International Journal of Food Science and Nutrition
ISSN: 2455-4898
Impact Factor: RJIF 5.14
www.foodsciencejournal.com
Volume 2; Issue 5; September 2017; Page No. 171-172

Sensory qualities of processed health food based on cereals and vegetables

[1] Richa Upadhyay, [2] Raktika Yadav, [3] Krishna Deepak Tripathi
[1, 2] Department of Food Science and Nutrition, CSAUAT, Kanpur, Uttar Pradesh, India
[3] Department of Horticulture, CSAUAT, Kanpur, Uttar Pradesh, India

Abstract
Processed food was prepared by multipurpose flour like wheat flour, gram flour, rice flour with incorporation of vegetable and fruits like sugar beet, papaya, carrot etc. Sensory characteristics are analyzed by a 9 point hedonic scale, whereas nutritional quantities were assessed by A.O.A.C (1980) methods. Results showed that incorporation of vegetables and fruits powder in baby food were fully acceptable. Processed baby food prepared with wheat flour rich in protein, fat, calcium and iron. Incorporation of beet root increases the iron content. So infants should be provided this food for their proper mental and physical growth.

Keywords: sensory, characteristics, incorporation, hedonic scale, multipurpose

Introduction
Each baby's physical growth and development is determined by the characteristics acquired from ancestors, quality of nutrition of mother during pregnancy, and the adequacy of the supplements offered through out babyhood. The development of personality pattern begins at birth and is closely related to feeding habits, the importance of feeding relationship between mother and baby from the earlier days after birth. In a normal healthy child carbohydrate supplies 45-50%, fat 25-35% and proteins 10-15% calories of the total calories. A child of one year needs about 1000-1100 calorie which is met with by giving him a diet which supplies 600-650 calories from carbohydrate, 40-50 calories from proteins and 300-350 calories from fats. Apart from supply of these nutrients carbohydrates, proteins and fats other nutrient like vitamin and minerals are essential.

Method and Material
Organoleptic qualities are analyzed by a 9 point hedonic scale, whereas nutritional quantities were assessed by A.O.A.C (1980) methods. Results showed that taste, flavor, test, aroma of the powder in baby food were fully acceptable. Processed health food was prepared with wheat flour rich in protein, fat, calcium and iron. Incorporation of beet root increases the iron content. So especially baby should be provided this food for their proper mental and physical growth.

Texture
The texture of the health product was smooth and fine so it can be easily dissolve in milk and water. In survey it has been seen that due to its smooth texture the health powder was fully acceptable.

Flavor
The flavor becomes little bit bitter on increasing the amount of beet root. It shows that less the quantity of beet root more acceptability of the health food. So the flavor of the powder is depending on beetroot incorporation.

Taste and Aroma
For taste and flavor product T1 samples were R1, R2, R3, R4 and R5 with score was 7.9, 8.0, 8.1, 7.8 and 7.9 and the mean was 7.94. Product T2 has also had 5 samples. The score of samples were 8.1, 8.2, 8.0, 7.9and 8.3. The total mean of all samples of T2 was 8.1.The third product was t3 with samples 8.0, 8.3, 8.4, 8.1 and 8.2.The mean of samples of t3 was 8.2 and the over all mean of all three products for taste and flavor was 8.0. According to 9.8 hedonic scales it is an excellent score. For test and aroma little quantity of cardamom and sugar has been mixed in the powder. Cardamom decreases the unwanted smell of the powder and gives an especial fragrance to the health powder.

Color and Appearance
The average mean score for color and appearance of the 3 products namely T_1, T_2 and T_3 was 8.16, 8.2 and 8.1. T_1 was product with 15% incorporation of beet root. T_2 was 20% incorporation of beet root and T_3 was 25% beet root incorporation. The samples of product T_1 were R_1, R_2, R_3, R_4 and R_5 with average mean score of 8.2, 8.1, 8.2, 8.3 and 8.0. The mean of these 5 samples was 8.0.The samples of product were with score of 8.1, 8.0, 8.3, 8.4 and 8.2. The mean of product T_2 was 8.2. The sample's score of product T_3 were 7.9, 8.1, 8.2, 8.3 and 8.1. The mean was 8.1. The average mean of three products were 8.1, which is an excellent score according to 9.8 hedonic scales.

