

Organoleptic Evaluation of Five Cereal Based Cookies and Commercial Cookies

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ABSTRACT: In the present study, five cereals were selected. These cereals are easily available and cost effective too. In cereals, Kambu (Bajra)-S1, Maize-S2, Ragi-S3, Rice flakes-S4, and wheat flour-S5 and commercial cookies -S6 were selected. The selected cereal products promote good texture, taste and flavour and high nutrient composition. Cereal based cookies were compared with commercial cookies based on scores obtained from their organoleptic evaluation.

KEYWORDS: S1-Kambu cookie, S2-Maize cookie, S3-Ragi cookie, S4-Riceflakes cookie and S5- wheat flour cookie, Organoleptic evaluation, scorecard,

I. INTRODUCTION

The cookie is old, the name is new. Food historians place the first recipe named "Mexican wedding cakes" in 1950s. (Sharon Tyler Herbst, 2001).

"Cookies continue to outnumber all other recipe requests in our reader mail. Most in demand of late is a rich, semi-sweet butter cookie that is made in many countries and has many names and variations. (Los Angeles Times, 2005).

If they are kept in an airtight container, processed cookies will keep in the pantry for an extended period of time--up to a few months. However, processed cookie dough, because it contains raw egg and other perishables, must remain refrigerated until it is used. Do not cook cookie dough to room temperature prior to using it. Harmful bacteria can grow quickly at room temperature. (John Gregerson, Jul 14, 2009).

Dry texture, cookies can last longer than many other foods without spoiling. Still, store-bought cookies contain preservatives which prevent them from going stale while sitting on the shelf. Many bakery-fresh cookies also contain preservatives which give them a longer shelf life. Instead of chemicals, however, many bakeries utilize natural preservatives. Both options are effective when it comes to keeping cookies fresh and tasty, although holistic options may be a more viable choice for the home kitchen (Neil Richter, Food Preservatives in Cookies, 2005).

Cereal is an especially important source of nutrients for children who do not have enough food to eat. (Tuttle, C, 2010)

II. MATERIALS AND METHODS

a). Selection of cereal based cookies.

In the present study, five different cereal based high energy cookies were selected. These products were easily prepared at home and cost effective too. In cereal, Bajra (kambu), maize, ragi, rice flakes, and wheat were selected because it is high in energy, carbohydrate, protein, calcium, iron and it promotes good texture, taste and flavor. Preservatives were not added to these homemade cookies.

b). Method of preparation and ingredients of cookies.

Firstly, all the ingredients (maida, white butter, sugar powder, baking powder) were weighed in proper percentage. These ingredients were mixed uniformly to prepare paste like consistency. Further five types of cereal based products of cookies were developed that is kambu flour, Maize flour, Ragi flour, Rice flakes flour and wheat flour. In S-1, 100 g of kambu flour was added while S-2, 100 grams of maize flour was added in S-3, 100 grams of ragi flour was added, in S-4, 100 grams of rice flakes was added and S-5, 100 grams of wheat flour was added. All the ingredients were uniformly mixed separately and provided with a desired consistency to prepare dough. Now, the dough

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was cut into desired shapes using cookies cutter. Arrange on a greased tray. Bake at 100° c with for about 15-20 minutes.

Five cereal based cookies



c).Organoleptic evaluation

A scorecard is one which reflect the characteristic features of the food product such as appearance,colour,taste and flavour(Geeravani,2004).

Selection of panel

Physical conditions of the individual, psychological factors and environment factors may affect one's judgement.Further one individual may not be able to discriminate different aspects of the food quality. For these reasons, for sensory evaluation, panel of judges is used. Members of the panel should be carefully selected and trained to find out difference in specific quality characteristics between different stimuli and also direction and/or intensity of difference. The panelist should be of sound health and average sensitivity and conscientious individual. (Joshi et al., 2000)

Formulation of score card

Since the scorecard was identified as the best tool for conducting organoleptic evaluation, a five point Hedonic Rating scale were formulated, presented and used for the conduction of organoleptic evaluation. Hence the acceptability of standard samples such as commercial cookies-S-6 and experimental samples S-1 is Bajra (Kambu),S-2 is Maize(cornflour),S-3 is Ragi cookie,S-4 is Riceflakes,and S-5 is Wheat cookie were tested through organoleptic evaluation. The trained panelist of about fifteen (15) women lecturers and Ten (10) graduate students in Chennai were selected as taste panelist for organoleptic evaluation.The organoleptic evaluation was conducted for the commercial cookies(S6) and five cereal based cookies using five point hedonic rating scale among 25 panelist.Hence the food items were displayed in a neat,colourful jumbled manner. The overall acceptability scores obtained through the organoleptic evaluation were analyzed statistically.

