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Garlic Candy: A Product Development Research

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ABSTRACT

Food plays a vital role to life by giving energy needed by the human body. But too much consumption may lead to diseases. Filipinos are known for their enjoyment of food. Almost 55% of the total population suffer from cholesterol issues and 35% of it died with hypertension. Multiple meta-analyses revealed that garlic help decrease blood pressure, and pressure-lowering impact is physiologically feasible. Garlic contains active sulfur compounds that proven to influence endothelium-relaxing and -constricting factors, resulting lower blood pressure. The study aims to formulate garlic candy in terms of ingredients, proportions, resources, and equipment. The main ingredient for this study was garlic known for lowering the high blood pressure. Other ingredients are milk, sugar, flour and artificial color to improve its appearance. The researchers perform three trials and error basis to determined which aspect of the output seeks improvement. By that they recorded the proper formulation for the garlic candy which based on the following; (1) aroma, (2) taste, (3) appearance and (4) texture. Using a developmental research, the result of the study has been recorded the following; the output has the percentage of 3.02 in terms of aroma, 3.30 in terms of taste, 3.12 in terms of appearance, 3.18 in terms of texture. After the evaluation the following are recorded; composite mean of 3.16% indicating the acceptable verbal interpretation, 6.95% for the protein, 6.77% for the total fats, 2.06% for the calcium, 18.65% for the allicin and 2.69% for the Vitamin B which are agent I lowering hypertension.

INTRODUCTION

In the Philippines, there are many kinds of foods and delicacies which are known for its taste and mouth watery smell. Filipinos are known for their unique cuisine which is known locally and in abroad. There are various dishes that can only be found in the country. In fact, Philippines is known for its festivals and occasions which would not be complete without an abundance of foods. Like for example, fiestas and other celebrations in the country are commonly celebrated with foods.

Food plays a vital role to human life. Without food, human cannot survive. It provides energy that the human body requires. It also provides vitamins and minerals that support one's health. But too much intake of such food types will lead to illnesses. One of the conflicts that meat lovers face is too much cholesterol. Meat contains too much cholesterol, particularly pork and beef, which can lead to hypertension. In a survey, almost 76% of the total the world population have problems with hypertension and 8% of it came from the Philippines. In the country, almost 55% of the total population suffer from cholesterol issues and 35% of it died with hypertension.

Moreover, hypertension is the reaction of the human body due to many underlying problems.body which came from excessive consumption of meat and even carbohydrates. One's body will suffer fatigue, poor heat resistance and, worse, die without adequate diet and exercise. Almost 43% who suffer from hypertension are 35-40 years of age and 21% are 29-34 years of age and 10% from 28 years of age and below. But hypertension can be prevented in many ways. One of them is through herbal medicines that can be found at home. People must know that one of the main preventive herb in hypertension found in the kitchen is a garlic. It contains natural oil which fights the toxins that came from foods high in cholesterol. Also, it is known for having good results in decreasing the effects of hypertension. But some people choose to maintain their medicines as maintenance for hypertension because garlic doesn't taste good and smell as well. Few people only use garlic to prevent hypertension. Because of its unpleasant odor and taste, people especially children will not eat it as ease. Meanwhile milk and sugar, two agents of sweets are known for having good taste and smell. Milk is known for its calcium, vitamins and minerals content. It gives more aroma to the foods when cooked. It also suited for the modern taste of people nowadays. Sugar also adds flavor to foods. It is also known as preservative agent of delicacies especially sweets. Sweets like candies are more convenient to carry inside our pouches, bags and even inside the vehicles because of its size. The three ingredients are commonly found inside the house.

With the problem stated above, the researcher come up with the development of candies made from garlic which may help prevent or lessen the chances of contracting hypertension.

