ISSN No:-2456-2165

Development and Quality Evaluation of Moist Cake Utilizing Pili Pulp and Nuts (*Canarium ovatum*)

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Abstract:- The development of a moist cake with pili pulp and nuts is supplementary to the long line of products made from pili. Only a few developers utilized the pili pulp as the main ingredient in the formulation of their products. This study introduces pili pulp as major component that will trigger the consumer's delicate preference. To ensure its quality, nutrition information, chemical analysis, shelf life evaluation and consumer testing were adopted as parameters. Based on the result of the nutrition information, a 100g sample has 400 calories; 30.4g total fat; 8.24g saturated fat; 0 transfat; 1.90g polyunsaturated fat; 35.44g total carbohydrate; 1.46g dietary fiber; 18.49g sugars; 6.80g protein; 3.98% vitamin A and 19.5g of magnesium. On the other hand, chemical analysis shows the following results: ph-5.49, total soluble solids- 11 brix and moisture content 8.70%. Outcome of the shelf life study revealed that the finished product will only last for three days if stored under room temperature but once refrigerated, the product will sustain for fifteen days provided it is stored in a properly sealed container or polyethylene bag. Consumer evaluation was conducted at SSC Sorsogon City Campus among 200 respondents to test acceptability using the 9 point Hedonic Scale. As a result, one hundred eighty two (182) respondents evaluated the product as "liked very much" while eighteen (18) rated the product as "liked moderately". Thus, the overall acceptability is 7.91 which is equivalent to like very much. Furthermore, laboratory batch samples were produced as introductory products to the consumers.

Keywords:- *Quality Evaluation, Moist Cake, Pili Pulp, Shelf-Life, Consumer testing.*

I. INTRODUCTION

The pili tree (known in the scientific world as *Canarium*) is home grown to the Philippines. Pili nut is regarded as an exquisite ethnic food especially in the Bicol region. It is considered to be the most popular fruit-bearing tropical tree in the said region. As a matter of fact, a municipality in the province of Camarines Sur was named after the locally abundant tree, Pili. The Philippines is the only country capable of producing and cultivating pili-based food and other byproducts, with Bicol supplying almost 80% of the total output volume. In Bicol, the pili tree portrays a significant function in the economy. It imparts an additional income to some 13,435 farmers who own at least 10 trees and farm laborers hired as harvesters (Benchmark survey, 1998).

Pili nut tree is indigenous to the Philippines, less known but just as flexible as the legendary coconut. It can be considered as another tree of life because all parts of the tree are useful to humans. From the nuts to the pulp, shell and bark it can be utilized (Tan, 2004). In a paper presented by Orolfo (2000) regarding the Assessment of the Pili Industry in the Bicol Region, he mentioned that Pili has other attributes not possessed by other Philippine fruits. The fruit can be marketed fresh, as shelled nuts, dried kernel or processed into various delicacies. It does not require costly storage treatment. if properly dried it can be stored for 1 year under ordinary room condition thus giving enough time to speculate for better prices.

The processing industries generate employment to scores of people such as the traders, processors, assemblers, factory workers, store keepers and others offering miscellaneous services related to the industry. Knowing about the great potential of pili as a commercial crop of Bicol, intensive efforts made by various agencies and some Non- Government Organizations to hasten the development of the industry in the region.

Though the pili pulp comprises 64% of the fruit, it is underutilized compared to the wide usage of the pili nuts. Countless products have been developed utilizing the pili nut such as sweetened pili, conserva, pili tart, pili pudding and many more. Pili pulp is served during meals as side dish commonly seen at the table of Bicolano families. However, it is not familiar to the other regions as a meal preference.

Pham and Dumandan from UP Los Banos, pointed out that Pili pulp and nut oils are potential sources of important minor components such as carotenoids, sterols and tocopherols, which are being used and have contributed to the emergence of the nutraceutical industry. This holds the promise of the beneficial effects of pili oils and a sustainable way of producing value-added products with export potential that will benefit farmers and cooperatives interested in venturing into the pili industry.

