IJFANS
International Journal of Food And Nutritional Sciences

Volume 4, Issue 1, Jan-Mar 2015, www.ijfans.com e-ISSN: 2320-7876

INTERNATIONAL JOURNAL OF FOOD AND NUTRITIONAL SCIENCES

IMPACT FACTOR ~ 1.021

Official Journal of IIFANS

e-ISSN 2320 –7876 *www.ijfans.com*
Vol.4, Iss.1, Jan-Mar 2015

Research Paper *Open Access*

EVALUATION OF ORGANOLEPTIC PROPERTIES OF BEETROOT GREEN PULP INCORPORATED VANILLA ICE CREAM

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Received on: 2nd March, 2015 **Accepted on: 2nd April, 2015**

Beet root green pulp is incorporated in vanilla ice cream with the objective of developing a product which has improved flavor, nutrition& is a healthy alternative for traditional vanilla ice cream. Different treatments (3%, 6%, 9%, and 12%) with varying proportions of beetroot green pulp were developed along with a control. Using 9-Point Hedonic scale organoleptic evaluation of the ice cream was carried out. The data obtained was analyzed statistically using analysis of variance and critical different techniques. T1 treatment scored maximum with highest average and least SD which indicate its highest acceptability among the four studied treatments.

Key words: Organoleptic evaluation, Sensory characteristics, Fortification, vanilla ice cream, beetroot green pulp.

INTRODUCTION

Ice cream is a frozen dessert and often combined with fruits or other ingredients and flavors.There are three categories of ingredients in the ice cream mix: dairy, sweeteners, and additives. Milk, cream, and non-fat milk solids make up the dairy portion of ice cream. Sucrose is used to sweeten the mix, and stabilizers and emulsifiers are added to give the ice cream the desired body and mouth feel. Air is also present in finished ice cream. Standard ice cream contains an equal volume of mix and air (Daksh, 2011). In addition to flavours different types of fruits, swirls, and any bulky type of flavorings (nuts, candy pieces, etc.) are also added in ice cream to increase the nutritional component of it. Bulky flavored ice creams are those containing large amounts of flavorings such as chocolate and strawberries.

Beetroot is of exceptional nutritional value; especially the greens, which are rich in calcium, iron and vitamins A and C. Beetroots are an excellent source of folic acid and a very good source of fiber, manganese and potassium.Beet green leafy tops are the healthiest part of the plant.Besides containing important nutrients like protein, phosphorus, zinc, fiber, vitamin B6, magnesium, potassium, copper, and manganese, beet greens also supply significant amounts of vitamin A, vitamin C, calcium, and iron.

Beet greens actually have even more iron than spinach (another leafy green in the same botanical family) as well as a higher nutritional value overall than the beetroot itself (Mercola 2014).

OBJECTIVES

- To develop a nutritious beet green vanilla ice cream.
- To evaluate the organoleptic and nutritional quality of developed beet green vanilla ice cream.

METHODOLOGY

PREPARATION OF EXPERIMENT

Nutritious beet green vanilla ice cream(50 g) was prepared by using Ice cream mix. Heating of milk at a temperature of 155°F (68.3°C) for 30 minutes or 175°F (79.4C) for 25 second. Now vanilla extract is added and the mixture was kept in the refrigerator for 2 hours after that homogenization of the mixture with beetroot green pulp at 3%, 6%, 9%, and 12% in different concentration was done& stored in an air tight container and freezed for an additional 2 hours.

TREATMENTS

T1– Beetroot vanilla ice cream using 3%beetroot green pulp.

T2- Beetroot vanilla ice cream using 6% beetroot green pulp.

T3- Beetroot vanilla ice cream using 9% beetroot green pulp.

T4 - Beetroot vanilla ice cream using 12% beetroot green pulp.

The different treatments of beet green vanilla ice cream were prepared and were put forward for the next step of the study i: e, for the sensory evaluation for identifying the best acceptable product.

Preparation of the product
↓
Coding of the developed product
↓
Quality estimation through 9 point hedonic scale
↓
Interpretation of the score card
↓
Evaluation of the best acceptable product

RESULTS AND DISCUSSION

The experimental Vanilla ice cream were sensory evaluated by a panel of seven members on a 9-point hedonic scale and marking was done on the basis of four parameters-

- Body and Texture
- Color and Appearance
- Flavor and Taste
- Overall Acceptability

The total average and standard deviation of individual product was calculated and the best of the four products was for further put forth for the next phase.

