

Sensory evaluation of bajra products

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Abstract

Bajra is comparable and even superior in some of the nutritional characteristics to major cereals, with respect to its energy value, protein, fat and minerals content. Bajra is mostly used as whole flour for traditional food preparation and hence confined to traditional consumers and to people of lower economic strata. These products were prepared by incorporation to ground nut and wheat flour to bajra flour. These products were analyzed for its organoleptic acceptability by semi trained panel members using nine point hedonic scale. This revealed that 20% incorporated laddus, and 40% incorporated biscuits had better quality in terms of taste and flavor, body and texture, colour and appearance and overall acceptability than other incorporated products.

Keywords: Bajra, ground nut flour, wheat flour, organoleptic acceptability and health products.

Introduction

The Bajra grain is nutritious. It has no husk, no tannin, contains five-seven percent oil, and has higher protein and energy levels than maize or sorghum. The unsaturated fatty acids making up the oil are oleic (20-31%), linoleic (40-52%), and linolenic (two-five percent). The saturated fatty acids are palmitic (18-25%) and stearic (28%). Bajra has a higher protein content than other cereals grown under similar conditions. It is a gluten free grain. So it is one of the grain which can be easily included in the diet of a person who are suffering from gluten induced enteropathy or has allergy towards gluten. It is noted for high iron content also.

Research Methodology

Preparation of laddu: Laddu in which ground nut flour was replaced by bajra flour at 20, 40, 60, 80% respectively, were prepared.

Method:

- Bajra flour (level of incorporation 20%, 40%, 60% and 80%) and ground nut flour was taken.
- Flour roasted on low medium flame in melted ghee until brown color and pleasant aroma appear.
- Sugar and dry fruits were mixed in it.
- Then small sizes of balls were made.

Preparation of biscuit: Biscuit in which wheat flour was replaced by bajra flour at 20, 40, 60, and 80% respectively, were prepared.

Method:

- Bajra flour (level of incorporation 20%, 40%, 60% and 80%) and wheat flour was taken.

- Baking powder (one pinch) was added in flour.
- Then hydrogenated fat was beaten like cream.
- Sugar, coconut powder and flour were added in hydrogenated fat.
- All ingredients were kneaded into soft dough using required water then made equal sizes pieces and cut by biscuit cutter.
- Then equal sizes of pieces were baked at 120°C for 10min in oven.

Organoleptic Acceptability of prepared products

The evaluation of sensory attributes viz. colour and appearance, flavour, taste, texture and overall acceptability of prepared products was carried out according to the method of Amerine *et al.* (1965) on a nine point Hedonic scale. A semi trained panel of 10 members was asked to evaluate the given samples for various sensory attributes. The sensory score for each attribute was recorded and statistically analyzed. Statistical analysis

The data obtained in present investigation were tabulated statistically by using CRD (Completely Randomized Design).

Results and Discussion

1) Mean score of Organoleptic Acceptability of bajraladdu (incorporated with ground nut flour) Taste and Flavour:

Table 1 shows that mean score of 20%, 40%, 60% and 80% incorporated laddus were 8.1, 8.3, 7.1 and 6.0 respectively. The table shows that incorporated samples were significant at the level of 5% in critical difference. The mean score of 40% incorporated laddus was better than other percentage of

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Table 1: Mean score of Organoleptic Acceptability of laddus

Parameters	Level of incorporation				Mean
	20%	40%	60%	80%	
Taste and flavour	8.1	8.3	7.1	6.0	7.37
Body and texture	8.4	8.18	7.16	5.84	7.39
Color and appearance	8.0	7.9	7.2	6.0	7.27
Overall acceptability	8.17	8.13	7.14	5.92	7.33
	T&F	B&T	C&A	OA	
SE(d)	0.3181	0.3736	0.1907	0.2116	
C.D.	0.6738	0.7921	0.4051	0.4493	

incorporated products.

Body and texture:

Table 1 shows that mean score of 20%, 40%, 60% and 80% incorporated sample were 8.4, 8.1, 7.1 and 5.8 respectively. The result shows that incorporated products were significant it means the body and texture were differed from each other. The mean score of 80% incorporated sample was lower than other incorporated products.

Colour and appearance:

Table 1 shows the color and appearance by sensory evaluation of incorporated sample. Mean score of 20%, 40%, 60% and 80% incorporated laddus were 8.0, 7.9, 7.2 and 6.0 respectively. The results shows that the mean value of color and appearance at different level of incorporation (20% and 40%) were better than other samples.

Overall acceptability:

Table 1 shows that the mean score of overall acceptability obtained by organoleptic evaluation in incorporated ground nut flour sample. The mean value of 20%, 40%, 60% and 80% incorporated laddus were 8.17, 8.13, 7.14 and 5.92 respectively. The result shows that the mean values of overall acceptability at different level of incorporation (20% and 40%) were better than other sample.

1) Mean score of Organoleptic Acceptability of bajra biscuit (incorporated with wheat flour)

Taste and Flavour:

Table 2 shows that mean score of 20%, 40%, 60% and 80% incorporated biscuits were 7.6, 7.64, 7.08 and 6.0 respectively. The table shows that incorporated sample were significant at the level of 5% in critical difference. It mean taste and flavour of biscuits were differed from each other but the mean value of 80% incorporated sample was lower than other which shows that its taste and flavour was inferior to other incorporated products.

Body and texture:

Table 2 shows that mean score of 20%, 40%, 60% and 80% incorporated sample were 7.86, 7.84, 7.42

and 6.4 respectively.

The results shows that incorporated products were significant at the level of 5% in critical difference it means the body and texture were differed from each other. The mean score of incorporated products (20% and 40%) were better than other incorporated products.

Color and appearance:

Table 2 shows that mean score of 20%, 40%, 60% and 80% incorporated biscuits were 7.42, 7.08, 6.82 and 6.2 respectively. The results shows that incorporated products were non significant it means the body and texture were not differed from each other. The mean score of 20% incorporated sample was better than other incorporated products.

Table 2: Mean score of Organoleptic Acceptability of biscuit

Parameters	Level of incorporation				Mean
	20%	40%	60%	80%	
Taste and flavor	7.6	7.64	7.08	6.0	7.08
Body and texture	7.86	7.84	7.42	6.4	7.38
Color and appearance	7.42	7.08	6.82	6.2	6.88
Overall acceptability	7.6	7.46	7.08	6.22	7.08
	T&F	B&T	C&A	OA	
SE(d)	0.3446	0.3446	0.5011	0.2271	
C.D.	0.7314	0.7445	N.S.	0.4821	

Overall acceptability:

It is evident from the table 2 that mean score of 20%, 40%, 60% and 80% incorporated biscuits were 7.6, 7.46, 7.08, 6.22 respectively. The table shows that incorporated samples were significant at the level of 5% in critical difference it means the overall acceptability was differed from each other. It means that overall acceptability of 20% and 40% incorporated product was better than other incorporated products.

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