

Organoleptic Evaluation of Products Prepared in Standardized and Local Brand Kitchen Equipments

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Abstract

The present study was undertaken to work out the ergonomic cost of work performed with the help of selected standardized and local brand kitchen tools. A multistage random sampling procedure was adopted for selecting the households to find out the possession of kitchen tools. Total 210 households were studied from three selected zones of Kanpur city. On the basis of survey most commonly used standardized and local brand kitchen tools were selected for the experimental study and their ergonomic features were also analyzed. A nine point hedonic scale was used for organoleptic evaluation. In organoleptic evaluation the standardized brand ranked highest score for Appearance, Colour, Texture, Taste, Flavour and Overall acceptability as compared to local brand kitchen utensils. The statistical analysis of prepared product in standardized and local brand indicates that there was highly significant difference in the brands for 'Chhola' ($F=63.02$) and 'Lauki ka Halwa' ($F=178.18$).

Key words: Ergonomic, evaluation, organoleptic, flavour, appearance.

Introduction

Ergonomics deals with man-machine relationship. This relationship has to be very close for better work efficiency, maximum body comforts and good health of the workers. Non-ergonomically designed equipments may increase the ergonomic cost of activities, leading to many health hazards and low work efficiency. So it is necessary to increase the work efficiency by designing/modifying the existing tools and equipments to make them women friendly. Ergonomic design facilitates harmony between the person and person's work environment by addressing individual needs and characteristics, and by positioning the body so there is less stress and strain on it while performing required tasks^[1].

The palatability of cooked food was tested on the basis of organoleptic test. Organoleptic refers to any sensory properties of a produced involving Colour, Texture, Taste, Odour and feel. Organoleptic testing involves inspection through visual examination, feeling and

smelling of product. The main goal of research related to kitchen tools is to identify and reduce the existing incompatibilities between human capacities and task requirements and to make workplace safe, healthy, productive as well as comfortable and satisfying one.

Lack of ergonomic data bank and research in this directions are the serious set back in this process. Therefore, it is important to create an awareness among the manufacturer and consumers on the importance of user friendly equipment. The study in this direction is therefore expected to brief useful data for the improvement of equipment design to match with the requirement of users.

Materials and Methods

Descriptive cum experimental research design was used in present study. The tools employed for data collection was interview schedule and observation technique. A sample of 210 home makers were selected randomly for the present study through

multistage random sampling procedure for recording ergonomic features various parameter were used i.e. diameter of handle, length of handle (measuring tape), for experimental data various parameter were use for recording weight (weighing balance) etc. Time spent stop watch. The developed and standardized recipes were prepared in selected standardized and local brand kitchen utensils i.e. Pressure cooker, Karahi, and evaluated for sensory quality characteristics by five judges. A nine point hedonic scale was used for organoleptic evaluation such as appearance, Colour, Texture, Taste and Overall acceptability^[5].

Result and Discussion

Possession of Standardized and Local brand of Kitchen Equipments:

In surface cooking utensils include Pressure cooker, Frying pan, Sauce pan,

Karahi, Tawa and Patila. Table 1 depicts the information related to standardized and local brand of Pressure cooker possessed by urban families. The most common standardized brand of Pressure cooker possessed by urban families were *Hawkins, Futura, united, Prestige Bullet, Devidayal, Dalphin* and local brand *L.G. (Life goods), National, Philips, Timex, Superfine, Milton and Hot star.*

The data elicited in Table 1 shows that majority (51.43%) of the respondents were possessed *Hawkins* brand followed by *United* (28.57%) and *Prestige* (22.86%) of standardized brand. The minimum i.e. 2.86 per cent respondents possessed *Dalphin* brand for Pressure cooker. It was further observed that the possession of local brand for Pressure cooker, maximum (19.52 %) respondents were used *L.G.* brand followed by *National* and *Timex* i.e. 6.19 per cent.