OBJECTIVES

The main purpose of this study is to develop candy made from garlic as major ingredient to prevent or lessen the chances of contracting hypertension. Specifically, this study aims to:

1. Determine the formulation/formula needed in

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producing garlic candy in terms of:

1.1. Materials and Equipment

1.2. Ingredients and its Proportion

2. Determine the level of acceptability in terms of:

2.1. Aroma;

2.2. Taste;

2.3. Appearance;

2.4. Texture

3. Determine the nutritional content.

4. Determining the labelling and packaging.

MATERIALS AND METHOD

Evaluation of the existing material to lower blood pressure

Through books, journals and electric source, the researchers gathered data to evaluate the existing alternative material that lowers blood pressure which is the raw or uncooked garlic. The research applied developmental research because the researchers created a product that would help prevent or lessen hypertension and at the same time will capture the taste buds of patients suffering from the said illness. A garlic candy which is new in the market and the first to make garlic into a delicacy. It took time to make this new flavor garlic candy that was measured with a proper proportion of every ingredient. The researchers gathered data will serve as basis of ideas to develop the ideas for the garlic candy. The researchers will evaluate the existing alternative material that may lessen the effect of hypertension by checking the physical appearance, measuring the sizes, taste and the smell to get some ideas that can be used as a guide to gather sufficient information especially the results. The evaluation also includes observation from the existing alternative material that lessen the effects of hypertension to body which is the garlic. Raw materials were considered critically to ensure the development of the project.

Most importantly, the existing materials was evaluated for the researchers to gain information and find out if the study would be viable. From the evaluation of existing alternative material, the researchers will recognize other areas that need further enhancement.

Design Stage

Evaluation of the existing alternative material that lessen the effects of hypertension to human body will serve as reference for the development of garlic candy. The researchers will contribute every idea of the group member in order to come up a good design of the garlic candy. In designing the garlic candy, the researchers gathered ideas and data as the bases in making the proposed candy.

Material Selection Stage

On this stage, the selection of materials was done. In selecting the proper tools and materials to be used in developing the formula and candy, the researchers asked queries from other candy makers, research from the internet of what materials are used. Then, the researchers also determined the availability of the materials through canvassing to identify the cost needed for the ingredients and materials to project the total cost of the output. Since it is pandemic, the researchers also considered the cheapest but quality materials to be used. They also think for the alternative materials to be used in making the candy. After that, they look for a good quality raw material that is affordable and available in the market instead of buying garlic per piece they bought the garlic in kilo so that the consumption of money will be lessen. The milk which can be bought in powdered or milk came from the sales with big discounts found in supermarkets as well as the sugar.

Development Stage

This stage was the development of the garlic candy. The garlic candy was done in a simple way without forfeiting the quality of it. All ingredients were affordable but taste good when combined. The procedure starts with preparation of the ingredients and materials that will be needed to produce a candy. The researchers slice the garlic into small strips, dried and grind it in the blender. The all- purpose flour, condensed milk, sugar and skim milk were put in the casserole to be heated and dissolved. Once the garlic is powdered, they mixed it in a clean bowl together with the mixture. It would be molded by the use of spoon and gloves to assure the cleanliness and safety for health. Finally, the candy was wrapped in a plastic (pastillas wrapper) with different colors. In developing the said output, all safety precautions regarding the use of the tools and materials were strictly observed and dish is excellent or very poor on a systematic good-poor scale for a series of statements.

RESULTS AND DISCUSSION

Candy

1. The Formulation in Developing Garlic
2. Materials and Equipment

The researchers came up with the suitable ingredients and equipment in making garlic candy after reading related literatures on the importance of garlic in treating hypertension and obtaining ample information on the production of related products. The mat erials and equipment used by the researchers were identified to be appropriate to the development of garlic candy. The following materials are:

Table 1: Meterials Used in Developing Garlic Candy

Name	Picture	Function
Mixing bowl		Round bowls used to mix ingredients
Working Table		Used to prepare food, cooked or uncooked
Dry Measuring Cup		Used to measure the dry ingredients. Usually include ¼, ⅓, ½ and 1 cup.

