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Analytical Study Oncane Sugar Based Food Display Items Prepared in Pune

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Abstract: ***Large food displays are one of the important components on the buffet tables which add the aesthetic value. It is rightly said that one eats with eyes first so the buffet tables in banqueting can be made attractive with the help of the food displays. Food displays can be edible or non-edible. Researcher has tried to find the acceptability of the food displays made with the help of the cane sugar as major ingredient. The sampling method used was non probability sampling method. Data was collected with the help of questionnaire which was filled by the 90 respondents after observing the food display items. The display items selected for the research were Wedding cake, Guitar, Meringue Tower, Caramel Swan & Caramel Basket. All the display items were appreciated by the respondents. Display items had passed the acceptability test as well. Out of the five food displays, Caramel basket had scored the highest.***

Keywords: Sugar craft, Display items, Pastillage, Caramel, Meringue

1.Introduction

Food displays play very important role of adding aesthetic value on the buffet tables. Although food holds the spotlight in all buffet presentation and the objective of buffet planning must be to achieve visual beauty both in the artistic presentation of each item of edible food and in the arrangement of the many dishes on the buffet table. Nothing heightens the beauty of the buffet more than an out-standing center piece made of ice, tallow or other such materials. The term non edible is used to indicate that the center piece is not meant for consumption along with the rest of the food on the buffet. The guest should be able to identify the theme of the buffet at a glance, just by observing the non-edible decorations that provide eye-catching background for the presentation. A non-edible decorative display piece should be a work of art, always in good taste, whether the figure is made of ice, sugar, tallow or any other material. Following are the different types of food displays:

1. Ice Carvings
2. Tallow Displays
3. Butter/Margarine Sculptures
4. Salt Carvings or sculptures (Saltillage)
5. SugarCraft (Pastillage)/Wedding Cake
6. Chocolate Mouldings
7. Fruit and Vegetable Carvings.

Sugar is one of the versatile ingredient which are used for making displays items. Sugar can be used in different forms prominently two forms are commonly used grain sugar for making caramel displays & powder sugar & icing sugar for making sugar paste, pastillage, royal icing displays. One requires lots of ideas, imagination, practice & skill for preparing any kind of the display item.

2.Research Methodology

2.1 Selection of sample unit:

The researcher had used non probability sampling for this study. Non probability sampling is that sampling procedure which does not afford any basis for estimating probability that each item in the population has of being included in the sample. Non probability sampling is also known by different names such as deliberate sampling, purposive sampling & judgment sampling.

2.2 Sample size:

The sample size of the respondent for the study was 90. It was collected from the teaching, non-teaching staff & students of hotel management college.

2.3 Data collection methods:

There are two methods of data collection used for the study:

2.3.1 Primary data collection:

The primary data was collected using the tools as below:

- **Observations method** was used to collect data pertaining to preparation methods used for display items.
- **Questionnaire** was prepared to understand the view of the respondent about the prepared display items.

2.3.2 Secondary data collection:

Secondary data was collected from the internet

- **Internet:** Different types of sugar craft items were searched on the internet. Even various types of designs & patterns were viewed. Videos also watched for making sugar paste & displays

2.4 Selection of sample products:

Following display items were selected for the study.

a. **Guitar**- Guitar was made from the pastillage paste. Design of guitar was drawn on chart paper. Pastillage dough was rolled, cut according to the drawing & dried out. All cut out were joined with the help of royal icing & rest of the parts also piped using royal icing.

b. **Wedding cake**- Wedding cake for the display purpose was made from three components. First one was the thermocol which was the base for entire cake. Second was the pastillage paste which was used to cover the thermocol & to make ribbon, strips & flowers. Third component was the royal icing used to pipe borders on the cake.

c. **Meringue Tower-** Meringue tower was made from the meringue mounds. The base of aluminum cone was prepared. Then meringue mounds were baked in the oven till crisp. Finally meringue mounds were stuck on the cone with the help of royal icing.

d. **Caramel Swan**- Caramel swan was purely made from the boiled sugar. Stencil of body & wings were made from the ply wood. The stencil was greased with margarine. Then sugar boiled till caramel stage& poured in stencils. After cooling, sugar crystallizes & becomes brittle. Main body was stuck on the base of caramel, after that wings were attached to the main body.

e. Caramel basket-Caramel basket was made from the pulled sugar. For waving of basket, base with the rods were prepared. Sugar was boiled till caramel stage, and then it was pulled & waved on the basket waver. Once the sugar was brittle, rods from the base were pulled out & replaced with the pulled caramel sticks. Even the handle of the basket was made from pulled caramel sugar & attached to the basket.

