

International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: www.ijirset.com

Vol. 8, Issue 1, January 2019

Acceptability Testing of Ready to Eat Food and Homemade Food Products

Bansari Rao¹, Anuradha Shekhar²

Msc. Student Dept. Msc.CND, Dr. BMN College of Home Science, Mumbai, India

Associate Professor, HOD of Dept. Food Science and Nutrition, Dr. BMN College of Home Science, Mumbai, India

ABSTRACT: INTRODUCTION: The Indian food industry is poised for huge growth, increasing its contribution to world food trade every year, particularly within the food processing industry(1). Ready-to-Eat food is considered one of the largest segments in the overall food industry, and is anticipated to grow robustly due to increasing acceptance by global consumers.

OBJECTIVE: Hence there is a significant increase in consumption of these ready to eat foods which lead to the need of a comparative study between the homemade and ready to eat food to assess the acceptability testing among the people.

METHOD: The study was conducted using ten different ready to eat dehydrated food sample/frozen food sample were taken from the local supermarket and in compare to that the same food products were prepared by homemade preparations and the evaluation was done using 9- point hedonic scale (1 – extremely dislike to 9 – extremely like). To test the variance of the sensory evaluation using 9 – point hedonic scale was done with the help of ANOVA (randomized block design).

CONCLUSION: On evaluating the responses, it indicated maximum like towards the homemade food in comparison of ready to eat food. Statistical analysis using ANOVA showed the F calculated value (8.62654) exhibit to be higher than that of the F critical value (4.413873) and the P – value (0.008809) to be less than 0.05 it proves to be highly significant.

KWYWORDS: Ready to eat foods, sensory evaluation, hedonic rating test, acceptability, ANOVA, frozen foods, dehydrated foods.

I. RELATED WORK

This study shows that there is a greater demand for ready-to-eat food segments and the major attraction for these products are convenience, availability and less time consumption to cook. Due to life style changes and long working hours' people are choosing these products and ready to go with it. The availability of raw material to prepare certain spices is one of the less factors in deciding these products. Availability at door step and convenience buying are the major sources of influence in buying these products. (2)Major reasons of purchase are it saves time, preferred while travelling aboard and also when guest at home and the Major reasons of non-purchase are Preference towards homemade food and lacks of nutrients (3)Reasons for choosing ready-meals particularly focus on the perceived convenience and value forMoney (4) and better taste (5) compared to home food cooking majority of the respondents have planned decision in purchasing instant food products(6)

II. INTRODUCTION

The rise in processed food has prompted the manufactures to develop new innovative food products to keep up with the speed demand growth. According to a recently published report by TechSci Research "India Ready-to-eat Food Market Forecast and Opportunities, 2019", the country's ready-to-eat (RTE) food market is projected to grow at a CAGR of around 22% during 2014-19. The market is anticipated to grow on account of increasing working population, growing

International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: www.ijirset.com

Vol. 8, Issue 1, January 2019

per capita disposable income, rising per capita expenditure on prepared food, increasing middle class and affluent consumers, etc. (7)

Ready-to-Eat food is considered one of the largest segments in the overall food industry, and is anticipated to grow robustly due to increasing acceptance by global consumers. In terms of market share, the US is expected to dominate the ready-to-eat food market over the forecast period, followed by Asia Pacific. Furthermore, countries such as Russia, Poland and Germany among others, are expected to witness stable growth. Globally, Americans have the highest consumption rates for Ready-to-Eat Food due to time pressures (8)

Daily consumption of ready-made meals was found to be associated with higher energy intake and with poor compliance with national nutritional recommendations, and hence it could plausibly increase the risk of central obesity and fat deposition. (9) This is likely because ready-meals tend to contain high levels of fat and saturated fat. (10)

III. MATERIALS AND METHODS

Sensory evaluation is a scientific discipline that analyses and measures human responses to the composition of food and drink, e.g. appearance, touch, odour, texture, temperature and taste. The study was conducted using ten different ready to eat dehydrated food sample (upma, idli, poha, palak paneer, and paneer butter masala) and frozen food sample (alloomtikki, French fries, veg paratha, samosa, and roti) were taken from the local supermarket and in compare to that the same food products were prepared by home made preparations for analysis.