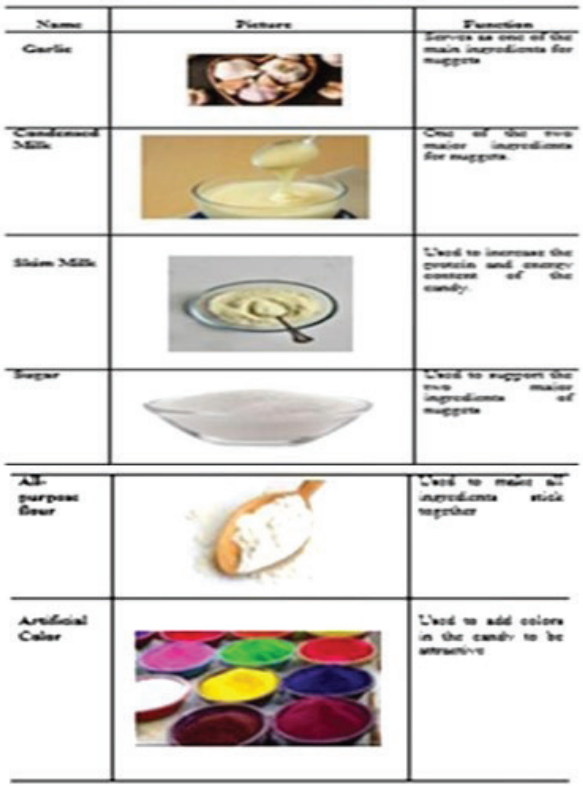
Testing and Evaluation of the Garlic Candy

The study was tested and evaluated by observing, touching, tasting and smelling the output. This was done to examine the acceptability of the garlic candy.

The researchers give an evaluation sheet to 10 Batangas State University Balayan teachers to assess the suitability of the formula, which possess various attributes including certain size, color, taste, and smell.

Likert scale was used in the evaluation sheet for it is the most widely used approach in scaling responses. Evaluation sheet contains different attributes such as size, color, taste and smell. The score was then used to identify the specific quality –highly acceptable (5), acceptable (4), average (3), Unacceptable (2), and highly unacceptable (1) respectively. In responding to a Likert Scale, the respondents specified if the formula Weighted mean is used in the study to determine the interpretation of the result. The responses were given equivalent weighted values which 1 as the lowest and 5 as the highest value. The corresponding verbal interpretations for each value were also provided.

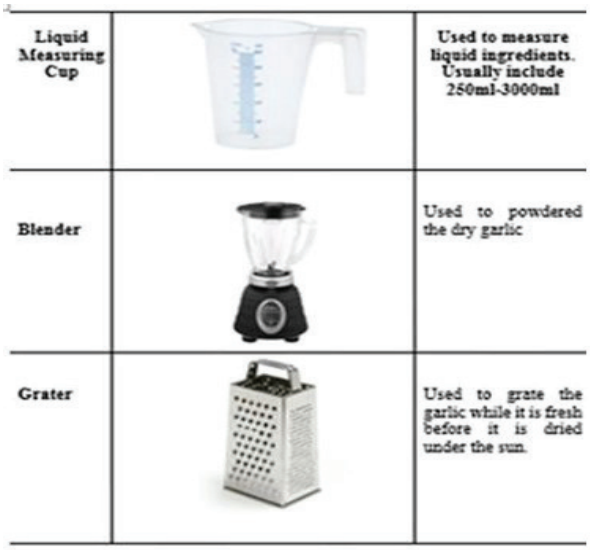
Table 2: Ingrediance in Developing Garlic Candy



Ingredients

The table below represents the ingredients needed to develop the garlic candy. Prior to coming up of the ingredients and materials listed below, the researchers had a hard time in the trial and error method. The researchers have come up with the ingredients based on the researches and the related articles they gathered.

Table 3: Ingrediance of Developing Garlic Candy



Proportion of Ingredients

It presents the proportion of ingredients in developing garlic candy. Through 3 experiments, the researchers perform trial and error basis and the researchers determined the right proportion of ingredients in developing garlic candy. The right proportion of the garlic candy according from the three trials were: garlic with 80 grams and must be powdered, condensed milk with 390grams, skim milk powder for 30 grams, refined sugar for 10 grams, all purpose flour for 25 grams, and artificial food coloring for 3 grams.

