Research Article

A Study of Pizza Crisps- Enriched with Soya Flour

Anuradha Shekhar*

Department of Food Science and Nutrition, India

*Corresponding Author: Anuradha Shekhar, Department of Food Science and Nutrition, India

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Abstract

A healthy snack was developed and standardized with an objective to provide biologically available protein for anyone who is deficient in proteins. The base ingredients used were soya, refined flour, turmeric sesame, oregano, garlic, chilli flakes, pepper and seasonings. Sensory evaluation on a 5 point scale, using scoring test was done for a period of 4 weeks. Apart from shelf life the other aspects studied include Packaging, labelling, budgeting and marketing aspects.

Keywords: Masoya Pizza Crisps; Soya Flour; Sesame

Introduction

In India, Protein Energy Malnutrition(PEM) among children constitutes a major public health problem. When the calorie need itself, is not adequately met, even the small amount of protein available is utilised for the energy needs resulting in inadequacies of both protein and calories along with other micro nutrients [1]. At the same time, in the global scenario, India has a prime position in pulse production. In the context of widespread protein energy malnutrition and under nutrition, pulses will continue to be the major source of dietary protein. Among the grain legume as well as oilseeds, soybean occupies a unique status. Soya, the "wonder bean", is becoming popular in our country. It occupies a prominent role in Indian dietaries. Very recently, attempts have been made to incorporate soya flour at various levels in several indigenous preparations of India [2].

Considering all the above factors, an innovative recipe "Masoya Pizza Crisps" was prepared to fulfil the protein and calorie needs of children, also meeting the palatability requirements.

Masoya Pizza Crisps is a triangle shaped product, which indulges us in the taste of pizza, in the form of thin crisps. All the ingredients used, have functional properties useful for protein deficient people. Soy isoflavones have been proved to decrease the risk of invasive breast cancer and large breast tumours. According to an UK Research, soy isoflavone have also been found to be effective for treatment in Fatal Childhood Diseases. Garlic used in the recipe, is a functional food, which has been found to protect against hip os-

teoarthritis, according to Researchers at King's College, London. It is added to enhance the taste and flavour of the product. Turmeric powder used, has antibacterial properties. Refined flour has been incorporated in the recipe, to provide binding. Sesame seeds have been used, as they are a rich source of calcium and also protein. Additional spices like oregano, chilli flakes, black pepper and Italian seasonings have been added to enhance the taste and flavour [3].

Objective

1. To study the shelf life of the product through sensory evaluation.
2. To standardise a nutritious food product.
3. To develop a nutrition label, and study budgeting , packaging and marketability aspects

Materials and Methods

The Undergraduate course in Food Science and Nutrition provides a platform to inculcate entrepreneurial skills in the students under the subject Food Product Development. As we had to plan an innovative food product, two products were thought of, such as Gelato bites made up of dates and jelly; and Masoya Pizza Crisps considering protein energy deficient and anaemic women as the target group, respectively.

Result and Discussion

Sensory evaluation was done by 18 naive panellists using Scoring test. Attributes to be considered were appearance, taste,

aroma, mouth feel, colour and texture and scored out of 5, where

0= Very poor

1= Poor

2= Average

3= Good

4= Very Good

5= Excellent

As can be observed from figure 1, Gelato bites were rated high in terms of taste and colour, whereas Masoya Pizza Crisps rated low in terms of taste aroma and mouth feel, because of the typical soya flavour.

Figure 1: Gelato bites and masoya pizza crisps sensory evaluation on 18 naive panellists.

As there were no much differences found in the scores of both products during the first sensory test, the sensory evaluation was re-conducted on 30 naive panellists, using same attributes and scores, which showed that Masoya Pizza Crisps were rated much higher comparatively, in all the characteristics, as shown in figure 2.

Figure 2: Gelato bites and masoya pizza crisps sensory evaluation on 30 naive panellists.

Gelato bites were made using dates, dry fruits and jelly. The product was rich in nutrients and also scored acceptable values in sensory evaluation, but failed due to the high cost n texture. Therefore, Masoya pizza crisps was selected for further analysis.

The recipe Masoya Pizza Crisps was standardised and again sensory evaluation was done, using scoring test, by 30 naive panellists, using same attributes and scores.

Figure 3: Sensory evaluation of standardized recipe by 30 naive panellists.

From the above figure, it can be observed that texture scored the highest, i.e. very good; appearance and taste was also very good; while aroma, mouth feel and colour were found to be good. Therefore, it was found that the product was acceptable and hence, it was finalised for the study. The product was made in bulk for further shelf life study and marketing.

Standardised recipe

Ingredients	Amount (gm)
Maida	40 gm
Soya flour	20 gm
Chilli flakes	4.5 gm
Pizza seasoning	4.5 gm
Green chilli paste	1.5 gm
Turmeric powder	0.5 gm
Gingelly seeds	5 gm
Red chilli powder	0.5 gm
Garlic paste	1.5 gm
Salt	1.5 gm
Water	50 ml
Oil	7 gm

Table 1

Method

1. Sieve both the flours and mix all the ingredients to it.
2. Make a dough of the above mixture.
3. Roll it into rotis and cut into triangles.
4. Bake it in the oven, till crispy.

Packaging

Packaging is the technology of enclosing or protecting products for distribution, storage, sale, and use. Packaging also refers to the process of design, evaluation and production of packages [4].