To evaluate the relative acceptability between the ready to eat food and homemade food, the sensory evaluation test was conducted by hedonic rating test and to test the variance of the sensory evaluation statistical analysis was done using ANOVA (randomized block design).

HEDONIC RATING TEST

Hedonic rating relates to pleasurable or unappeasable experiences. The hedonic rating test is used to measure the consumer acceptability of food products. From one to four samples are served to the panelist at one session. Panelist is asked to rate the acceptability of the product on a scale usually of 9 points, ranging from "like extremely" to "dislike extremely". The results are analyzed for preference with data from large untrained panels. (11)

IV. RESULTS AND DISCUSSION

1) ROTI

Table No.1.1: Scores of sensory evaluations for ready to eat and homemade roti

CATEGORY	SCORES
HOME MADE	275
READY TO EAT	285

From the above table ready to eat roti was found to have higher score according to 9-point hedonic scale, hence the ready to eat food product was found out to be more acceptable in compare to homemade roti.

2) FRENCH FRIES

Table No.1.2: Scores of sensory evaluations for ready to eat and homemade French fries

CATEGORY	SCORES
HOME MADE	310
READY TO EAT	388

International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: www.ijirset.com

Vol. 8, Issue 1, January 2019

With respect to 9-point hedonic scale the ready to eat French fries was seen to have higher score in compare to homemade, hence ready to eat French fries were more acceptable than the homemade French fries.

3) SAMOSA

Table No.1.3: Scores of sensory evaluation for ready to eat and homemade samosa

CATEGORY	SCORES
HOME MADE	380
READY TO EAT	265

As the above table depicts that the homemade food sample was found out to have higher score according to 9-point hedonic scale in compare to ready to eat samosa, hence homemade samosa was more acceptable than ready to eat samosa.

4) ALOO TIKKI

Table No.1.4: Scores of sensory evaluations for ready to eat and homemade aloo tikki

CATEGORY	SCORES
HOME MADE	354
READY TO EAT	311

Illustrating the above table, the homemade aloo tikki was found out to have a higher score with respect to 9-point hedonic scale, hence the evaluation showed to have more acceptability of homemade aloo tikki in compare to ready to eat aloo tikki.

5) VEG PARATHA

Table No.1.5: Scores of sensory evaluations for ready to eat and homemade veg paratha

CATEGORY	SCORES
HOME MADE	321
READY TO EAT	271

Using 9-point hedonic scale the homemade veg paratha showed to have 18.4% higher score in compare to ready to eat veg paratha, hence the homemade veg paratha showed to have more acceptability.

6) PALAK PANEER

Table No.1.6: Scores of sensory evaluations for ready to eat and homemade palak paneer

CATEGORY	SCORES
HOME MADE	342
READY TO EAT	294

From the above table and graph the homemade palak paneer showed to have 16.3% higher score in compare to ready to eat palak paneer, hence the homemade food product showed to have a higher acceptability in compare to ready to eat.

International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: www.ijirset.com

Vol. 8, Issue 1, January 2019

7) PANEER BUTTER MASALA

Table No.1.7: Scores of sensory evaluations for ready to eat and homemade paneer butter masala

CATEGORY	SCORES
HOME MADE	367
READY TO EAT	302

According to 9-point hedonic scale the homemade paneer butter masal showed to have 21.5% higher score in compare to ready to eat paneer butter masala, hence homemade paneer butter masala had greater acceptability than that of ready to eat.

8) POHA

Table No.1.8: Scores of sensory evaluations for ready to eat and homemade poha

CATEGORY	SCORES
HOME MADE	346
READY TO EAT	275

From the above table and graph the homemade poha showed th have a 25.81% higher score in compare to ready to eat poha using 9-point hedonic scale, hence the homemade poha was seen to be more acceptable in comparison to ready to eat poha.

9) UPMA

Table No.1.9: Scores of sensory evaluations for ready to eat and homemade upma

CATEGORY	SCORES
HOME MADE	332
READY TO EAT	263

Illustrating the above table and graph, the homemade upma showed to have 26.23% higher score with respect to 9-point hedonic scale in compare to ready to eat upma, hence the homemade upma was more acceptable in compare to ready to eat.