III. SUMMARY AND CONCLUSION

Acceptability of the commercial(standard) and cereal based cookies was analysed and discussed below.

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Friedman test for significance difference between Mean rank towards appearance of cookies

Appearance of cookies	Mean Rank	Chi-Square	P Value
S. Cookies – S6	2.30	67.5	<0.001**
Kambu – S1	3.92		
Maize - S2	3.38		
Ragi – S3	5.80		
Rice flakes – S4	2.80		
Wheat flour – S5	2.80		

Note: ** denotes significant level at 1% level

Since P value is less than 0.01, the null hypothesis is rejected at 1% level of significance. Hence concluded that there is significant difference between mean ranks towards appearance for five cereal based cookies and standard cookies. Based on mean ranks ragi cookies (5.80) is the best appearance noted from organoleptic evaluation is followed by kambu cookies (3.92), maize cookies (3.38) rice flakes cookies and wheat flour cookies (2.80) was the same mean rank and standard cookies (2.30)

Friedman test for significance difference between Mean rank towards over all acceptability of cookies

Over all acceptability of cookies	Mean Rank	Chi-Square	P value
S. Cookies – S6	2.14	74.466	<0.001**
Kambu – S1	3.90		
Maize – S2	3.14		
Ragi – S3	5.84		
Rice flakes – S4	2.58		
Wheat flour – S5	3.40		

Note: ** denotes significant at 1% level

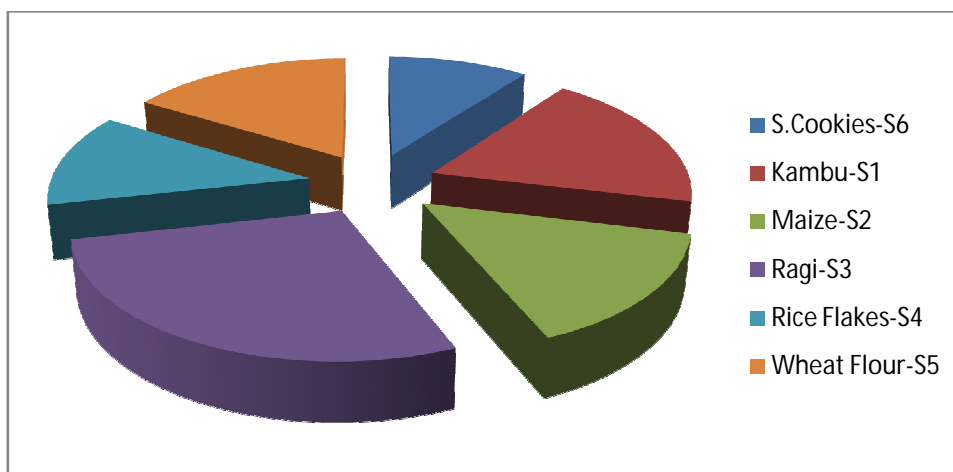
Since P value is less than 0.011, the null hypothesis is rejected at 1% level of significance. Hence concluded that there is significant difference between mean ranks towards. Over all acceptability of five cereals based cookies and standard cookie. Based on mean ranks ragi (5.84) is the best in overall acceptability noted from organoleptic evaluation, is followed by kambu cookie (3.90), wheat flour cookie (3.40), maize cookie (3.14), rice flakes cookie (2.58) and standard cookie (2.14).

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Friedman test for significance difference between Mean rank towards over all acceptability of cookies



Comparison between overall acceptability of cereal based cookies and overall acceptability of standard cookies.

S.No	Acceptability of cookies and standard cookie	Mean \pm S.D	t Value	P value
1.	S. Cookies with Kambu	0.60 \pm .707	4.243	<0.001**
2.	S. Cookies with Maize	0.28 \pm .843	1.661	0.110
3.	S. Cookies with Ragi	1.68 \pm .690	12.167	<0.001**
4.	S. Cookies with Rice flakes	0.20 \pm .913	1.095	0.284
5.	S. Cookies with Wheat flour	0.40 \pm .707	2.828	0.009

There is a significant difference between overall acceptability of cereal based cookies with standard cookies. Hence there is 1% level of significant between ragi and kambu cookies with standard cookies and there is no significant difference between rice flakes, maize and wheat flour cookies with standard cookies. Based on mean score ragi, and kambu cookies are better than standard cookies.

We can suggest ,awareness about the nutritional and health benefits of cereal products should be created in the community.

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IV. SUMMARY AND CONCLUSION

Based on organoleptic evaluation ragi cookie is considered as best among other cookies. The ragi cookie was getting high score 5.80 with its appearance. In overall acceptability, the high mean rank 5.84 was obtained by ragi cookie. Comparison of ragi cookie with commercial cookies, ragi cookie was considered as the best sample in overall acceptability.

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