

SQUASH BUCHI

Kimberly Carl C. Banzuelo, Mary Joy Calma, Gabriel Gabriel, Hannah Mae Guerrerro,
Kristine Joy Viaje, Lian Visto

Department: College of Education

Course: BTLE Major in Home Economics

INTRODUCTION

Utilizing fruits and vegetables into a healthy snack food will help answer the problem of undernutrition in the country. Squash is a common fruit in the country that is underdeveloped or underutilized, it is very nutritious and can be a healthy addition to our diet. It is rich in vitamins, minerals, and antioxidants found in squash provide several health benefits. The antioxidants in squash can play an important role in reducing oxidative stress. In turn, this may help with cancer prevention.

"Micronutrient undernutrition is also highly prevalent in the Philippines: 38 among infants six to 11 months old; 263 among children 12-23 months; and 20% of pregnant women are anemic. Nearly 17 of children aged 6-59 months suffered from vitamin A deficiency (2018), of which children aged 12-24 months had the highest prevalence (22) followed by children aged six to 12 months) (18%). (the world bank, 2021)

Squash, botanically known as *Cucurbita maxima* L., is commonly grown in the Philippines throughout the year. It is usually grown in home gardens and on a commercial

scale for its fruits, young shoots, flowers, and seeds. In some places, Intercropping squash with other crops such as corn, sugarcane, and coconut is practiced. Like other cucurbits, squash is recognized as an important source of vitamins and minerals. (PhilRice, 2010)

With these, the proponents want to produce a healthy version of finger food or snack food made from Squash. The researcher made this product to help answer the problem of undernutrition among children in the country by using underutilized vegetables but a nutritious one. It is comparable to local karyoka made from glutinous rice but less expensive.

STATEMENT OF THE PROBLEM

The study aimed to produce another variety of healthy snacks using squash as the main ingredients. Specifically, it sought to answer the following subproblems:

1. What are the ingredients tools, utensils, and procedures in the Preparation of Squash Balls?
2. How do the groups of respondents assess the level of acceptability of Squash Balls in terms of:

2.1 Appearance;

2.2 Aroma:

2.3 Flavor; and

2.4 Texture?

3. Is there any significant difference in the level of acceptability of Squash Balls based on the above mentioned variables?

4. What is the result of moisture analysis of and nutrient analysis of Squash Balls?

METHODOLOGY

This study made use of the descriptive method which is a fact of finding adequate information. The data collected are reported from the point of view of adjectives and the basic assumption of the study underway. (Reyes 2012)

The researchers administered the survey questionnaire which identify the respondents' sex, educational attainment, and other demographic characteristics.

The researchers used the purposive sampling procedure. Purposive sampling, because they will use their judgment in selecting samples and determining the sample size.

The Target respondents are selected fifteen (15) consumers and five (5) experts. The researchers used simple random sampling to determine the population of the study. Simple random is based on randomly selecting the respondents as samples from the population in such a way that every set of respondents has an equal choice of the probability of being selected.

Respondents were asked to answer the researchers' experimental and survey questionnaires to determine the much-needed data for the study.

DATA GATHERING PROCEDURE

The following are the steps and procedures that were undertaken in gathering the data.

1. The researchers asked permission from the Dean, College of Education with the use of the letter of request seeking permission to conduct a study and noted by the subject teacher

2. Upon the approval of the request, the researchers: administered the survey questionnaire to the selected respondent a after evaluation of the finished product.

3. Collected the answered survey questionnaire.

4. Tabulated, computed, analyzed, and interpreted data.

5. Present the result of the data in the tabular and textual presentation.

PRESENTATION, ANALYSIS, AND INTERPRETATION OF DATA

Subproblems No.1 What are the ingredients tools, utensils, and procedures in the Preparation of Squash Balls?