Table 1 Possession of standardized and local brand of Pressure cooker

N=210

S. No.	Brand Name	No. of respondents	Percentage
A.	Standardized brand		
i.	Futura	25	11.90
ii.	Hawkins	108	51.43
iii.	United	60	28.57
iv.	Prestige	48	22.86
v.	Bullet	42	20.00
vi.	Devi Dayal	15	7.14
vii.	Dalphin	6	2.86
B.	Local brand		
I.	L.G.	41	19.52
II.	National	13	6.19
III.	Philips	12	5.71
IV.	Timex	13	6.19
V.	Milton	4	1.90
VI.	Super fine	5	2.38
VII.	Hot Star	4	1.90

From over all discussion it can be concluded that the majority of the respondents possessed Pressure cooker of standardized brand as compared to local brand. The reason for the possession of more standardized brand

by urban families was found the desire to possess good quality kitchen equipment for better efficiency of work. The use of Pressure cooker of standardized brands in urban families is increasing day by day because

people are becoming more conscious for conserving fuel, energy and time^[4].

The data presented in Table 2 clearly indicated that the most common non-stick standardized brands possessed for Karahi, and Tawa were *Future*, *Nirlep*, *Jaipan*, *Kanchan*, *Nirali*, *Cellow supra*, *Prestige* and *Trupati*. It was observed that majority (24.26%)

respondents possessed *Nirlep* brand followed by *Futura* (16.19%) and *Nirali* (13.81) for Karahi (non-stick). In case of local brand of Tawa majority (39.05%) of respondents possessed *Madan* brand of hindalium metal for Karahi followed by *Deepak* (35.71%) and *Muskan* (19.05).

Table 2 Possession of standardized and local brand of Karahi and Tawa N=210

S. No.	Brand Name	Surface Cooking Utensils	
		Karahi	Tawa
A.	Standardized brand		
i.	Futura	34 (16.19)	26 (12.38)
ii.	Nirlep	51 (24.26)	18 (8.57)
iii.	Jaipan	10 (4.76)	15 (7.14)
iv.	Kanchan	11 (5.24)	13 (6.19)
v.	Nirali	29 (13.81)	5 (2.38)
vi.	Cellow supra	16 (7.62)	12 (5.71)
vii.	Prestige	10 (4.76)	58 (27.62)
viii.	Trupati	2 (0.95)	3 (1.43)
B.	Local brand		
i.	Blue diamond	41 (6.67)	12 (5.71)
ii.	Asian	13 (6.19)	27 (12.86)
iii.	Cosmic	10 (4.76)	-
iv.	Sansui	28 (13.33)	3 (1.43)
v.	Santury	4 (1.90)	2 (0.45)
vi.	Muskan	40 (19.05)	-
vii.	Deepak	75 (35.71)	-
viii.	Madan	82 (39.05)	-
ix.	Shakti	18 (8.57)	-
x.	Neelam	4 (1.90)	-
xi.	Lion	13 (6.19)	-
xii.	Ginni	8 (3.81)	-
xiii.	Others (different brand of iron-Goldenline, Payal, Chargdin)	177 (84.29)	208 (99.05)

(Figures in parentheses indicate percentage)

It was also found that about 12.86 per cent respondents possessed *Asian* brand and very few (0.95%) respondents possessed *Santury* brand for Tawa of local brand. Hence majority of respondents used iron Tawa and Karahi as a surface cooking utensil^[3].

Performance Evaluation (Organoleptic Test) of Product

The palatability of cooked food was tested on the basis of organoleptic test. Organoleptic refers to any sensory properties of a produced involving Colour, Texture, Taste, Odure and feel. Organoleptic testing involves inspection through visual examination, feeling and smelling of product.

The developed and standardized recipes were prepared in selected standardized and local brand kitchen utensils i.e. Pressure cooker, Karahi, and evaluated for sensory quality characteristics by five judges by using

9 point 'Hedonic scale' to test liking and disliking of prepared product. The recipes were tested for various characteristics, i.e. Appearance (Colour), Texture, Taste, Flavour and Over all acceptability^[5].

