

## Development of biscuit from sorghum and soybean

MANISHA KHEDKAR, R.C. VERMA, P.H. BAKANE AND R.P. MURMAKAR

See end of the article for  
authors' affiliations  
.....

Correspondence to:

**P.H. BAKANE**

Post Harvest Technology  
Scheme, Dr. Panjabrao  
Deshmukh Krishi  
Vidhyapeeth, AKOLA  
(M.S.) INDIA

Accepted : May, 2008  
.....

### ABSTRACT

Biscuits were evaluated for physical properties and sensory evaluation. The thickness increased by 44.96% after baking while the increase in diameter was only 2.08%. The decrease in spread ratio was 42.02%. The colour, texture and appearance were found to be best for composition 60% maida+10% sorghum flour+20% soybean flour and the flavour, taste and overall acceptability were best for composition 60% maida+30% sorghum flour+10% soybean flour. The composition (60% maida+10% sorghum flour+30% soybean flour) was best for nutritional evaluation of biscuits.

**Key words :** Biscuit, Soy flour, Sorghum flour, Sensory evaluation.

**B**iscuits are very convenient and inexpensive food products and are becoming very popular among both rural and urban population specially among children of India. If these biscuits are enriched with protein from soybean or locally produced millets can help the tribals or poors in maintaining their health. These baked products have about 6-7% proteins. There is an ever growing demand for high protein biscuits for therapeutic value. Sorghum soybean biscuits can be used effectively in child feeding programmes and as a supplement to the diets of the elderly and low income groups of the population.

Nutritionally, biscuits can be easily fortified with protein-rich flours to provide a convenient food to supplement the poor quality diets.

Protein fortified biscuits contain nutrients in concentrated forms for feeding programmes at such institutes as day-care centres and schools or as emergency rations (Singh *et al.* 2000). Present investigation were undertaken with the objectives to develop biscuit from sorghum and soybean and to evaluate quality of developed biscuit.

### METHODOLOGY

#### *Method of preparation of biscuits:*

Biscuits were prepared by using soybean, refined flour (maida) and sorghum flour. Soybean flour was prepared after blanching the soybean for 25 minutes in boiling water and then dried in a tray dryer. The dried soybean was then used in making soy flour. Maida and sorghum were procured from market. Sorghum flour was made by grinding the cleaned whole sorghum grain.

Maida, sorghum flour and soybean flour were mixed in various combinations A1, A2 and A3 as shown in Table 1 and biscuits were prepared. Each combination was replicated thrice.

**Table 1 : Various combinations used in biscuits**

| Ingredients   | Quantities, g |     |     |
|---------------|---------------|-----|-----|
|               | A1            | A2  | A3  |
| Maida         | 300           | 300 | 300 |
| Sorghum       | 100           | 50  | 150 |
| Soybean       | 100           | 150 | 50  |
| Ghee          | 200           | 200 | 200 |
| Sugar         | 150           | 150 | 150 |
| Baking powder | 2.5           | 2.5 | 2.5 |
| Baking soda   | 2.5           | 2.5 | 2.5 |
| Salt          | 5             | 5   | 5   |

A1 - 60% Maida + 20% Sorghum flour + 20% Soybean flour

A2 - 60% Maida + 10% Sorghum flour + 30% Soybean flour

A3 -60% Maida + 30% Sorghum flour + 10% Soybean flour

Measured quantities of soy flour, sorghum flour and maida were mixed together and baking soda, baking powder and salt were added to the mix. Cream was prepared by adding the ground sugar to the vegetable ghee and whipping it thoroughly for about ten minutes in a pan with the help of spoon. The mix of flour was then added to the prepared cream and dough was made by hand.

The prepared dough was flattened with the help of traditional wooden roller "belan", used in making chapattis,