Moreover, Cambaliza et al (2009) developed several recipes utilizing the pili pulp flour and oil. They incorporated it in making mayonnaise, Pili mango ice cream, pili meaty balls, pili choco drops, sardines, cookies,

ISSN No:-2456-2165

buns, noodles and pili oil with herbs. Sensory evaluation was also conducted and results revealed that all of the products were rated as liked very much.

Department of Science and Technology Region 5 conducted chemical and nutritional analysis of pili oil. Result showed that oil produced by the process has a very low free fatty acids (FFA) content of 0.06 and moisture content (MC) of 0.04% which favors a longer shelf life of the product. Likewise Asuncion of DOST stated that the characteristics of pili pulp oil is very similar to olive oil, however, pili pulp oil have more beta carotene, a known Vitamin A source and carotenoids, which makes it nutritious than olive oil.

In an article published by Fernando Simon of YAMANKO, Pili oil has been featured in traditional medicines and herbal remedies in Bicol Region. Indigenous knowledge gathered attest to its efficacy in treating skin diseases such as scabies and de worming capability for livestock such as pigs and chicken.

In Indonesia, especially in Minahasa and Moluccas islands, the kernels are used for making cake, bobengka in Minahasan or bubengka in Maluku. Pili kernel is also used in chocolate, ice cream, and baked goods. The largest buyers of pili nuts are in Hong Kong and Taiwan, the kernel is one of the major ingredients in one type of the famous Chinese festive desserts known as the "moon cake".

The young shoots and the fruit pulp are edible. The shoots are used in salads, and the pulp is eaten after it is boiled and seasoned. Boiled pili pulp resembles the sweet potato in texture; it is oily (about 12%) and is considered to have food value similar to the avocado. Pulp oil can be extracted and used for cooking or as a substitute for cotton seed oil in the manufacture of soap and edible products. The stony shells are excellent as fuel or as porous, inert growth medium for orchids and anthurium.

On the other hand, cakes are generally classified as either foam type or butter depending on the ingredients used and the method of preparation. (Gatchalian and De Leon,2010). Cake qualities are dependent on many factors, including the ingredients used for batter preparation, aeration of batters, and processing conditions. Some ingredients in the formulation also affect its structure and eating quality.

Cakes are often served as a celebratory dish on special occasions. There are numerous cake recipes; some are bread-like, while some are rich and elaborate, and others are even classified as century old recipes. Generally, it is made from various combinations of refined flour, shortening, sweeteners, eggs, milk leavening agent and flavoring. However, due to high demands from the growing community of advocates promoting a healthy lifestyle and a health-conscious society, producers continue to develop cakes from well-known, healthy raw materials such as the vegetables: carrot, malunggay, and squash.

In this study, the researchers developed a moist cake, due to its soft and fluffy characteristics, dominantly utilizing the native pili pulp and nuts. The researchers envision that the satisfying taste of the product is enough to renown it as one of the great prides of Sorsogon.

II. OBJECTIVES

The main purpose of this study is to develop a moist cake utilizing the pili pulp and nuts. Specifically it aims to:

1. Conduct consumer testing to determine acceptability of the product.
2. Determine the nutrition information of the product.
3. Find out chemical analysis such as pH, total soluble solids and moisture content
4. Conduct shelf life studies to determine the expiration date of the product.

III. MATERIALS AND METHODS

This study employed developmental and experimental method of research. It is developmental since it aims to develop another product from utilizing pili pulp and pili nuts which are abundant in locality of Sorsogon and descriptive method since it describe the result of the acceptability of the product. Moreover, experimental method was also employed since it has different treatments in the production of the product.

The development of the product was conducted inside the Food Service Management Laboratory. The procedure was divided into two parts: first is the preparation of the Pili Pulp and the second was the development of moist cake. Initial sensory evaluation was conducted and evaluated by selected fifteen food service management students using the 9-Point hedonic scale to evaluate the acceptability of quality attributes of the three treatments. These quality attributes were color, aroma, taste and texture. The purpose of initial sensory evaluation was to determine the most acceptable in the three treatments. The statistical treatment used in analyzing and interpreting the data was arithmetic weighted mean.