FLAVOR & TASTE

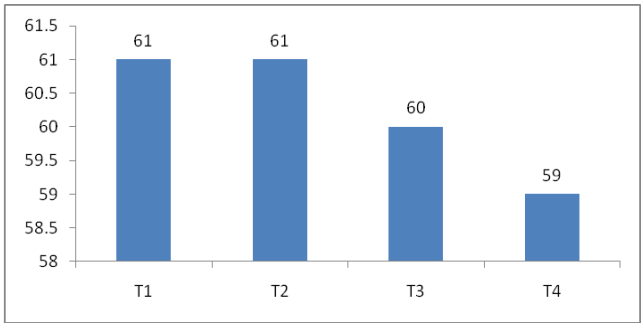

Fig 1- scores for flavour & taste

The above mentioned score represents individual markings by members on the basis of flavor and taste the minimum average scored is 59 by T4 while maximum is of T1 & T2 with an average of 61. Same findings were predicted by Nazni *et.al.*, 2011.

BODY & TEXTURE

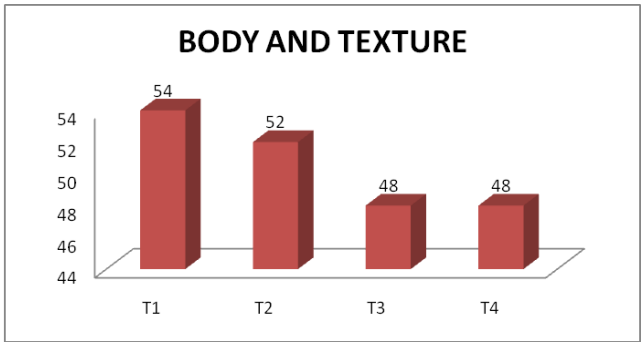

Fig 2. Scores for body and texture

The average score for body and texture for T1 is 54 which is maximum and the least score is for T3 & T4 which is 48, the body and texture is highly affected by the concentration of beetroot green pulp.

COLOR& APPEARANCE

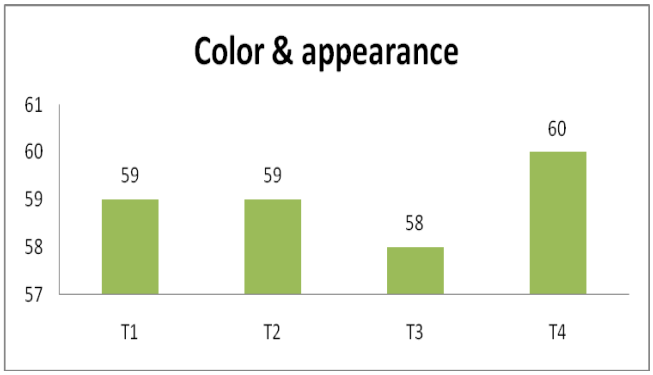

Fig 3- scores for colour and appearance

The average score for color and appearance for T4 is 60 which are maximum and T3 is 58 which are least score, the color and appearance is highly affected by the concentration of beetroot green pulp.

OVERALL ACCEPTABILITY

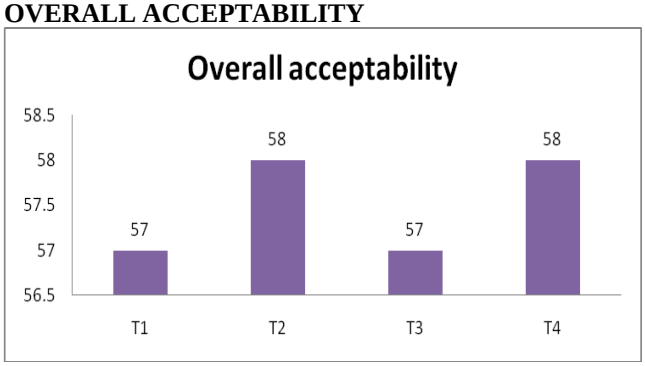

Fig 4- scores for overall acceptability

The overall acceptability graph represents the acceptance on the basis of all the mentioned parameters; the maximum average score is 58 by the product T2 & T4. After statistical analysis it was found that therewas a significant association between parameters therefore, flavor, taste, color, appearance and overall acceptability is significant (<0.05). Same findings were predicted by Nazni *et.al.*, 2010.

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