lower cholesterol, reduce blood sugar level and boost immune system. The ability of seeds to rid the body of free radical and protect cell from damage [5]. They also have very powerful antioxidant properties. The oil from seeds can be used as therapeutic treatment for some liver disorder [6]. Taking 3g of seeds for 3 weeks helps to improve the symptoms of bronchial asthma [7]. The seeds have 7 times more vitamin C than oranges, 10 times more vitamin A than carrot, 25 times more iron than spinach and 15 times more potassium than bananas [8].

Basil seeds are the best medicine for weight loss. They have cooling and smoothing effects which helps to lower acidity of stomach. They are also good for diabetic patient.

II. METHOD AND MATERIAL

a. Jellies and seeds:
The jelly was prepared in the pilot plant in Sau.Vasudhatai Deshmukh College of Food Technology Amravati. The strawberry and drumsticks were purchased from the main market of Amravati. Other ingredient such as water, sugar, pectin etc. was also added in jelly as per requirement.

b. Preparation of Jelly:
Jelly was prepared by the jelly making process. Take a strawberry juice from the strawberries and add the required amount of sugar heat them till the mixture became little thick. Now add the pectin and set the jelly in a glass bowl. When the mixture was in liquid state added the soaked basil seeds [soak the seeds a night before making jelly in water]. Meanwhile boil the drumstick seeds and as it got boiled some sugar was added and the gas was put off. And now those drumstick seeds were added in the jelly and it was kept in the refrigerator for 2 hours. Then the jelly was ready.

c. Sensory Evaluation:

A 10 member panel evaluated jelly for colour, texture, appearance, flavour preference. All panellists were asked to indicate preference on 9 point hedonic scale and also to rank jelly in order to overall preference. The sensory properties of jelly were measured using 9 points of hedonic scale method [9].

d. Proximate analysis:

Proximate analysis was carried out by Standard AOAC [1997] method [10] for all samples including control sample. Protein, iron, fats, crude fibre, moisture, ash were evaluated.

i. **Moisture:**
Moisture content was measured by modified vacuum oven method 925.09[10]. The moisture content of set jelly was measured at room temperature on weight basis.

ii. **Fat:**
Fat content was estimated by method 920.85[10]. The jelly sample was extracted with petroleum ether for 16 hours. The jelly weight gave fat content.

iii. **Carbohydrate:**
Carbohydrate concentration was estimated by subtracting other solids.

iv. **Iron:**
The iron is determined by converting iron to ferric form by using oxidising agents like potassium persulphate or hydrogen peroxide and treating thereafter by potassium thiocyanate from the red ferric thiocyanate which is measured colorimetrically at 480 nm [12].

III. RESULTS AND DISCUSSION

a. SensoryEvaluation

Table 1

Sample	**A**	**B**	**C**	**D**
Attribute				
Appearance	4.4	5.2	7.9	6.3
Colour	5.7	6.6	7.9	6.4
Texture	6.8	6.5	7.8	6.4
Flavour	4.1	5.2	8.1	6.7
Overall Acceptability	5.25	5.875	7.925	6.45

Where sample" A" has 12% drumstick seeds, 70% jelly and 28% basil seeds. Sample "B" has 48% drumstick seeds, 50% jelly and 2% basil seeds. Sample "C" has 28% drumstick seeds, 69% jelly and 3% basil seeds. And sample "D" is Control sample (Plane Strawberry jelly).

Jelly(C) gain more sensory score than control sample at each attribute of overall acceptability. The colour score increased from 6.4 to 7.9 of control jelly (D). In case of texture it is increased 6.4 to 7.8 of control jelly (D).

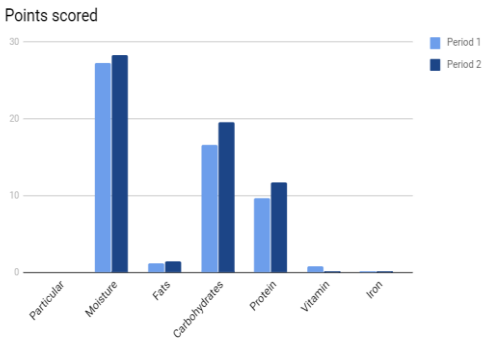
b.Proximate Analysis:

Proximate Analysis of overall accepted and control jelly was carried out and result obtained is presented in table 2.

It is seen from the table that the jelly with 28% drumstick seed and 69% jelly contain 11.7g protein as compared to Control sample i.e. 9.7g. The iron and vitamin A is also increased of (C) jelly than (D) i.e. iron has increased from 11.8g to 17.16g.

Table 2

Particular	**D (%)**	**C (%)**
Moisture	27.33	28.33
Fats	1.2	1.4
Carbohydrates	16.6	19.6
Protein	9.7	11.7
Vitamin	0.828	0.198
Iron	0.118	0.1716



From the above table we can see that the jelly (C) has superior nutritional qualities than that of (D). Quantity of protein is increased by 2g and quantity of iron is also increased by about 6.8mg per 100g.

IV. CONCLUSION

The drumstick seeds protein concentration offers alternative to meat and egg with the strawberry jelly, which is rich in protein, iron and vitamin C, which is very good for all age group. According to the above research the drumstick seeds are rich in calcium, vitamins and iron. It is proved that the seeds help to regulate blood sugar level and it is helpful for the young and old people. If the intake of jelly is taken twice a day it will fulfils all the regular requirement of iron, calcium, protein and vitamin.

V. REFERENCES

[1]. Food Facts and Principle by N.Shakuntala Manay and M.Shadakshara Swamy. (pg. no. 180).
[2]. Fruits and Vegetables Preservation by R.P.Srivastava and Sanjeev Kumar. (pg. no. 217 and 218).
[3]. Food Science by B.Srilakshmi (pg.no. 172).
[4]. Food Science by B.Srilakshmi (pg.no. 176).
[5]. Food and Chemical Toxicology (Journal).
[6]. Food Science (Journal).
[7]. The Indian Journal of Pharmacology (Journal).
[8]. Food Science and Human Welfare (Journal).
[9]. Ranganna S. 1999. Handbook of Analysis Quality for Fruit and Vegetables.
[10]. AOAC. 1997. Official method of analysis (16th ed.). Washington DC; Association of Official Analytical Chemists.
[11]. Jennifer S.K, Andrew C.Y., Ana. I.G., Dennis D.M. 2001. A rapid method for iron determination in fortified. Food Chemistry 75: 371-376.
[12]. National Institution of Nutrition. 2011 Dietary guidelines for Indians (2nd ed.). Hyderabad, India.