Furthermore, nutritional information of the most acceptable treatment was computed based on the present nutrients of the ingredients, thus the computation was based on the Guidance for Industry: A Food labeling guide (Center for Food Safety and Applied Nutrition (CFSAN), 2015. These values assist consumers in interpreting information about the amount of a nutrient that is present in a food and in comparing nutritional values of food products

Also, Chemical analysis in terms of pH, Total soluble solids (TSS) and Moisture content was determined since this may affect the quality of the product. pH value was determined by the use of pH meter, refractometer for Total soluble solids and digital weighing scale and oven for moisture content. Shelf life analysis through direct method was also conducted to determine when is the product begins to spoil. The product was properly stored under room temperature and refrigerated temperature; physical

ISSN No:-2456-2165

characteristics in terms of its color, aroma, taste and texture of the product were observed through organoleptic method.

Correspondingly, consumer evaluation was conducted inside Sorsogon State College main campus. General acceptability was evaluated by 200 respondents using 9-Point Hedonic scale score sheet, this was done to determine the acceptance of and provide benchmark of the developed product.

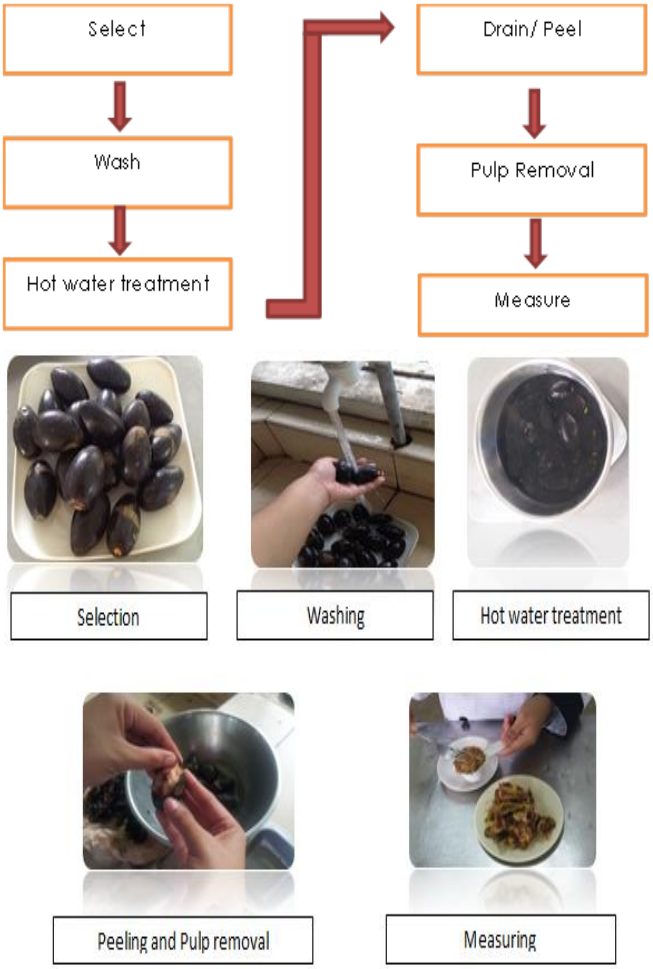


Figure 1. Preparation of Pili Pulp

Figure 1 shows the preparation of pili pulp. The pili fruit was selected from damage, bruises and soft skin. Then, the fruit is washed with running tap water to remove dirt and to avoid occurrence of microbial manifestation. Then, place the fruit in a vat with hot water and leave for 8-10 minutes to soften the pulp. Drain the water and peel manually. Remove the pulp by hand from the kernel and measure the amount of pulp needed in the batch production. In removal of pulp, proper handwashing technique was done to ensure the microbial safety of the product.