10) IDLI

Table No.1.10: Scores of sensory evaluations for ready to eat and homemade idli

CATEGORY	SCORES
HOME MADE	360
READY TO EAT	290

From the above table and graph with respect to 9-point hedonic scale the homemade idli showed to have 24.13% higher score than that of the ready to eat idli. Hence the homemade idli showed to have more acceptability in compare to ready to eat idli.

International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: www.ijirset.com

Vol. 8, Issue 1, January 2019

(STATISTICAL ANALYSIS – ANOVA)

To test the variance of the sensory evaluation using 9 – point hedonic scale was done with the help of ANOVA (randomized block design). The illustration of the same is given below;

ITEMS	HOMEMADE	READY TO EAT
ROTI	275	285
FRIES	310	388
SAMOSA	380	265
ALOO TIKKI	354	311
PARATHA	321	271
PLALAK PANEER	342	294
PANEER BUTTER MASALA	367	302
POHA	346	275
UPMA	332	263
IDLI	360	290

ANOVA						
Source of Variation	SS	Df	MS	F	P-value	F crit
Between Groups	9812.45	1	9812.45	8.62654	0.008809	4.413873
Within Groups	20474.5	18	1137.472			
Total	30286.95	19				

VI. CONCLUSION

Since the F calculated value (8.62654) exhibit to be higher than that of the F critical value (4.413873) and the P – value (0.008809) to be less than 0.05 it proves to be highly significant. Hence the variance of the sensory evaluation using 9 – point hedonic scale between the ready to eat food and homemade food shown to have high significance.

Sensory evaluation to check the acceptability of ready to eat food and homemade food was conducted with the help of 50 naïve panelists. The evaluation was done using 9- point hedonic scale (1 – extremely dislike to 9 – extremely like) where the panelist was asked to taste the food samples and rate from point 1 to 9.

All the food sample were prepared at the college food laboratory under clean and hygienic condition, the food samples of both the categories were prepared and displayed under the terminology of ‘A’ and ‘B’ in order to not disclosing the food categories of the sample and to avoid biasness. During the evaluation the panelist were served water in between to evaluate better taste.

On evaluating the responses of the panelist the out of 10 products each of both the categories the 8 products showed to have preference towards homemade food samples and 2 products had preference towards ready to eat food samples. Indicating maximum like towards the homemade food in comparison of ready to eat food. The response of the panelist toward the homemade food revealed better taste, flavor, aroma and texture in compare to the ready to eat food. Hence the liking towards the homemade food was drastically high than that of the ready to eat food.

International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

Visit: www.ijirset.com

Vol. 8, Issue 1, January 2019

REFERENCES

1. <https://www.alliedmarketresearch.com/packaged-food-market>.
2. M*, m., & dr.n.sundaram. (n.d.). A market study on key determinants of ready-toeat/cook products with respect to tier-i cities inSouthern india.
3. Asmahawa, h. K. (n.d.). A study on consumer purchase intention towards ready-to-eat food In ahmedabad .
4. Mia k. Ahlgren, i.-b. G. (2005). The impact of the meal situation on the consumption of ready Meals. International journal of consumer studies .
5. Arjunan, m. A. (2012). A study on cosumers' buyingbehaviour towards instant food products in coimbatore.
6. Priyadarshini, v. (2015). Purchasing practice of the consumers towards ready to eat food products.
7. Nirmalraj, r. (2012). A study on ready to eat food industry. *International journal in multidisciplinary and acedemic research* .
8. [Http://www.futuremarketinsights.com/reports/ready-to-eat-food-market](http://www.futuremarketinsights.com/reports/ready-to-eat-food-market), 9.
9. ala'a alkerwi, I. . (2008). Consumption of ready-made meals and increased risk of obesity: findings from the observation of cardiovascular risk factors in luxembourg (oriscav-lux) study.
10. Jennifer remnant, j. A. (2015). The nutritional content and cost of supermarket ready-meals. Cross-sectional analysis .
11. Ranganna, s. *Handbook of analysis and quality control for fruits and vegetables*.
12. Life, a. F. (2010). *Www.foodfactoflife.org.uk* © food –.