Table 4: Proportion of Ingredients used in Experiments

Ingredients	Experiment A	Experiment B	Experiment C	Specification
Garlic	100g	80g	90g	Powder
Milk	380g	390g	400g	Condensed
Skim Milk	20g	30g	40g	Powder
Sugar	6g	10g	5g	Refined
All-purpose Flour	15g	25g	35g	Powder
Artificial Color	6g	3g	2g	Powder

Experiments A, B and C

This includes the proportioning of different ingredients in developing garlic candy.

The researchers applied the gathered information about the proportion of the ingredients. The researchers conduct series of experiments to come up to the best result the evaluators will accept. Table 3 shows the different proportion of ingredients in three experiments the researchers have conducted. In Experiment A, the researchers used 100 grams of powdered garlic, 380 grams of condensed milk, 20 grams of skim milk, 6 grams of sugar, 15 grams of all-purpose flour and 6 grams of artificial color. The size of the candy was 3 inches in length and 1 inch in width, color was so bright and the garlic exudes so much aroma in the candy. It then resulted to less acceptable attributes in terms of aroma and appearance.

Meanwhile, Experiment B was conducted. In this experiment, the researchers use 80 grams of powdered garlic, 390 grams of condensed milk, 30 grams of skim milk, 10 grams of sugar, 25 grams of all-purpose flour, and 2 grams of artificial color. The size of the candy is 1inch in length and 1 inch in width, the color is not too bright and not too pale. The smell of the garlic does not trace anymore, and the taste is not too sweet. The texture of the candy was good it melts easily. The researchers found out that certain adjustments to the proportion of ingredients can enhance the product. The result is all acceptable in terms of aroma, appearance, taste and texture.

Finally, Experiment C was also conducted. In Experiment C, the researchers use 90 grams of garlic powder, 400 grams of condensed milk, 50 grams of skim milk, 5 grams of sugar, 35 grams of all-purpose flour and 2 grams of artificial color. The size of the candy which is 2inches in length and 1inch in width. The result is less acceptable in terms of appearance. The three major ingredients in developing the garlic candy are sugar, milk and garlic.

According to Ehécatl M. A. García-Trejo Abraham S. Arellano-Buendía, Raúl ArgüelloGarcía, María L. Loredo-Mendoza Fernando E. García-Arroyo, Mónica G. Arellano-Mendoza, MaríaC.Castillo-Hernández,Gustavo Guevara Balcázar, Edilia Tapia, Laura G. Sánchez-Lozada, and Horacio Osorio-Alonso, (2016) when sugar is added to foods it binds to the water in the foods reducing the amount of water that is available for the growth of microorganisms. Like salt water also has an osmotic effect i.e. when foods are placed in a concentrated sugar solution water is drawn out of the cells of foods and microorganisms so that microorganisms can no longer survive. Different ways of using sugar to preserve foods are described fully in chapter 6. One way to use sugar is to desiccate fruits by drying them and then packing them with pure sugar. Fruits which are traditionally preserved through this method include ginger, cherries and the peel of citrus fruit. Alternatively, foods may be stored in a sugar syrup or cook in sugar until they crystalize.

According to Effat Ara Jahan, Dr. MD Bellal Hossain, (2016), milk candy contains calcium with other essential nutrients, which make it a potential food supplement for adults and children. The present study was designed to characterize the sensory properties of flavored milk candies. A trained panelist evaluated three milk candies (plain, chocolate, and coffee) using a 15-cm line scale. Three hundred and thirty-five adult consumers evaluated the acceptability of three types flavored milk candy on the basis of appearance, shape, texture, aroma, flavor, sweetness, and overall liking. Ninety-two children evaluated the acceptability on the basis of overall liking of chocolate and plain flavored milk candies. Evaluations of the flavored milk candies revealed that they were different, based on descriptive sensory attributes. Buttery aroma and caramel aroma were considerer's discriminating attributes, while sweet and cooked flavors were considerer's least discriminating. Taste, specific flavor, overall liking and aroma were the critical factors for acceptability of the products. Children liked the chocolate flavored milk candy better than the plain one. There were no significant differences between evaluation by children and adults for chocolate and plain milk candy respectively. It was observed that the consumers accepted the calcium enriched flavored milk candies.