3.Results and Discussion

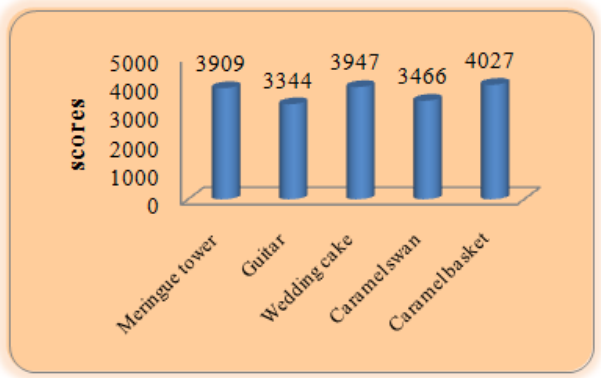
3.1 Appreciation of Display items prepared from sugar

The researcher had surveyed five star hotels in Pune to find out current trends& various displays made to keep on buffet table. The idea for preparing display was taken from hotels. Since the study was based on sugar, so the displays were made from the sugar.

The experiment was conducted in laboratory of Hotel Management & Catering Technology College. Five displays were made using sugar.

Total score of laymen on each display:

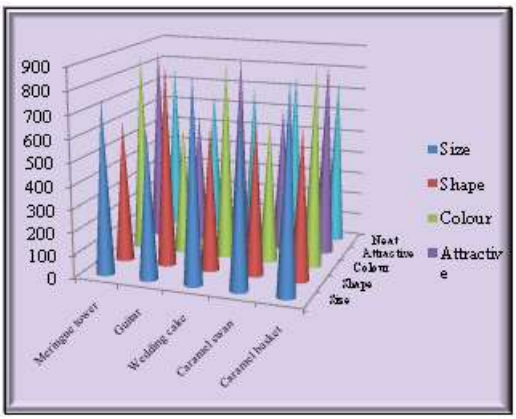
Meringue Tower	*Guitar*	*Wedding Cake*	*Caramel Swan*	*Caramel Basket*	*Total*
3909	3344	3947	3466	4027	18693



It is revealed from the graph that caramel basket has scored highest marks as compared to other sugar displays because sample had realized that it is very skilful work, it was looking very neat & attractive. Hence sample has appreciated the most amongst the other displays.

Scores of display and attributes:

Parameters	*Meringue tower*	*Guitar*	*Wedding cake*	*Caramel swan*	*Caramel basket*
Size	758	650	885	757	885
Shape	626	886	634	664	660
Colour	880	574	872	624	872
Attractive	880	582	863	650	863
Neat	765	652	693	771	747



Hypothesis testing

H_0: There is no significant change in the appreciation of laymen for different products or different attributes in total.
H_1: There is significant change in the appreciation of laymen for different products or different attributes in total.

The method used for hypothesis resting is Two-Factor ANOVA without replication.

Two- Factor ANOVA is a multiple regression with two categorical factors. There are Categorical explanatory variable; in this research it is type of display. Also there is a quantitative response variable attributes.

An ANOVA design is replicable if there are multiple observations for some of the treatment combination. However in this case the displays are independent. Hence this is a two factor ANOVA without replication. The standard ANOVA table from excel is given below. It shows row wise variance, which refers to type of display per attribute. For this research this value is unaccounted. The display was not repeated.

Total scores of sugar display items over each parameter

Parameters	*Meringue tower*	*Guitar*	*Wedding cake*	*Caramel swan*	*Caramel basket*
Size	758	650	885	757	885
Shape	626	886	634	664	660
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The standard ANOVA table from excel is given below. It shows row wise variance, which refers to type of display per attribute. For this research this value is unaccounted. The display was not repeated.

ANOVA: Two-Factor Without Replication						
Rowwise analysis						
Summary	Count	Sum	Average	Variance		
Size	5	3935	787	9929.5		
Shape	5	3470	694	11786		
Colour	5	3822	764.4	23120.8		
Attractive	5	3838	767.6	19778.3		
Neat	5	3628	725.6	2637.8		
Columnwise Analysis						
Meringue tower	5	3909	781.8	11102.2		
Guitar	5	3344	668.8	16083.2		
Wedding cake	5	3947	789.4	13705.3		
Caramel swan	5	3466	693.2	4407.7		
Caramel basket	5	4027	805.4	9660.3		
ANOVA – Testing the hypothesis						
Source of Variation	SS	df	MS	F	P-value	F crit
Rows	27957.44	4	6989.36	0.582819	0.679532	3.006917
Columns	77132.24	4	19283.06	1.607949	0.220672	3.006917
Error	191877.4	16	11992.34			
Total	296967	24				

Calculation of ANOVA for attributes of display by the laymen

We will concentrate on column wise analysis where each display's attributes are taken into consideration. Swan shows little variance. It means that there is covenant by the sample on that particular display Item. However, this study deals with testing if this difference in the appreciation of any display item on the basis of attribute is significant or not.

The column wise value of F is 1.6. Value of df is 4.