Packaging material

There are various packaging materials available, like plastic, metal, brick carton, cardboard, glass, etc. Aluminium foil containers were chosen as the packaging material, as it is acts as a total barrier to light and oxygen (which cause fats to oxidise or become rancid), odours and flavours, moistness, and germs. Aluminium foil is widely sold into the consumer market, often in rolls of 500 mm (20 in) width and several metres in length. It is used for wrapping food in order to preserve it, for example, when storing leftover food in a refrigerator (where it serves the additional purpose of preventing odour exchange), when taking sandwiches on a journey, or when selling some kinds of take-away or fast food. Tex-Mex restaurants in the United States, for example, typically provide take-away burritos wrapped in aluminium foil. Some aluminium foil products can be recycled at around 5% of the original energy cost, although many aluminium laminates are not recycled due to difficulties in separating the components and low yield of aluminium metal [5].
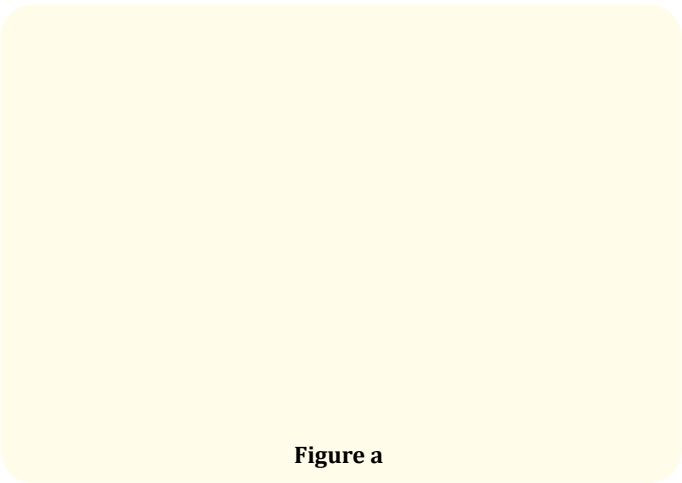

Figure a

Budgeting

Budgeting is establishing a planned level of expenditures, usually at a fairly detailed level. It helps in providing insight to where your money is being allocated and how to most effectively manage it. It helps in achieving the target and to gain maximum profit [6].

For bulk production, all the ingredients were bought from a wholesale shop. Budgeting was done for 30 boxes, each containing 80g of masoya pizza crisps.

Expenditures	Price
Raw ingredients	Rs. 450
Baking charges	Rs.200
Labour charges	Rs.50
Electricity	Rs.25
Packaging	Rs.70
Labelling	Rs.40
TOTAL	Rs.835

Table 2

Total 30 boxes were made of Rs.30 each, out of which 25 were sold and per box profit was Rs.2. 5 boxes were kept for sensory evaluation.

Nutritional label

Nutritional label is intended to inform the consumer about the nutritional properties of a food. It helps the consumer in making a wise choice while selecting the food to be purchased. It helps in conveying the nutrient content of the product and is also used as a marketing tool, to attract the consumer [6].

This product was made using soya flour, refined flour, sesame seeds, chilli flakes, pizza seasoning, green chillies, turmeric powder, garlic, salt and oil. The main reason to choose this product was to provide good amount of proteins and calories, with a good palatability.
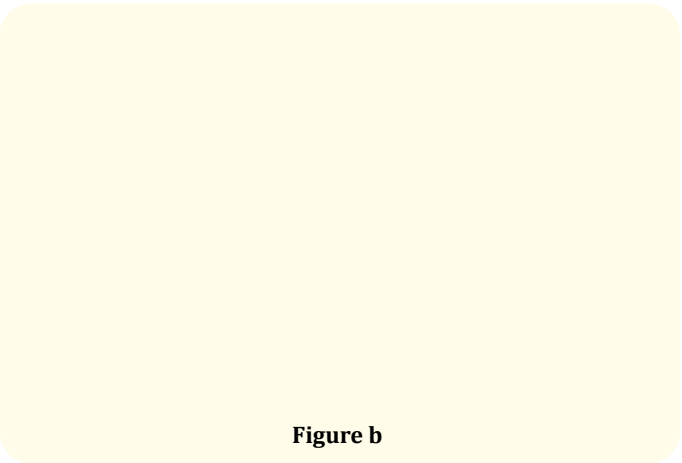

Figure b

Sensory evaluation during storage period

After the bulk production, sensory evaluation was done for continuous 4 weeks, to know the shelf life of the product, with the help of scoring test.

Sensory evaluation was done with the help of naive panellists. Attributes were similar to that of Fig.3, i.e. appearance, taste, aroma, mouth feel, colour, texture and scored out of 5, where 0= very poor, 1= poor, 2= average, 3= good, 4=very good, 5= excellent.

From Figure 4 it can be observed that the appearance and texture remained constant throughout 4 weeks; the taste, aroma and mouth feel declined slightly after 2 weeks; whereas the colour declined slightly during the 4th week.
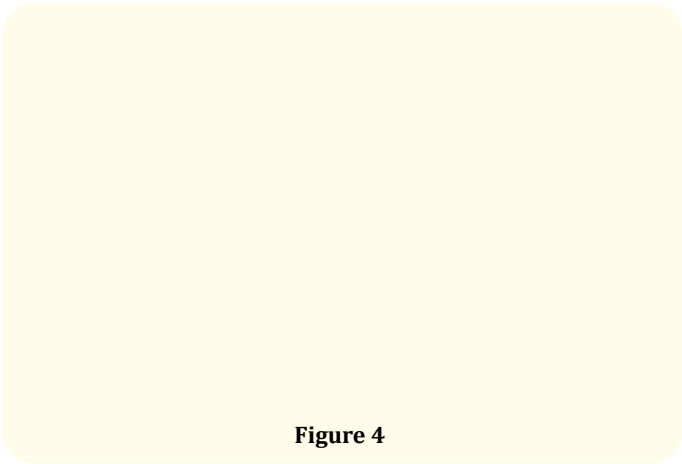

Figure 4

Conclusion

Thus, it can be concluded Masoya pizza crisps can keep well for a month and can prove to be a good nutritious product with good marketability.

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