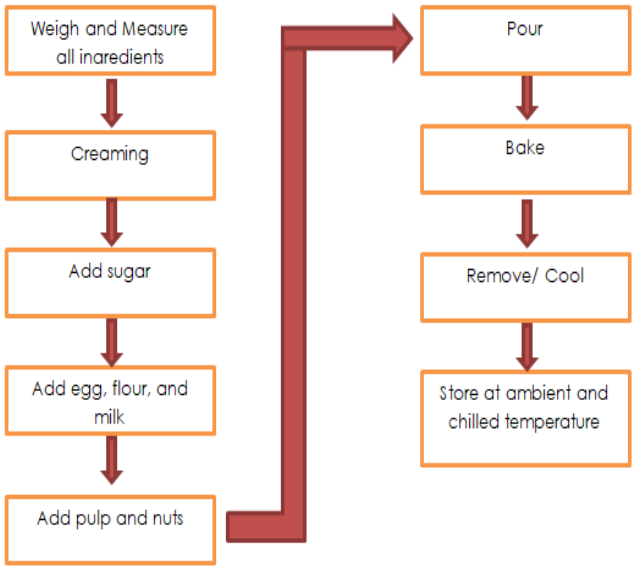


Figure 2: Production of Moist Pili Pulp and Nut cake

Figure 2 illustrates the Production of Moist Pili Pulp and Pili Nuts cake. The first step was to weigh and measure all the necessary ingredients such as Pili Pulp, pili nuts, cake flour, sugar and baking powder. Calibrated weighing scale was used to determine the accuracy of the weight; inaccurate measurement will affect the quality of the product. Next step is to cream the butter using wooden spoon until light and fluffy, then add sugar until it mixed well the butter. Then, add one egg at a time in the batter mixture, following flour and milk. Combine the pili pulp and pili nuts and add slowly in the mixture. Afterwards, pour half of the mixture in a greased loaf pan and put the mixture in a pre-heated oven and bake in a low heat for one hour or until golden brown. Pre-heated oven is necessary to ensure that the oven has reached the temperature and to avoid poor quality in the product. Next step is to remove the baked moist cake in an oven and cool down for 20 minutes prior to storage.

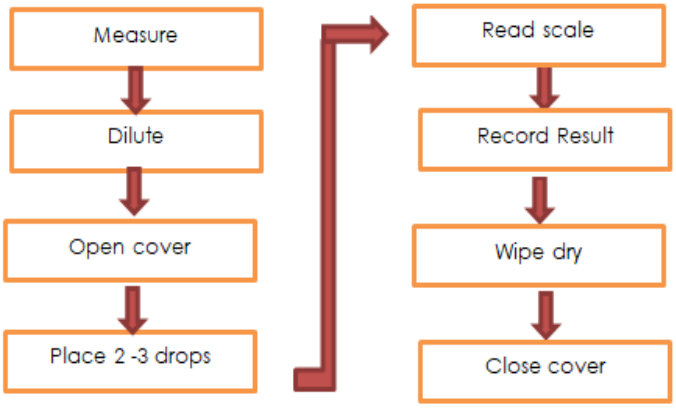


Figure 3. Determination of Total Soluble Solids

ISSN No:-2456-2165

Figure 3 shows the process in determining the total soluble solids of the developed product and it is determined by means of hand held refractometer. A sample was prepared by weighing 3.6 grams of the cake and dilute to 10ml of distilled water. Once the sample was mixed in the distilled water, open the cover of the refractometer and place two to three drops of the sample, afterwards close the cover. Quickly read the scale, the line on the top of the darker area. Then, readings should be taken to the nearest 0.1 percent. Afterwards, record the degree brix of the sample. Then, gently wipe dry the refractometer and close the cover slowly to avoid rupture on the prism

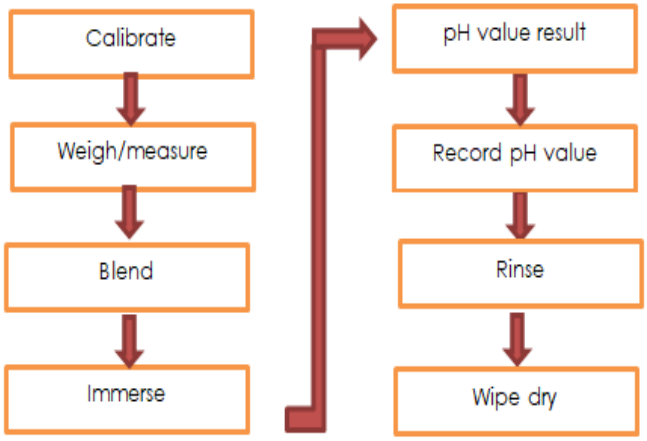


Figure 4. Determination of pH value (Glass electrode)

Figure 4 presents the process in determining the pH value of the developed product. pH meter was calibrated by immersing the electrode in buffer solution with pH 7,and wait for the meter to stabilize. Calibration is necessary to have accurate readings in the sample. After calibration, the meter was removed from the solution and clean it by rinsing with distilled water. Next step is to weigh 100grams of cake and measure 50ml of distilled water. Then, sample was placed in a blender, and blend for one minute or until the sample became slurry. Immerse the electrode end in the sample and wait for the pH value of the solution displayed on the screen. After that, record the pH value of the sample. Rinse the electrode with distilled water and wipe dry with soft tissue or a piece of cotton cloth.

