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Studies on cost of production for value added prepared mixed flour biscuit

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Abstract

A study was undertaken with the objective of estimating the cost of production of biscuit was prepared with different levels of wheat flour and maize flour and sesame seed. A total of 20 combinations of wheat flour and maize flour and sesame seed were prepared in five replication including one as a control and remaining four and maize flour and sesame seed were prepared in five replication including one as a control and remaining flour as experimental. The entire standard ingredients were purchased from local market. The result of the study revealed that the production of cost of controlled biscuit was lower Rs.(201.97/kg) compared to mixed cereal biscuit Rs.(257.24/kg), which may be attributed to higher nutrient control of mixed cereal based biscuit.

Keywords: biscuit, mixed cereal based, cost of production

1. Introduction

Biscuit is a term used for a diverse variety of baked, commonly flour-based food products. The word Biscuit is derived from Latin word biscoctum means twice baked. Biscuit has different meanings like in Commonwealth English and Hiberno-English biscuit is a small baked product that would be called either a "cookie" or a "cracker" in the United States and most of Canada. Biscuits in the United Kingdom and Ireland are hard and may be savoury or sweet, such as chocolate biscuits, digestives, ginger nuts and bourbons.

Biscuit are defined as a small thin crisp cake made from leavened dough. Biscuits are an important baked product in human diet and are usually eaten with the tea and are also use as weaning food for infants. The school children who are often underweight, (ACC/SCN, 1987) use them as snack. The ingredients are simple; they content soft wheat flour, shortening, sugar, fat, egg etc. These ingredients are considered to be low in nutritive and biological values since soft wheat flour used for the production of biscuits is deficient in several nutrients including some vitamins, mineral elements as well as dietary fibre (Awan *et al.* 1991) ^[1] and contains only 7 to 10% protein (Yamazaki and Greenwood, 181) ^[5].

The unique bread making properties of wheat flour are due to its gluten protein that, when hydrates, forms strong, cohesive douse that retains gas and produces a light, aerated baked product (Hoseney, 1998) ^[3]. Whole-grain whole wheat flour is a full-flavored flour containing vitamins, minerals and protein. Whole-grain whole wheat flour is more nutritious than refined white flour. Since whole wheat flour contains the wheat's bran and germ it is rich in especially fiber and protein. Also good source of calcium, iron and other minerals like selenium. Maize is one of the world most versatile seed crop. Maize is processed into various foods and feed ingredient, industrial product and alcoholic beverages. Corn is mainly used for the breakfast foods. There are more than 3500 different uses for maize products, depending upon the maize variety, mainly for chewing gum, bakeries, baking powder, brewing industries, confectionary, jellies, ice cream and canned food. Corn starch is used convenient food thickener.

Sesame seeds are those tiny tasty toppings that one may encounter on bagels, breadsticks, and hamburger buns, as well as on sushi rolls and sesame chicken and are called the "queen of oil seeds". Sesame seed are the seeds of the tropical annual sesamum indicum. The species has a long history of cultivation, mostly for its yield of oil. The original area of domestication of sesame is obscure but it seems likely to have first have been brought into cultivation in Asia or India.

2. Material and Methods

The experimental work was carried out in the research laboratory of department of Dairy, Technology, Warner college of Dairy Technology, Sam Higginbottom University of Agriculture, Technology and Sciences, Allahabad. Wheat flour, maize flour and sesame seed were obtained from the local market of Allahabad city. Mixed cereal flour based biscuit prepared by Wheat flour, maize flour and sesame seed and butter, skim milk powder and sugar. There were total four combinations. Each was prepared in five replications. The different treatment combinations used in the experimental are as follows.

T₀ = wheat flour 80% + maize flour 20%

T₁ = wheat flour 70% + maize flour 20% + 10% sesame seed

T₂ = wheat flour 65% + maize flour 20% + 15% sesame seed

T₃ = wheat flour 60% + maize flour 20% + 20% sesame seed

For the preparation of mixed cereal based biscuit, added wheat flour, maize flour and sesame seed and sesame seed

and addition of butter 20 % and addition of sugar 40 % and addition of baking powder 2% then mixed properly and addition of skim milk powder 3% and addition of 20 ml. water in flour mix then kneading and preparation of dough and on wooden board with rolling pin cutting then preheating oven (160^oc for 20 min) before baking cooling at room temperature (27-30^oc) then packed and until used.

The cost of prepared was calculated at the prevailing prices of raw material purchased from the local market of Allahabad the data was analyzed statistically by using mean score.

3. Result and Discussion

The costs of the ingredients are very important factor besides other factors in determining the cost of production. It is considered as basis for price fixation and determines the profit. The price of the product is depending on the cost of the production. The cost of experimental biscuit was calculated, which is shown in the table below.

Table 1: Cost of production for mixed cereal based biscuit prepared by wheat flour, maize flour & sesame seed

| Treatment | Wheat flour | Maize flour | Sesame seed | Butter | Baking powder | S M P | Sugar | Over head | Yield | Price/Kg |
|----------------|---------------|---------------|----------------|--------------|---------------|------------|-------------|-----------|-------|----------|
| T ₀ | 800gm/25.5rs | 200gm/13.86rs | ----- | 200gm/114.66 | 20gm/6.66 | 30gm/14.40 | 300gm/16.80 | 10 | 750 | 201.97 |
| T ₁ | 700gm/22.1rs | 200gm/13.68rs | 40.2gm/16.08rs | 200gm/113.15 | 20gm/6.57 | 30gm/14.20 | 300gm/16.57 | 10 | 760 | 227.84 |
| T ₂ | 650gm/20.36rs | 200gm/13.57rs | 40.4gm/16.14rs | 200gm/112.26 | 20gm/6.52 | 30gm/14.09 | 300gm/16.44 | 10 | 766 | 240.23 |
| T ₃ | 600gm/18.6rs | 200gm/13.43rs | 40.6gm/16.02rs | 200gm/111.10 | 20gm/6.45 | 30gm/13.95 | 300gm/16.27 | 10 | 774 | 257.24 |

Production cost of control biscuit was found Rs.201.97, whereas the experimental biscuit was started at Rs.227.84. The production cost ranged depending upon the price of the ingredients in experimental biscuit. It can also be observed that the highest mean cost (Rs.) was recorded in biscuit prepared by wheat flour and maize flour & sesame seed in sample of T₃Rs (257.24) followed by T₂Rs (240.23), T₁ Rs (227.84), T₀ Rs (201.97).

4. Conclusion

It can be concluded from the above study that mixed cereal based biscuit It can help to prevent diabetes, lowers blood pressure, prevent a wide variety of cancers, build strong bones, increase heart health etc. Also maize flour used has lots of health benefits but main being the regular consumption assists in the management of non-insulin dependent diabetes mellitus (NIDDM) and protects against hypertension due to the presence of phenolic phytochemicals in whole corn. Whole wheat flour used have bran which is the hard outer layer of the whole wheat grain that contains dietary fiber, antioxidants, B vitamins, and phytochemicals. Thus, the objective of this study is to incorporate maize flour and sesame seed into a wheat flour to develop fortified biscuit.

5. References

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