According to the study of Karin Ried, Peter Fakler, (2014) garlic supplements have shown promise in the treatment of uncontrolled hypertension, lowering blood pressure (BP) by about 10 mmHg systolic and 8 mmHg diastolic, similar to standard BP medication. Aged garlic extract, which contains S-allylcysteine as the bioactive sulfur compound, in particular is standardized and highly tolerable, with little or no known harmful interaction when taken with other BP-reducing or blood- thinning medication. Here we describe biologically plausible mechanisms of garlic's BP-lowering effect. Garlic-derived polysulfides stimulate the production of the vascular gasotransmitter hydrogen sulfide (H_2S) and enhance the regulation of endothelial nitric oxide (NO), which induce smooth muscle cell relaxation, vasodilation, and BP reduction. Several dietary and genetic factors influence the efficiency of the H_2S and NO signaling pathways and may contribute to the development of hypertension. Sulfur deficiency might play a part in the etiology of hypertension, and could be alleviated with supplementation of organosulfur compounds derived from garlic.

Procedure

It presents the step by step procedure in developing garlic candy. The researcher used trial and error basis in order to achieve the desired procedure in developing the garlic candy. The procedure starts with preparation of the ingredients and materials that will be needed to produce a candy. The researchers slice the garlic into small strips, dried it and grind it in the blender. The all-purpose flour, condensed milk, sugar and skim milk were put in the casserole to be heated and dissolved. Then pulverized the garlic and combined it with the mixture in a clean bowl. To ensure cleanliness and health safety, it would be molded with a spoon and gloves. Finally, the candy was wrapped in a variety of colored plastic (pastillas wrapper). The result of the three set of candy were differ in terms of Aroma, Appearance, Taste and Texture of the candy.

Level of acceptability It presents the result of evaluation to determine the level of acceptability of the candy made with garlic in terms of aroma, appearance, taste, and texture. It also covered the composite mean, and weighted with its verbal interpretation.

Table 5 shows the result of three experiments that have different proportions of the ingredients needed in developing garlic candy, the respondents of the study rate the experiments in terms of aroma, taste, appearance and texture. In the first experiment, having its proportions as discuss in table 4, it resulted with a weighted mean in terms of: aroma having the

Table 5: Results of the three experiments in term of aroma, taste, appearance and texture

ATTRIBUTES	EXPERIMENT SAMPLES					
	Experiment A		Experiment B		Experiment C	
	Weighted Mean	Verbal Interpretation	Weighted Mean	Verbal Interpretation	Weighted Mean	Verbal Interpretation
Aroma	2.28	Unacceptable	3.02	Acceptable	2.64	Acceptable
Taste	2.80	Acceptable	3.30	Acceptable	3.20	Acceptable
Appearance	2.46	Unacceptable	3.12	Acceptable	2.38	Unacceptable
Texture	2.72	Acceptable	3.18	Acceptable	2.58	Acceptable
Composite Mean	2.57	Acceptable	3.16	Acceptable	2.70	Acceptable

weighted mean of 2.28 with the verbal interpretation of unacceptable, taste with 2.80 weighted mean having the verbal interpretation of acceptable, 2.46 weighted mean in terms of appearance with the verbal interpretation of unacceptable and texture with 2.72 weighted mean and acceptable verbal interpretation. All in all, the composite mean of Experiment A is 2.57 and acceptable verbal interpretation. Though in the first experiment, the proponents got high score for the garlic candy except in terms of aroma and appearance.

The weighted mean of the weighted mean in the second experiment, which similarly includes all of the materials needed to make garlic candy and has its measurements as discussed in table 3, was: Aroma has a weighted mean of 3.02 and a verbal interpretation of acceptable, taste has a weighted mean of 3.30 and a verbal interpretation of acceptable, and appearance has a weighted mean of

3.12 and a verbal interpretation of acceptable and texture with 3.18 weighted mean and acceptable verbal interpretation. All in all, the composite mean of Experiment B is 3.16 and acceptable verbal interpretation. The second experiment got the highest score for having verbal interpretation in all aspect of the candy.

