

A study on the consumer acceptance of soy blended bakery products

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ABSTRACT

The study was taken up to create awareness on the various health benefits of using soy products in diet. Bakery items such as biscuits (sweet, salt and sugar free), bread and cakes were prepared by incorporating defatted soy flour at the prescribed proportion. Consumer evaluation of the items was carried out for soy blended bakery products. The results revealed that more than eighty per cent of the rural and urban mass rated the soy incorporated sweet biscuits and cakes to be very good whereas soy incorporated bread was rated very good by about fifty per cent of both the communities. The data indicate that the bakery products prepared by incorporating defatted soy flour were acceptable by both rural and urban people.

Key words: Defatted soy flour, Soy blended bakery products, Consumer acceptance

INTRODUCTION

Soybean is an excellent health food at the most economical price. It contains about 40 per cent good quality protein, 23 per cent carbohydrates, 20 per cent cholesterol free oil and reasonable amounts of minerals and vitamins. Soybean is generally processed for its oil, protein and lecithin. Normally whole beans are used for making full fat soyflour, dairy analogs (soymilk, soypaneer, soy-yogurt, soy-ice cream) fermented food (Tempeh, Natto, Sauce) and snack foods (roasted/sprouted beans). Soy flour can also be made from partially/fully defatted beans (cake/meal) and used in making baked products (chapattis, bread, biscuit, bun, rusk and cake), Texturised Soy-Proteins (TSP), protein isolates and concentrates (Ali, 1993).

The effect of incorporation of soybean flour and its products have been investigated and studies have shown that 5-25 per cent soy flour can be used in bread, cakes and cookies, snack foods and infant foods without any loss of physical characteristics but substantial improvement in the nutritional value of the products. Soybean proteins are often added to food at low levels to utilize their functional properties. At these levels, their contribution to nutrition is minor. At higher levels (5-25 per cent), these proteins are an important source of protein; they also contribute the desired functional effect.

Acceptance of soy foods in India has been rather slow. One of the reasons is lack of awareness among the people about the high nutritional value of soybean and its products. A major but as yet not fully tapped outlet for soy products is the bakery industry. The bakery products are considered easy, convenient and rather inexpensive means of taking food in hygienically prepared ready to eat form. Hence the present study was carried out to

create awareness on the benefits of using soy products in the diet of the people by introducing the various soy incorporated bakery products and to evaluate their acceptance by large scale consumer evaluation in and around Coimbatore district.

MATERIALS AND METHODS

2.1 Raw materials:

Soy based bakery products were prepared by incorporating defatted soy flour in bakery products like biscuits, bread and cakes according to the standards developed at Soybean Processing Unit, CIAE, Bhopal, India. The desirability of the products was found out by consumer evaluation of the products among the urban and rural mass in and around Coimbatore district.

(i) Soy blended biscuits:

Soy blended biscuits were prepared by incorporating 25 per cent of defatted soy flour. The process of soy based biscuit consists of creaming of sugar and shortening along with baking powder and baking soda, mixing of other ingredients, sheeting, molding and baking at 200EC for 15 min. (Fig.1) Variants of biscuits like sugar, salt and sugar free biscuits were also prepared.

(ii) Soy blended bread:

Soy blended bread was prepared by incorporating 10 per cent of defatted soy flour in the dough mix. The mixed dough was divided, molded and placed directly in a greased pan to ferment and baked at 220EC for 20 min.

(iii) Soy blended cakes:

Soy blended cake was prepared by creaming the

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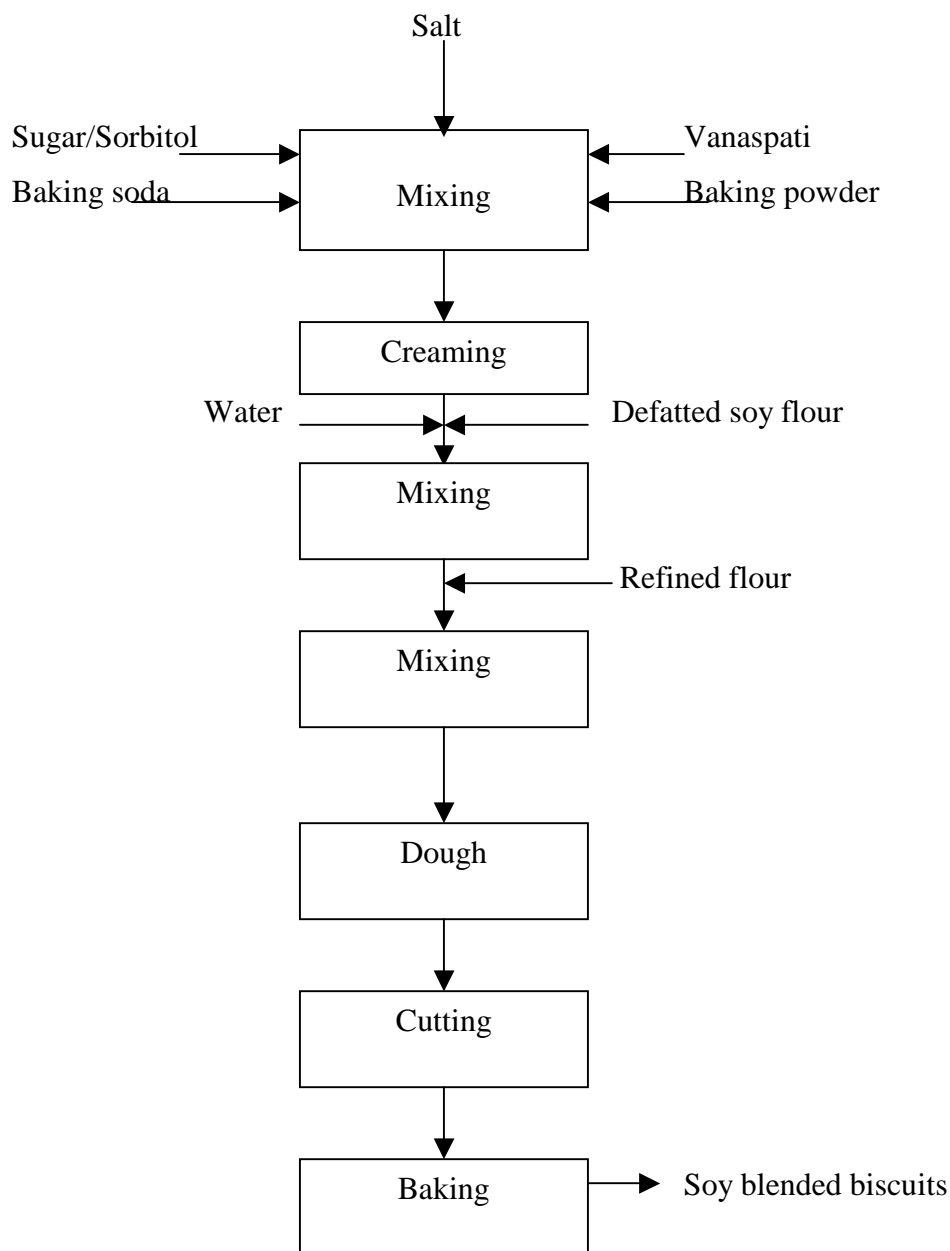


