

Squash buchi

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The Philippines has lots of different kinds of foods to offer. Eating is one of the most popular hobbies of a Filipino. That is why at every street, there are people selling different kinds of foods. And because of that, it is not surprising that the food industry is one of the most popular businesses in the Philippines. Most of the Chinese Filipinos are ones who have businesses in the Chinese food and service restaurants. And because of that, Asian cuisine is a very popular dish in our country. In restaurants, they offer a 3-course meal; appetizer, main course, and dessert. And our focus here is one of the more popular Asian desserts; the Buchi or Jian Dui, which is mainly offered on some popular Asian cuisine restaurants.

Thus, the Buchi can not only be a popular dessert in restaurants, but it can also be part of a Filipino's daily meals. Even up to this day, Buchi remains to be a popular dessert and this food continues to evolve as new techniques and styles of cooking find their way into our country. It is also a guilt-free kind of dessert because it is healthy. And by using new techniques and innovation in this food it can be further improved. And to have that improving taste, we will add another filling in it; a fleshy nutritious vegetable food that is called squash. In this research, we have to make this food not only a simple dessert but to have a new-taste of a healthy Filipino delicacy

Background of the Study

Street food around Manila consists of mostly fried food. And one of these street foods is what we call "Buchi", it is very similar to the Chinese yum cha sweet sesame seed balls. In our country, these are usually sold stuffed with sweet mung bean paste. Buchi are sticky rice balls filled with sweet bean paste, rolled in sesame seeds and deep-fried to form a crunchy crust.

Buchi is a type of fried Chinese pastry made from glutinous rice flour. Glutinous rice is known as malagkit and milled glutinous rice is known as galapong. It is a simple deep-fried sweet dessert or snack treat. Buchi are commonly stuffed with mung bean paste. Mung beans are low in cholesterol and high in soluble dietary fibers.

It also contains protease inhibitors. Protease inhibitors slow the replication of certain cancer cells including those found in breast cancer. Protease inhibitors are known to block and prevent formation of tumor cells. In other studies, Mung beans are a low glycemic index food, which means the beans are a diabetic friendly food. Low glycemic foods promote healthy blood sugar levels.

People who eat foods that have a low glycemic index tend to have lower total body fat levels as opposed to those who consume high-glycemic foods, such as white bread and soft drinks. So it is really a Nutritious snack to eat. On the other hand, One cup of cooked calabaza squash flesh provides healthy carbohydrate energy, 2 grams of protein and less than 1 gram of fat within 76 calories if cooked without butter or oil.

These squash are actually vine fruits that most people use as vegetables in composing their meals. The AmericanDiabetesAssociation considers winter squash starchy vegetables, with all varieties averaging 18 grams of carbohydrates, of which 6 grams are dietary-fiber carbs. Calabaza and other winter squash have about half the carbs of other starchy vegetables, such as peas and corn.

If you are a diabetic or bodybuilder who counts carbohydrates, you'll still need to monitor your portion size of squash to stay inside your carb boundaries. It contains negligible fat and no measurable cholesterol. One cup of squash contains about 0.2 g of fat. Cutting down on your fat and cholesterol intake is a giant step towards helping reduce your risk of heart disease. It is also particularly high in concentrations of beta carotene and lutein.

Dietary lutein helps to prevent the onset of cataracts and macular degeneration, which often leads to blindness. A cup of squash provides about 135 micrograms of beta carotene and 2,400 micrograms of lutein. And it contains high levels of manganese and vitamin C. Manganese aids in maintaining healthy bone structure, calcium absorption, enzyme creation, and bone building. It also contributes to the mineral density of the spinal column.

Vitamin C aids in the production of collagen, which is essential for the building of bone mass, and magnesium is indispensable to the health of joints and bones. Iron, folate, zinc and phosphorous found in squash all contribute to the mineral health of bones, and help fortify against osteoporosis. Therefore, is Calabaza feasible to be used as a substitute for mung bean paste?

Statement of the Problem

The study will determine the acceptability of developed products using Squash as a Sub-Main Ingredient for the Buchi Filling. Specifically, the following questions were answered.

1. What is the optimum level of formulation of Squash as a Sub-Main Ingredient for the Buchi Filling in developed products? 2. What are the sensory attributes of the developed products in terms of the following organoleptic properties:

- 2. 1 appearance
- 2. 2 color
- 2. 3 texture
- 2. 4 aroma
- 2. 5 flavor
- 2. 6 general acceptability

3. Is there significant difference in appearance, color, texture, aroma, flavor and general acceptability of the developed products? 4. What is the theoretical nutritional and health contribution of the developed products? 5. What is the direct material cost of the developed products?