4.Discussion

Value of F is not significant for type of display about various attributes as

Calculated F 1.607949< tabulated F 3.006917

Value of F is not significant for appreciation of display via various attributes of display by laymen.

Therefore null hypothesis is accepted that is there is no significant change in the appreciation of laymen for different products or different attributes in total.

It means that there is no significant change in the appreciation of laymen for different products about different attributes because all the displays were looking great. Here was no chance for the sample to pin point at any of the displays. All the displays have perfect shape & size. Also they were looking very neat & attractive. Sample appreciated the art and skill involved in making of the sugar displays.

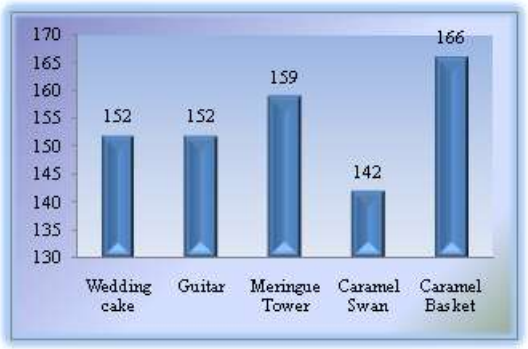
3.2 Acceptability of display items over total & over different parameter:

Acceptability test was carried out to find out whether all display items secure the passing percentage.

If the display secures more than 50 percentages means it is accepted. It was first applied over the total score of each sugar display items i.e. wedding cake, guitar, meringue tower, caramel swan & caramel basket. Then it was conducted as per the parameters i.e. artistic achievement, craftsmanship, attractiveness & overall appearance for all sugar display items.

Acceptability over total score of sugar display items:

Total Scores					
S. no.	*Display item*	*Total Score*	*Maximum Score*	*%*	*Accepted/Rejected*
1	Wedding cake	152	180	84.4	Accepted
2	Guitar	152	180	84.4	Accepted
3	Meringue Tower	159	180	88.3	Accepted
4	Caramel Swan	142	180	78.8	Accepted
5	Caramel Basket	166	180	92.2	Accepted



The minimum score for the acceptability of sugar display items was 90 points. From the above graph it is clear that all the display items have scored more than the required score. Hence we can conclude that all the display items are accepted.

Thus all the sugar display items are accepted over all the parameters of the acceptability

5.Conclusion

- In total score on each display, caramel basket has scored the highest marks as compared to other sugar displays because sample liked the intricacy of caramel basket. Also it was looking very neat & attractive. Hence sample has appreciated the most amongst the other displays.
- Null hypothesis, **t**here is no significant change in the appreciation of laymen for different products or different attributes in total is accepted.
- In comparison of five dimensions of each display, all displays scored almost same marks across all parameter because all the displays had perfect size & shape. All display items were looking very neat & attractive.
- In coefficient of correlation between parameters, it can be concluded that there is low correlation between artistic achievements with craftsmanship as compare to attractiveness & overall appearance.
- There is low correlation between attractiveness with craftsmanship as compare to artistic achievement & overall achievement.
- There is low correlation between overall appearance with craftsmanship as compare to artistic achievement & attractiveness.
- Caramel basket has scored the highest & caramel swan has scored the lowest in expert's evaluation of sugar display items because of the intricacy & craftsmanship of caramel basket & simplicity & overall appearance of caramel swan.
- The minimum score for the acceptability of sugar display items was 90 points & all the display items have scored more than 90 points over total score of all parameter & individual parameter. Hence we can conclude that all the display items are accepted.

References

[1] Annie Smith,(1996), The art of sugarcraft, chamcellor Press, London
[2] Anandam Lahiri, Vikrant Vyas, (2011), Advance bakery & confectionery, Naman Publisher & distributors, New Delhi
[3] Angela Nilsen, Sarah Maxwell, (2000), The cake decorators bible, South water, United Kingdom
[4] Deerr, N. (1921). Cane sugar; a textbook on the agriculture of the sugar cane, the manufacture of cane sugar, and the analysis of sugar-house products, (2d (rev. and enl.) ed.). London: N. Rodger, London
[5] Edwards, W. (2000). The science of sugar confectionery. Cambridge: Royal Society of Chemistry, Cambridge
[6] Friberg, B., & Friberg, A. (2002). The professional pastry chef: Fundamentals of baking and pastry (4th ed.). New York: J. Wiley
[7] Hanneman, L., & Marshall, G. (1978). Cake design and decoration (4th ed.). London: Applied Science, London
[8] Karen Goble,(2009), Quick & easy wedding cakes, New Holland publishers (UK) Ltd, London
[9] Kothari C.R. (2001) Research Methodology New Delhi: Wishwa Prakashan, New Delhi
[10] S.C. Dubey, Basic baking science & craft, S.C. Dubey, Anand, Gujarat, India