Fig. 1 : Process flow chart for the production of soy blended biscuits

shortening and the sugar together followed by gradual addition and mixing of eggs and finally the rest of ingredients. The batter is poured into greased pan and baked at 190EC for 30 min. Twenty five per cent of defatted soy flour was used for preparing the cakes.

2.2 Consumer Evaluation:

Large scale consumer trials were carried out to assess the reaction of the consumers to soy based bakery products. Sample lot consisted of rural and urban communities who visited the Annual Agricultural Exhibitions held at Coimbatore. The various soy blended bakery products were served to the consumers and they were requested to express their opinion of the products by rating them from high desirability to low desirability using a scorecard.

RESULTS AND DISCUSSION

The consumer rating of soy-blended biscuits is presented in Table 1. The acceptability for each type of soy-blended biscuits by the consumers was found to be different. More than eighty per cent of both urban and rural group showed high desirability

Table 1 : Consumer acceptance scores on soy blended biscuits.

Characteristics of the Products	Urban n = 30			Rural n = 45		
	Sugar	Salt	Sugar Free	Sugar	Salt	Sugar Free
Very Good	25 (83.3)	15 (50.0)	16 (53.3)	37 (82.2)	22 (48.8)	23 (51.1)
Good	4 (13.3)	12 (40.0)	9 (30.0)	7 (15.5)	14 (31.1)	17 (37.7)
Fair	1 (3.3)	-	3.3 (10.0)	1 (2.2)	8 (17.7)	3 (6.6)
Poor	-	3 (10.0)	2 (6.6)	-	1 (2.2)	2 (4.4)

Figures in parenthesis represent percentage.

Table 2 : Consumer acceptance scores on soy blended cake and bread.

Characteristics of the Products	Urban n = 30		Rural n = 45	
	Cake	Bread	Cake	Bread
Very Good	27 (77.1)	14 (40.0)	36 (85.7)	16 (38.0)
Good	7 (20.0)	10 (28.6)	3 (7.1)	10 (23.8)
Fair	1 (2.8)	-	3 (7.1)	12 (28.6)
Poor	-	3 (8.5)	-	4 (9.5)

Figures in parenthesis represent percentage.

for soy blended sweet biscuits by rating it to be very good. None of the group rated the biscuit to be poor in their desirability. In the case of salt biscuits prepared from defatted soy flour, about 50 per cent of both the groups rated it to be very good and ten per cent of the urban mass disliked the product. Sugar free soy blended biscuits were rated to be very good by more than 50 per cent of the mass belonging to both the communities. Only 6.6 and 4.4 per cent of urban and rural group disliked sugar free soy blended biscuits. Similarly soy incorporated cake and bread was also evaluated and the results of which are presented in Table 2. Soy incorporated cake was found to be highly desirable by 85 per cent of rural mass according to the consumer rating. Seventy seven per cent of urban mass showed high preference for the cakes. However none of the consumers belonging to both the groups rated the product to be poor which indicates that the product is acceptable by both the communities. In the case of soy blended bread, the consumer rating of the both the groups were found to be quite similar. Only 40 per cent of urban group and 38 per cent of rural group expressed that the bread was very good according to the rating. 22 and 29 per cent of urban and rural mass rated

it to be moderate. Around 10 per cent of both the groups rated the bread to be inferior. This may be due to the poor texture and beany flavour of the bread.

The results of the study revealed that soy incorporated bakery products could be introduced into the market. The consumer rating of soy blended biscuits and cakes showed higher acceptance by the people belonging to both urban and rural area. The consumers also expressed their intention of buying the products if available commercially.

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