Hypothesis

There is no significant difference in the appearance, color, texture, aroma, flavor and general acceptability of the developed products.

Scope of the Study

The scope of our study is for the Filipinos who are engaged in eating Filipino snacks especially Buchi and the children who is not fond in eating nutritious foods like squash by providing them a snack which will fit their sweet tastes and at the same time the nutrients their body needs.

Significance of the study

The significance of this study is to innovate the common Buchi, by using a squash paste as a filling instead of mung bean paste. The main purpose of the researchers is to create a product that will satisfy both adult and children in having a food which is more delicious, sweet and at the same time healthier. This innovation will benefit those children's and adults.

Definition of Terms

Beta carotene – is a vitamin that acts as an antioxidant, protecting cells against oxidation damage. Beta carotene is converted by the body to vitamin A. Cataract – is a clouding of the lens inside the eye which leads to a decrease in vision. It is the most common cause of blindness and is conventionally treated with surgery.

Collagen – is the main structural protein found in animal connective tissue, yielding gelatin when boiled. Folate – is a B vitamin that is essential for cell growth and reproduction.

Glutinous rice – is a type of rice grown mainly in Southeast and East Asia, which has opaque grains, very low amylose content, and is especially sticky when cooked. Glycemic Index or Glycaemic Index, (GI) provides a measure of how quickly blood sugar levels rise after eating a particular type of food. Jian dui – is a type of fried Chinese pastry made from glutinous rice flour.

The pastry is coated with sesame seeds on the outside and is crisp and chewy. Inside the pastry is a large hollow, caused by the expansion of the dough. The hollow of the pastry is filled with a filling usually consisting of mung bean paste. Lutein provides nutritional support to our eyes and skin – the only organs of the body directly exposed to the outside environment.

Lutein has been linked to promoting healthy eyes through reducing the risk of macular degeneration. Mung or Moong Bean - is the seed of *Vigna radiata*, native to the Indian subcontinent, and mainly cultivated in India, China, Thailand, Philippines, Indonesia, Burma, Bangladesh, Vietnam, Laos and Cambodia, but also in hot and dry regions of Southern Europe and the Southern United States.

Protease - is an enzyme that breaks down proteins and peptides. Organoleptic properties - capable of detecting a sensory stimulus. Hedonic Scale - The term Hedonic Scale is used in foodscience, marketing research and tasting panels where the respondents indicate the extent to which they either like or dislike food. Sensory Attributes - To relate to a particular cause or source through the senses.

CHAPTER

II:

Review of Related Literature and Related Studies

HISTORY

OF

SQUASH

Our word "squash" came from the Massachuset Indian word askutasquash, meaning "eaten raw or uncooked." Although the Indians may have eaten some forms of squash without cooking, today we like our squashes cooked. The late-growing, less symmetrical, odd-shaped, rough or warty kinds, small to medium in size, but with long-keeping qualities and hard rinds, are usually called winter squash. They belong, almost without exception, to the species *Cucurbita maxima* or *C. moschata*.

The small, quick-growing forms that are eaten before the rinds and seeds begin to harden are called summer squash and belong to the species *C.*

pepo. Pumpkins also belong to that species, but large, late, smooth, symmetrical forms of *C. maxima* and *C. moschata* are sometimes called "pumpkins" regardless of species. The word "pumpkin" -improperly pronounced "punkin" by most Americans, including myself- is derived from the old French term *pompion*, meaning eaten when "cooked by the sun," or ripe. In modern French, pumpkin is called *potiron*. (<http://aggiehorticulture.tamu.edu>)

USES OF SQUASH

The uses of Squash are the young shoots, flowers and fruits are used as vegetables, matured can be made into pies and other delicacies, seeds of mature fruits can be boiled in salted water, dried like water-melon seeds, roasted and used as snack food.

NUTRITIONAL FACTS ABOUT SQUASH

All varieties of squash are rich in carotene. Carotene has been proven to be beneficial at preventing cancer and lung disease. The carotene from squash can also help prevent high blood pressure, heart disease, and type 2 diabetes. In the summer months, the health benefits of squash include protecting against the damaging effects of sun exposure and preventing dehydration. The juice from summer squash has also been proven to be just as effective as some varieties of winter squash in preventing cell mutations in the protection against cancer.

Since both winter and summer squash varieties are rich in B vitamins, they can also help to reverse many of the damaging effects of stress on the body and further prevent other types of illness. Squash is also a good source of vitamin C, which helps to boost the immune system, prevent colds, and help

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fight allergies. The rinds of many squash are also a good source of fiber, which aids in proper digestion and is a vital element in preventing many types of disease. It is important if you eat squash to also eat the peel or rind. (<http://health.wikinut.com>)

Economic Production of Squash

It is usually grown in home gardens and in 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. For best yield and profit, planting months must be from October to December, and May to July in hilly areas.