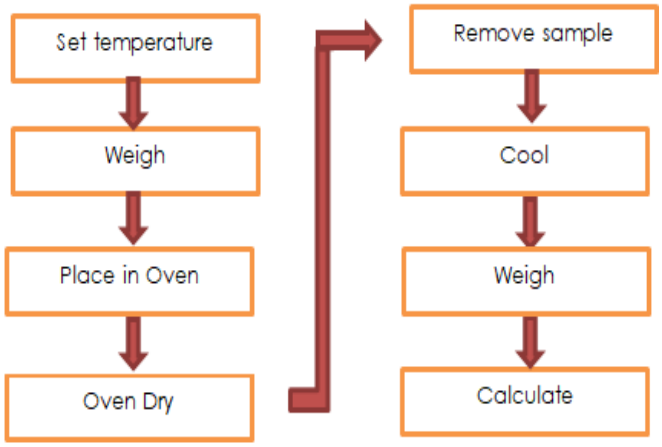


Figure 5. Moisture Content Determination (Oven Drying Method)

Figure 5 shows the method in determining percent moisture content of the developed product. These methods rely on measuring the mass of water in a known mass of sample. The moisture content is determined by measuring the mass of a food before and after the water is removed by evaporation.

First step is to set the temperature of the oven to 65ºC. Then, weigh 5.2258grams of the sample using analytical balance, afterwards place in an oven and dry for six (6) hours. Next, remove the sample in an oven and cool down for ten minutes. Weigh again the sample and compute for the percent moisture content. The percent moisture was calculated by the following formula below.

$$\%\text{Moisture} = \frac{M_{\text{INITIAL}} - M_{\text{DRIED}}}{M_{\text{INITIAL}}} \times 100$$

IV. RESULTS AND DISCUSSION

Table 1 demonstrates the grams and percentage of the three treatments made for Moist Cake Utilizing Pili Pulp and Pili nuts. Among the three treatments made, the percentage for the sugar, butter, evaporated milk, whole egg, pili nuts and vanilla is constant with a percentage of 14.68%, 11.01%, 11.01%, 8.56%, 3.06% and 0.31% correspondingly.

TABLE 1:- Weight and Percentage of Three Treatments made for Moist Pili Pulp and Pili nuts Cake

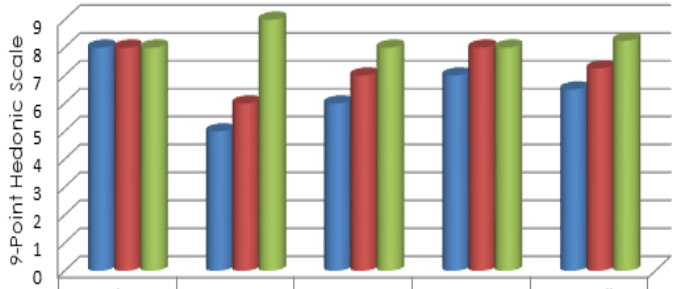
Ingredients	T1		T2		T3	
	grams	%	grams	%	grams	%
Cake Flour	588	35.96	504	30.82	480	29.35
Pili Pulp	252	15.41	336	20.55	360	22.02
Sugar	240	14.68	240	14.68	240	14.68
Butter	180	11.01	180	11.01	180	11.01
Evaporated Milk	180	11.01	180	11.01	180	11.01
Whole Egg	140	8.56	140	8.56	140	8.56
Pili Nuts	50	3.06	50	3.06	50	3.06
Vanilla	5	0.31	5	0.31	5	0.31
Yield	**941g**	**100%**	**941g**	**100%**	**941g**	**100%**