Table 1

Ingredients used in Preparation of Squash Balls

Quantity	Unit	Description	Unit Cost	Extended Cost
¼	Kilo	Squash	40.00/kilo	10.00
1 ½	Cup	Coconut Mill	20.00/piece	40.00
1	Cup	Coconut Pulp	42.00/kilo	1.89
3	Tablespoon	Cornstarch	55.00/kilo	2.48
3	Tablespoon	Sugar	72.00/kilo	7.00
1	Piece	Egg	7.00/piece	45.00
2	Cups	Oil	90.00/liter	
TOTAL:			326.00	106.37

Servings: 28 pieces (12 grams each)

Price per Piece: 4.00

Selling Prices: 6.00 pesos each (at 50% mark up)

Table 2

Tools, and Utensils Used in the Preparation of Squash

Quantity	Unit	Specification
1	Piece	Knife
1	Unit	Blender
1	Piece	Chopping board
4	Pieces	Bowl
1	Set	Measuring cup
2	Pieces	Spoon
1	Unit	Sauce Pan

Procedure

1. Prepare all the ingredients needed.

2. Feel and slice the squash.
3. Pour and transfer the coconut milk in the casserole. Preheat in 1-2 minutes.
4. Put the squash in the coconut milk. Boil and wait for 10 minutes until its ready. After 10 minutes drain the squash and let it cool.
5. Put oil in the casserole and preheat. While pre-heating mash the squash, until smooth.
6. Combine all the ingredients onto the mashed squash and mix well. Shape it into a ball, coat it with desiccated coconut and start deep frying the squash balls, wait until it turns brown.
7. Deep fry the balls until golden brown and serve it.

Subproblem No.2 How do the groups of respondents assess the level of acceptability of Squash balls?

Table 3

Evaluation on the Level of Acceptability of Squash Balls

Criteria	Consumer		Expert		Overall Weighted Mean	
	WM	VI	WM	VI	WM	VI
1.Appearance	2.89	MA	3.00	MA	2.95	MA
2.Aroma	3.00	MA	2.67	MA	2.84	MA
3.Flavor	3.00	MA	3.00	MA	3.00	MA
4.Texture	3.00	MA	2.61	MA	2.81	MA
Total	2.97	MA	2.82	MA	2.90	MA

As shown in Table 3, all the four criteria are evaluated by the consumer respondents as Moderately Acceptable as evidenced by the overall mean value of 2.97

Meanwhile, the expert respondents evaluated all the four criteria as Moderately Acceptable as

evidence by the mean values of 3.00, 2.67, and 2.61 respectively.

As a whole, the overall obtained mean of 2.90 indicated that the Squash Balls is Moderately Acceptable by the two groups of respondents.

The result indicates that the product needs to improve its overall characteristics using continued research and experiment to achieve a highly acceptable product.

The findings of the study are similar to the findings on the research study of Borro which states that the "baked cakes with no grated squash and 120 grams grated squash were moderately liked by the respondents while those baked cakes. Due to limited tools and equipment's at home and the researchers are far from each other the recipe formulation didn't undergo several dry runs since the study was conducted during a covid-19 pandemic.

Sub-Problem No.3 Is there a significant difference in the characteristics of Squash Balls based on the evaluation of the respondents?

Table 4

Significant Difference on the Assessment of Respondents on the Level of Acceptability of Squash Balls

Respondents	Mean	S-Deviation	Computed t-value	Decision	Verbal Interpretation
Expert	2.82	0.2073	2.6420	Reject Ho	Significant
Consumer	2.97	0.0550			

Looking at the data in Table 9, it could be gleaned in the results of the statistical analysis from the data

in the assessment of the expert and consumer respondent in acceptability of Squash Balls obtained a computed t value of 2.6420 which is greater than the tabular value of 2.101 at a .05 percent level of significance with 28 degrees of freedom and verbally interpreted significant. Hence, hypothesis. resulted in the rejection of the null.

Since we reject the null hypothesis, there is a strong indication that there is a significant difference in the assessment of the expert and consumer respondents on the acceptability of Squash Balls in terms of its "appearance," "aroma," "flavor," and "texture"

This manifests that the expert respondents do not concur with their assessment in terms of appearance," "aroma," "flavor," and "texture" of Squash Balls with the consumer respondents. The result of the evaluation of the respondents is similar to the result of the research study of Santiago those states "There were significant differences in the level of acceptability of the different treatments as to appearance, aroma, flavor, texture as well as general acceptability." This implies that the product must undergo further research and experiment to improve its overall characteristics especially the appearance and standardize the recipe and achieve a highly acceptable product.