Land Preparation

Plow and harrow the field alternately 2-3 times. Furrow the field at a row spacing of 2 meters. Prepare hills at 1 meter apart. Incorporate organic fertilizer and complete fertilizer thoroughly with the soil at planting.

Planting

Plant 2-3 seeds per hill. Remove weak seedlings and leave two plants per hill when the first true leaf has developed.

HISTORY OF MUNG BEAN

The mungbean, *Vigna radiata* (L.) Wilczek has been grown in India since ancient times. It is still widely grown in southeast Asia, Africa, South America and Australia. It was apparently grown in the United States as early as 1835 as the Chickasaw pea. It is also referred to as green gram, golden gram and chop suey bean. Mungbeans are grown widely for use as a human food (as

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dry beans or fresh sprouts), but can be used as a green manure crop and as forage for livestock. Virtually all the domestic production of mungbean is in Oklahoma. Fifteen to twenty million pounds of mungbean are consumed annually in the United States and nearly 75 percent of this is imported. (<http://www.hort.purdue.edu>)

NUTRITIONAL FACTS OF MUNG BEAN

Basic Nutrition Facts

Mung beans are extremely low in calories, with 1 cup of mature sprouted seeds containing only 31 calories per serving. A serving also contains 1.9 grams of dietary fiber, or 8 percent of your daily value based on a 2,000-calorie diet. Fiber helps you feel full, so mung beans make a good low-calorie snack to ward off hunger pangs in between meals, particularly if you're watching your weight. A serving of mung beans contains almost no fat at 0.19 grams per serving, only 6 milligrams of sodium and 5 percent of your daily value of iron. Powerful Protein

Protein is a vital part of any healthy diet because the body uses protein to repair and renew cells. As the body breaks down protein, amino acids are left that help the body break down food further. While meat, dairy products and eggs are all high in protein, these sources can also be high in cholesterol, and they aren't an option for people following a vegan diet. Mung beans contain 3.2 grams of protein per 1 cup serving. Interviewed on the "Today" show, Madelyn Fernstrom, director of the Weight Management Center at the University of Pittsburgh Medical Center, recommends that you strive for

about 0.4 grams of protein per pound of body weight each day.

Considerable Vitamin C

A 1-cup serving of mung bean sprouts contains 23 percent daily value of vitamin C based on a 2,000-calorie diet. It's essential to get enough vitamin C in your daily diet because the body does not store it. The vitamin is an antioxidant that helps protect the body against damage from free radicals. It also helps the body produce collagen, necessary for skin, cartilage, ligaments and wound healing. Vitamin C serves a protective function, helping prevent heart disease and high blood pressure. Kick Up the Vitamin K

Mung beans are rich in vitamin K (Vitamin K is known as the clotting vitamin, because without it blood would not clot. Some studies suggest that it helps maintain strong bones in the elderly.), with a 1-cup size serving of sprouts containing 43 percent daily value. While vitamin K isn't as widely publicized as other vitamins, it's still important. The body stores vitamin K in the liver and fatty tissue, but replenishing through diet is necessary, particularly if you have liver disease, gallbladder disease, celiac disease or are taking blood thinners. The vitamin helps keep your bones healthy and helps your blood clot normally. <http://www.livestrong.com>

DIFFERENCE BETWEEN PUMPKIN AND SQUASH

According to some studies and sites the researchers have visited the difference between Pumpkin and Squash is that the Pumpkin is generally used for carving and is always used to design during Halloween because of its very thick skin while the Squash is primarily used in cooking and is eaten raw or cooked.

Season Chart for the production of Squash in the Philippines

CHAPTER

III:

Methodology

Research

Design

The researchers used an experimental design in conducting their research. An experimental design is a study design used to test cause-and-effect relationships between variables. The classic experimental design specifies an experimental group and a control group. The independent variable is administered to the experimental group and not to the control group, and both groups are measured on the same dependent variable. Subsequent experimental designs have used more groups and more measurements over longer periods.

True experiments must have control, randomization, and manipulation. The researchers have conducted sensory evaluation and randomly selected students from World Citi Colleges to evaluate our finish product which are Lot 1(100% mung beans paste filling), Lot 2 (50% mung bean paste filling, 50% squash paste filling), Lot 3 (60% mung beans paste filling, 40% squash paste filling), Lot 4 (70% mung beans paste filling, 30% squash paste filling)

Statistical

Treatment

of

Data

Sensory

Evaluation

The 7 and 9 Hedonic Scale was used to assess the developed bakery products.