ISSN No:-2456-2165

Conversely, the other ingredient such as Cake Flour and Pili Pulp used differs in their percentage used. Treatment 1 specifies the percentage of cake flour is 35.96% while Pili Pulp is 15.41%.It can also be gleaned that in this treatment, cake flour has higher percentage than the pili pulp resulting to imperceptible Pili Taste and aroma. Treatment 2, amount of cake flour was lessened to 30.82% and Pili Pulp increased its percentage to 20.55%, yet the aroma and flavor of the pili characteristics is imperceptible. On the other hand, Treatment 3 shows that the percentage of cake flour was reduced to 29.35% and Pili Pulp increased to 22.02%. Moreover, the yield possesses the total weight of the recovered product with 941grams along the three treatments.

Among the three treatments, T3 has a higher percentage on the Pili Pulp used which is 22%.

Table 2. Sensory Evaluation Result for Moist Pili Pulp and Pili Nuts Cake



	Color	Aroma	Taste	Texture	Overall acceptability
T1	8	5	6	7	6.5
T2	8	6	7	8	7.25
T3	8	9	8	8	8.25

Table 2 illustrates the summary result of sensory evaluation of the three treatments using 9-Point Hedonic Scale rating sheet. Through scientific method sensory evaluation methods, each attribute can be measured and has a role to play in the final selection of a consumer product. Furthermore, sensory evaluation helps measure product quality. This is necessary in order to maintain uniformity of product characteristics. (Gatchalian, 1981)

Sensory attributes like color, aroma, taste and texture are perceived mainly by the human senses. In the three treatments sensory attributes in terms of color have the same weighted mean score of eight (8) which is interpreted as l*ike very much.* The color of the three treatments is brown to golden brown.

In terms of Aroma, T3 got the highest rating with a mean score of nine (9) which is interpreted as *like extremely*. In this treatment, aroma of the Pili fruit was noticeable while T2 got a weighted mean rating of six (6) which is interpreted as *like slightly* and T1 got a weighted mean rating of five (5) which is interpreted as *neither like or dislike* which is also the least accepted treatment hence Aroma of T1 and T2 is imperceptible.

The table also presents the respondents' sensory acceptability in terms of taste of the three treatments. T1 has the lowest weighted mean score of 6 which is interpreted as *like slightly* while T2 got a weighted mean score of 7 which is interpreted as *like moderately* and T3 got the highest weighted mean score rating of 8 which is interpreted as *like very much* results showed that T3 is the most accepted in the three treatments in terms of taste. The "pili fruit taste" in this treatment is perceptible.

For the texture, it showed that T2 and T3 got the same weighted mean score of 8 with the same interpretation of *like very much*, while T1 gained a weighted mean score of 7 which is interpreted as *like moderately*.

Overall acceptability defines the combination of all the different attributes together. In the given data**,** overall acceptability of the product showed that T3 was best preferred with an average rating of 8.25 which is interpreted as *like very much* than T2 with an average rating of 7.25 which is interpreted as *like moderately* and T1 with an average rating of 6.5 which is interpreted as *like slightly*. Therefore, along the three treatments, T3 is the most accepted product in the initial sensory evaluation.

V. CONSUMERS' ACCEPTABILITY TEST RESULT

A total of 200 respondents evaluated the samples. One hundred eight two (182) of the respondents rated the product as *like very much* and eighteen (18) rated the product *like moderately*. The Weighted mean score of the acceptability resulted to 7.91 which is interpreted as *like very much.* According to Resurreccion (1998) consumer testing is one of the most important activities in product development. The primary purpose of consumer affective tests is to assess personal response by current and potential customers of a product, product ideas, or specific product characteristics.

Table 3: Nutritional information

Components	Amount per 100g	% Daily Value
Calories	400	
Total Fat	30.4g	46.78%
Saturated Fat	8.24g	41.2%
Trans fat	0g	
Polyunsaturated fats	1.90g	
Total Carbohydrate	35.44g	11.81%
Dietary fiber	1.46g	5.84%
Sugars	18.49g	
Protein	6.80g	13.6%
Vitamin A		3.98%
Magnesium		19.5%

The table shows the Nutrition information of the Moist Pili Pulp and Pili nuts cake. Along with the data given, the product contains 400 calories; 30.4g total fat with a %DV of 46.78%; 8.24g saturated fat with 41.2% ; 0 transfat; 1.90g polyunsaturated fat; 35.44g total carbohydrate with 11.81% DV; 1.46g dietary fiber with 5.84% DV; 18.49g sugars;

ISSN No:-2456-2165

6.80g protein with 13.6% DV, vitamin A 3.95% and 19.5% of magnesium for 100 gram basis.