Over all acceptability
The score for over all acceptability of 5 samples of product T1 was 8.2, 8.0, 8.1, 7.9 and 8.2. The average mean of these 5 samples was 8.08. The second product T2 has 5 samples. The average value of these samples was 7.9, 8.0, 7.8, 8.1 and 8.2. The average of these 5 samples was 8.0.It means the overall acceptability of the product was excellent.

Table 1: Mean table of Sensory evaluation in processed food product based on cereals and vegetables.

Sensory character	Level of incorporation			Mean
	15%	20%	25%	
Color and appearance	8. 16	8.2	8.1	8.15
Taste and flavor	7.94	8.1	8.2	8.08
Overall acceptability	8.08	8.0	7.96	8.01

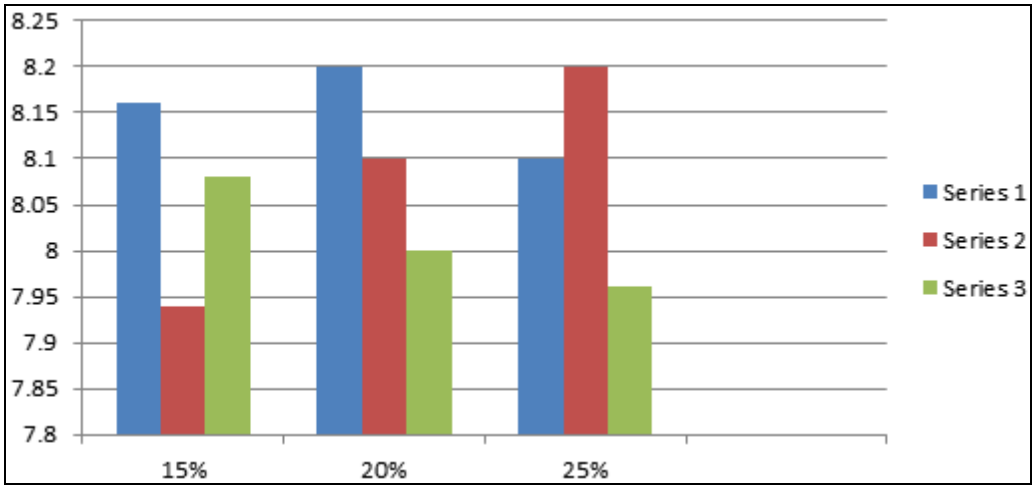

Fig 1

Conclusion

In the end of sensory evaluation it has been seen that incorporation of 20% of beet root is most acceptable in terms of color and appearance. And incorporation of 25% is most acceptable in terms of taste and flavor, because it has least bitterness of beetroot. So in this way the health food is prepared and rich in its iron content which is much beneficial for vulnerable group our society particularly females and geriatric people for their proper iron supplementation.

References

1. Ibanoglu S. Microwave effects on wheat drying (T. aestivum, L.) and flour quality. Journal of Stored Products Research. 2007; 43(4):508-514.
2. Noblet J. Impact of four tillage permutations in rice-wheat system on GHG performance of wheat cultivation through carbon foot printing. Soil &Tillage Research. 2012; 136:51-60.
3. Ombodi A. Effects of a band application of polyolefin-coated di ammonium phosphate on the nutritional quality of rhubarb and Swiss chard. International Journal of Horticultural Science. 2000; 6(4):39-42
4. Pradhan. Evaluation of microbial quality of street vended vegetable and fruit juices. International Research Journal of Biological Sciences. 2010; 3(3):60-64.
5. Ranjana Pande. Microwave drying for safe storage and improved nutritional quality of green gram seed (Vigna radiata). Journal of Agricultural and Food Chemistry; 2012; 60(14):3809-3816.
6. Rose. Quality and sensory characteristics of hard red beet after residential storage for up to 32 Y. Journal of Food Science. 2011; 76(1):S8-S13.
7. Rosenfelder. Nutritive value of wheat and wheat by-products in pig nutrition: a review. Animal Feed Science and Technology. 2013; 185(3/4):107-125.
8. Saito. Ultra structure of mature protein in starchy endosperm of dry cereal grain. Bioscience, Biotechnology and Biochemistry. 2010; 74(7):1485-1487.
9. Shahin. Effect of foliar nutrition and paclobutrazol on sugar beet yield and quality (Beta vulgaris L.). I. Yield components and juice quality. Egyptian Journal of Agricultural Research. 2004; 82(3):1269-1283.
10. Shynkaryk. Effect of the pulsed electric field (PEF) pretreatment on convective drying of red beetroot. Drying Technology. 2008; 26(6):695-704.