Subproblem No.4 What is the result of nutrient analysis of Squash Balls?

Based on the result of Nutrient Analysis of Squash Balls it has 28 calories, 28 Vitamin C, Calcium, and Saturated Fat, 18 Vitamin A, Iron, Sodium, Protein and Dietary Fiber per

serving at 33 grams. (see attached result marked as Appendix "D")

As to the result of moisture analysis tested at EARIST-DOST Food Testing Laboratory, it has 3.21% moisture per 5 grams using Standard Heating Process @ 110 C. (see attached result marked as "Appendix "g")

SUMMARY OF FINDINGS

The following are the salient findings of the study.

1. On the ingredients, materials, apparatuses, and procedure in the preparation and development of the Watermelon and Marang Ice Cream.

Ingredients. The Ingredients used to produce the squash balls are as follows: squash fruit, coconut milk, coconut pulp,

sugar, cornstarch, and cooking oil,

Tools and Utensils. mixing bowls, measuring cups, knife, measuring spoon, wooden spoon, cooking vessels, and stove.

Procedure in the Preparation of Squash Balls. First, prepare all the ingredients needed. Peel and Slice the Squash. Pour and transfer the coconut milk to the casserole. Preheat in 1 - 2 minutes. Put the squash in the coconut milk. Boil and wait for 10 minutes until it is ready. After 10 minutes drain the squash and let it cool. Put oil in the casserole and preheat. While preheating mash the squash, and put the remaining ingredients such as egg, 4 tablespoons

of sugar, and 2 tablespoons of cornstarch. Mix well all the ingredients. In a tablespoon of mixture shape, it into a ball, coat in desiccated coconut and start deep frying the squash balls, wait until it turn a brown. In pumpkin, you can make 28 pieces of Sweetened squash. Deep fry the balls and serve.

2. On the respondent assessment in the level of acceptability of Squash Balls.

The assessment of the expert and expert respondents on the level of acceptability of Watermelon and Marang Ice Cream was moderately acceptability in terms of its appearance, crispiness, flavor, and texture, as reinforced by the overall weighted mean of 2.90

3. On the significant difference between the assessment of respondents.

The results of the statistical analysis from the data in the assessment of the expert and consumer respondent in acceptability of Squash Balls obtained a computed t value of 2.6420 which is greater than the tabular value of 2.101 at a .05 percent level of significance with 28 degrees of freedom and verbally interpreted significant. Hence, resulted in the rejection of the null hypothesis. Since we reject the null hypothesis, there is a strong indication that there is a significant difference in the assessment of the expert and consumer respondents on the acceptability of Squash Balls terms of "texture", "appearance", "crispiness", and "flavor".

4. On the result of nutritional facts of Squash Balls.

Based on the result of Nutrient Analysis of Squash Balls It has 28 calories, 2% Vitamin C, Calcium, and Saturated Fat, 14 Vitamin A, Iron, Sodium, Protein and Dietary Fiber per serving at 33 grams. As to the result moisture analysis, it has 3.11%

moisture per 5. grams using Standard Heating Process @ 110 Celsius.

CONCLUSIONS

Based on the findings of the study, the following are the conclusions:

1. Squash can be used as primary ingredients in the preparation of Squash Balls.
2. Squash Balls were moderately acceptable to the selected respondents in terms of their appearance, aroma flavor, and texture.
3. This manifests that the expert respondents do not concur with their assessment in terms of appearance, "crispiness," "flavor," and "texture" of Squash Balls with the consumer respondents.
4. Squash balls contains important nutrients needed by the body and it has a standard moisture content.

RECOMMENDATIONS

Based on the findings and conclusions of the study, it is recommended that:

1. Further research and experimentation must be done to have a standardized recipe to upgrade its quality and achieve a highly acceptable product.

2. Use a weighing scale or molder to achieve a uniform size.

3. The results of the study should be taken as a reference for a future related study.

4. Researchers may subject the product to proximate analysis.