The 7 - Hedonic Scale was used to evaluate the appearance, color, texture and aroma of the developed bakery products while the 9 - Hedonic Scale

was utilized to assess the flavor and general acceptability of the said product. Statistical Treatment

The Analysis of Variances (ANOVA) was used to determine significant differences between and among the sensory attributes of the developed bakery products.

Experimental

Procedures

Ingredients:

1	1/2	cups	glutinous	rice	flour
3/4		cup		water	
1/8		tsp		salt	
Sweet		mung	bean		paste
sesame			seeds		
cooking oil					

Procedures:

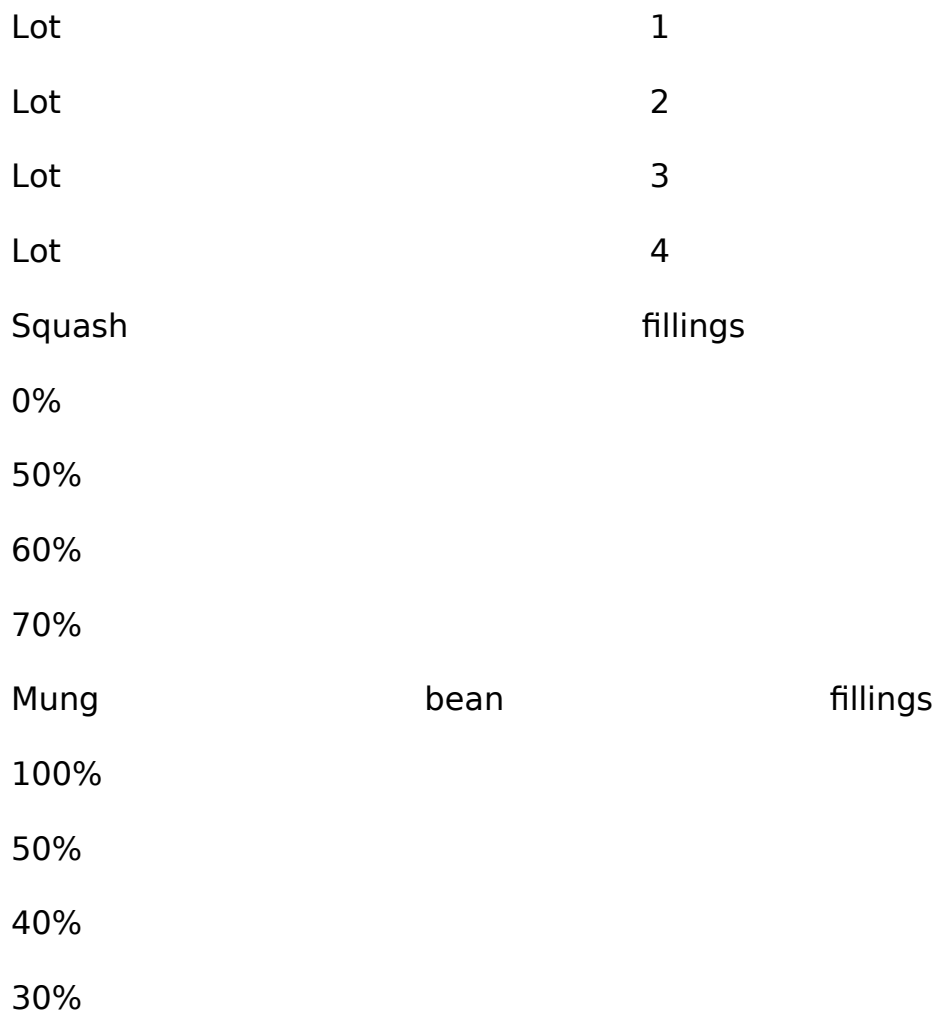
1. Mix the flour, salt and water together in a bowl. Knead together just enough to form into a dough.
2. Divide the ball into small pieces and shape it into a ball then flatten the middle of the dough with your thumb. Spoon 1 tablespoon of sweet red bean paste into the middle of the dough.
3. Wrap the dough around the bean paste. Pinch the edges together to seal and roll it until the shape is round.
4. Roll the shaped dough over the sesame seeds.
5. Heat the cooking oil in a deep pan. (350 deg F)
6. Fry the balls in batches in the hot oil until golden brown.

CHAPTER IV

Presentation, Analysis and Interpretation

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To ensure the exact measurement of the filling, the researchers used percentage as their measurement.



It can be compared that Squash is richer in vitamins A(80%), and Vitamin C(10%), while mung bean is richer in Calcium(2%), Iron(7%), and in Magnesium(12%). While both of them gives 5 percent of Vitamin B-6.