The nutritive value was computed based on the present nutrients of the ingredients per 100 grams basis, and then percent daily value was calculated by determining the ratio between the amount of nutrient in a serving of food and the required daily value for the nutrient. That is, divide either the actual (unrounded) quantitative amount or the declared (rounded) amount by the appropriate Daily Value. (USFDA, 2013)

In addition, the percent daily value are based on the Daily Value recommendations helps determine if a serving of food is high or low in nutrient. (USFDA, 2016).Thompson (2015) stated that the nutritional value of food defines what a food is made of and its' impact on the body.

Conversely, calorie, provide a measure of how much energy you get from a serving of food (USFDA, 2016). In the given data, consumer who would consume this product would get high calorie intake as to general guide of the calories. The amount of Total fat in the data is high but fat are an essential part of our diet and is important for good health, it's a major source of energy. It helps absorb some vitamins and minerals. Fat also is needed to build cell membranes, the vital exterior of each cell, and the sheaths surrounding nerves. It is essential for blood clotting, muscle movement, and inflammation (Harvard Health Publications, 2015). As for total carbohydrates, study.com (2003) stated that by consuming sufficient amounts of carbohydrates in your diet, it ensures that body can meet its energy needs. Also, dietary fiber contributes in the health balance diet of the body and performs important biological function (The Regents of the University of California, 2005). USFDA stated that dietary fiber should have at least 5% of caloric intake for a person consuming 2,000 calories daily, and the information stated is within the required amount. The computed value of sugar in the table pertains to naturally occurring sugars example of this is from milk and as well as those added to the food, it can also be seen that it has no reference value because there is no recommendations have been made for the total amount to eat in a day. Correspondingly, protein percent daily value account to 10% to 20% of the calories consumed each day (nutristrategy.com,2015) Protein is essential to the structure of red blood cells, for the proper functioning of antibodies resisting infection, for the regulation of enzymes and hormones, for growth, and for the repair of body tissue. Vitamin A and magnesium

Table 4: Chemical Analysis

PARAMETERS	TEST METHOD	TEST RESULT
Total Soluble Solids (TSS)	Refractometric	11ºBrix
pH value	pH glass electrode	5.49
% Moisture Content	Oven-Drying	8.70%

Table 5 presents the chemical analysis in terms of Total soluble solids (TSS), pH value and percent moisture content of the developed product. Chemical tests can detect changes in the product's quality throughout its shelf life (New Zealand Food Safety Authority, 2005). Results showed that Total soluble solids got 11 ºBrix which means each degree Brix is equivalent to 1 percent of sugar of a liquid and these soluble solids are primarily sugars; sucrose, fructose and glucose (Department of Agriculture and Food Australia ,2009).The pH of a food is one of several important factors that determine the survival and growth of microorganisms during processing, storage and distribution. In the data given pH value of 5.49 is within low acid food and easily spoiled by bacteria that is why proper handling and proper storage condition should be given.

On the other hand, moisture content of the product contains 8.70 percent; the amount of moisture present could affect microbial stability, because the susceptibility of microorganisms to grow depends on the water content. Also, moisture affects the stability of foods in terms of texture, taste and appearance (people.umass.edu)

VI. SHELF-LIFE ANALYSIS

Shelf-life analysis was determined through direct method. Internal features of the product color, aroma, taste and texture was observed by means of organoleptic method from day one to day fifteen. Shelf-life of the developed product stored at different temperatures would last three (3) days at room temperature and fifteen (15) days at chilled or refrigerated temperature.