Table 3 Mean score of Sensory evaluation of Chhola prepared on Standardized brand and local brand Pressure Cooker

S.No.	Parameters	Selected Pressure Cooker		Mean
		Standardized Brand	Local Brand	
1.	Appearance (colour)	7.6	6.4	7.0
2.	Texture	8.4	5.0	6.7
3.	Taste	8.6	5.6	7.1
4.	Flavour	8.0	5.6	6.8
5.	Over all acceptability	8.2	5.8	7.0
	Mean	8.2	5.7	6.9

	SE (d)	CD
Brand	0.31	NS
Parameter	0.49	S*
Brand x Parameter	0.70	NS

Table 4 presented comparative analysis of mean score of 'Chhola' prepared in selected standardized and local brand Pressure cooker to find out their sensory characteristics in terms of Appearance, (Plate No.-1). Texture, Taste, Flavour and Over all acceptability. Table shows that value of mean score of 'Chhola' prepared in standardized brand Pressure cooker (Hawkins) was found maximum score (8.6) for Taste followed by Texture scored 8.4 which fall in the category of between "Like extremely" (9) and "Like very much"^[8].

It is also pertinent to mention here the comparative analysis of 'Chhola' prepared in standardized brand was found for Over all acceptability i.e. 8.2 score 'Chhola' prepared in local brand found low acceptability due to hardness of food whereas the diameter of bottom, capacity of Pressure cooker the

diameter of burner, flame of burner, quantity of ingredients and time of cooking were same for both standardized and local brand Pressure cooker.

It was also observed that at the time of cooking the standardized brand pressure cooker makes two clear pressure (Whistle) whereas in case of local brand less pressure was observed. The reason may be due to lack ergonomic features (Lack of holes in bent tube) and low quality of material of pressure cooker. Number of holes in vent tube was found less^[2]. The analysis of variance of 'Chhola' prepared in standardized and local brand (Appendix-XX) indicates that there was significant differences in the brand (F= 63.02, Significant at 0.1 p level of significance). So it may be concluded that *Hawkins* brand found best as compared to *L.G.* brand pressure cooker and also takes less time for cooking.

Table 4 Mean score of Sensory evaluation of Lauki ka Halwa prepared on Standardized brand and local brand Karahi

S. No.	Parameters	Selected Karahi		Mean
		Standardized Brand	Local Brand	
1.	Appearance (colour)	8.0	5.2	6.6
2.	Texture	7.6	4.6	6.1
3.	Taste	8.6	6.2	7.4
4.	Flavour	8.0	5.8	6.9
5.	Over all acceptability	8.4	4.8	6.6
	Mean	8.1	5.3	6.7

	SE (d)	CD
Brand	0.21	0.42
Parameter	0.33	0.67
Brand x Parameter	0.47	NS

Analysis of Table 3 depicts that mean sensory score of 'Lauki ka Halwa' prepared in selected standardized and local brand 'Karahi' to find out the sensory characteristics in terms of Appearance, Texture, Taste, Flavour and 'Over all' acceptability (Plate No.-2). It is clear from the Table that maximum score i.e.8.6 was found for 'Taste' which was observed between "Like extremely" (9) and "Like very much" (8) category, followed by Appearance and Flavour was found 8.0 score (Like very much). The minimum score i.e. 7.6 was found for Texture which was observed between the category "Like moderately" (7) and "Like very much" (8) respectively.

Data related to sensory evaluation of 'Lauki ka Halwa' prepared in local brand (*Santury*) Karahi was scrutinized that maximum score i.e. 6.2 found for Taste which

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was observed between "Like slightly" (6) and "Like moderately" (7) followed by Flavour (5.8 score) and Appearance (5.2 score) which fall between the category of "Neither like nor dislike" (5) and "Like slightly", whereas the minimum score (4.6) was found for Texture, which was observed between "Dislike slightly" (4) and "Neither like nor dislike" (5) respectively.

Further elicited in the data for Overall acceptability of product prepared in standardized and local brand was found 8.4 score and 4.8 score respectively. The analysis of variance (ANOVA) of 'Lauki ka Halwa' prepared in standardized and local brand (Appendix-XX) indicates that there was significant differences in brand and parameter (F=178.18** highly significant, and F = 4.13*, at 0.01% level of significance).

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