Table 5: Shelf-Life Analysis under Room Temperature

Sensory Attributes	Test Method	DAYS		
		Day 1	Day 3	Day 4
Color	Organoleptic	Golden brown	Golden brown	Brown,
Aroma	Organoleptic	Characteristics aroma of Pili pulp and nuts cake	Characteristics aroma of Pili pulp and nuts cake	Characteristics aroma of Pili pulp and nuts cake, there is a slight

ISSN No:-2456-2165

Taste	Organoleptic	Characteristic taste of rich pili cake	Characteristic taste of pili rich cake	Slight rancid taste
Texture	Organoleptic	Smooth, no crumbs	Smooth, no crumbs	Slightly not compact
Appearance	Organoleptic	Characteristic appearance of loaf cake with slightly crack in the top portion.	Characteristic appearance of loaf cake with slightly crack in the top portion.	noticeable mold growth

Table 5 presents the data of the shelf-life determination of the developed product through direct method. The Direct method it involves storing the product under preselected conditions for a period of time longer than the expected shelf life and checking the product at regular intervals to see when it begins to spoil. Sensory attributes of the product were observed from Day 1 to Day 3. It can be gleaned that during the first to 3 days, there is no changes in the color, aroma, taste and texture of the product. However, in day 4 color was changed from golden brown to brown, taste changed from pili rich taste to slight rancid. Texture was also changed from smooth and no crumbs to slightly not compact. Also, for the appearance there is no change was observed from day 1 to day 3, however in day 4 noticeable growth of cottony like mold was observed. Therefore, shelf-life of the product was determined 3 days.

Table 6: Shelf-Life Analysis under Refrigerated Temperature

Sensory Attributes	Test Method	DAYS				
		Day 1	Day 5	Day 10	Day 15	Day 16
Color	Organoleptic	Golden brown	Golden brown	Golden brown	Golden brown	Golden brown
Aroma	Organoleptic	Characteristics aroma of Pili pulp and nuts cake	Characteristics aroma of Pili pulp and nuts cake	Characteristics aroma of Pili pulp and nuts cake	Characteristics aroma of Pili pulp and nuts cake	Characteristics aroma of Pili pulp and nuts cake
Taste	Organoleptic	Characteristic taste of rich pili cake	Characteristic taste of pili rich cake	Characteristic taste of rich pili cake	Characteristic taste of rich pili cake	Perceptible rancid taste
Texture	Organoleptic	Smooth, no crumbs	Smooth, no crumbs	Smooth, no crumbs	Smooth, no crumbs	Slightly tough
Appearance	Organoleptic	Characteristic appearance of butter cake with slightly crack in the top portion.	Characteristic appearance of butter cake with slightly crack in the top portion.	Characteristic appearance of butter cake with slightly crack in the top portion.	Characteristic appearance of butter cake with slightly crack in the top portion.	Mold growth is noticeable in the top portion of the cake.

Table 6 show the shelf-life evaluation under refrigerated temperature. It can be seen that there is no change in the sensory attributes of the cake in terms of color, aroma, taste, texture and appearance. However, in day 16 the color and aroma does not change but in terms of taste, rancid taste was perceptible, for the texture it became slightly tough and for appearance there is a mold gold in the top portion of the cake. Therefore, shelf-life of the product under refrigerated temperature was determined 15 days.

VII. CONCLUSIONS AND RECOMMENDATIONS

Based on the findings, the following results were concluded that nutrition information revealed that a 100 gram of Pili Pulp cake has 400 calories; 30.4g total fat; 8.24g saturated fat; 0 transfat; 1.90g polyunsaturated fat; 35.44g total carbohydrate; 1.46g dietary fiber; 18.49g sugars; 6.80g protein; 3.98% vitamin A and 19.5g of magnesium. The chemical analysis shows the following results: ph-5.49, total soluble solids- 11 brix and moisture content 8.70%. Outcome of the shelf life study revealed that the finished product will only last for three days if stored under room temperature but once refrigerated, the product will sustain for fifteen days provided it is stored in a properly sealed container or polyethylene bag. And consumer evaluation was conducted and among the 200 respondents one hundred eighty two (182) respondents evaluated the product as “liked very much” while eighteen (18) rated the product as “liked moderately”. Thus, the overall acceptability is 7.91 which is equivalent to like very much. Based from the conclusion, it is therefore recommended to improve product label and packaging, send samples for microbial analysis and production of moist pili pulp and pili nut cake to be introduced in the community

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