In the last experiment which has all ingredients needed in developing garlic candy, having its measurements as discuss in table 3 result with the weighted mean in terms of: aroma having the weighted mean of 2.64 with the verbal interpretation of acceptable, taste with 3.20 weighted mean having the verbal interpretation of acceptable,

2.38 weighted mean in terms of appearance with the verbal interpretation of unacceptable and texture with 2.58 weighted mean and acceptable verbal interpretation. All in all, the composite mean of Experiment C is 2.70 and acceptable verbal interpretation. Though in the third experiment, the proponents got high score for the garlic candy except in terms of appearance.

Nutritional Content

Table 6: Nutritional Content of Garlic Candy

Nutrients	Method of Analysis	Result (%)
Protein	Kjeldahl	6.95%
Fat	Randall e	6.77%
Calcium	Randall e	2.06%
Allicin	Kjeldahl	18.65%
Vitamin B	Randall e	2.69%

Specifically, the nutrients found in garlic candy are as follows:

Protein

Protein (6.95 %) which helps reduce appetite and hunger levels. A high-protein diet reduces hunger, helping you eat fewer calories. But it is also recommended that people must not consume protein too much because most people already eat around 15% of their calories from protein, which is more than enough to prevent deficiency.

According to Kris Gunnars et al (2019), protein consumption helps as an appetite suppressant and control hunger. Also, a diet that is high on protein helps reduce calorie intake. As a result, weight- regulating hormones are therefore improved. Protein also helps improve muscle mass and strength since muscle is mostly made of protein. Therefore, high consumption of protein can help in gaining muscle mass and strength whereas reducing muscle loss during weight loss. It is also good for bones, boost metabolism, and maintain blood pressure. It does not cause damage to healthy kidneys, aids your body in repairing itself after an injury and helps you stay in shape as you get older. The study also recommend that people must not consume protein too much because the majority already eats about 15% of their calories from protein, which is more than sufficient to avoid deficiency.

Fat

Fat (6.77%) which helps give human body energy, protects organs, supports cell growth, keeps cholesterol and blood pressure under control, and helps the body absorb vital nutrients.

According to Dr. F. Joung et al. (2018), fat serves to provide energy to the human body, strengthens tissues, promotes the growth of cells, regulates cholesterol and blood pressure, and helps the body consume essential nutrients. When you concentrate too hard on taking out all the fat, it can potentially rob the body of what it most needs.

The study also concludes that the more recent Dietary Guidelines have stepped away from recommending a particular level of fat for Americans. They also focus, however, in keeping the consumption of trans fat to less than 10 percent of total daily calorie intake.

Calcium

Calcium (2.06%) which helps maintain strong bones and carry out many important functions. But it can be harmful if consumed too much and may cause constipation. The recommended consumption of calcium is 5 to 10% a day.

According to National Institutes of Health et al. (2011), a mineral common in many foods is calcium. To sustain healthy bones and to carry out many essential tasks, the body requires calcium. In bones and teeth, almost all calcium is processed, where it strengthens their structure and hardness. Calcium is often needed by the body for muscles to move and for nerves to pass signals from the

brain and any part of the body. Calcium is also used to help blood vessels transport blood throughout the body and to help release hormones and enzymes that influence almost all human body activity.

The result of the study revealed that calcium can be harmful if consumed too much, it may cause constipation. The recommended consumption of calcium is 5 to 10% a day.

Allicin

Allicin (35.65%) which helps reduce inflammation and offer antioxidant benefits. According to Cathy Wong et al. (2020), when garlic is crushed or sliced, Allicin is a compound made. It is available in the form of dietary supplements that has been found to minimize inflammation and provide antioxidant benefits. It is said that taking Allicin supplements helps with a variety of health issues, as well as battling major diseases such as diabetes, especially high blood pressure and cancer. The result of the study also indicates that Allicin can help blood pressure regulation and atherosclerosis prevention. Clinically significant reductions in both systolic and diastolic blood pressure over the placebo and atenolol classes were also seen as a result of Allicin. The suggested consumption of Allicin is 5 to 25% in regular eater.

Vitamin B

Vitamin B (2.69%) plays a vital role in maintaining good health and well-being. According to Natalie Olsen, R.D et al. (2019), in retaining optimum health and well-being, B vitamins play a critical role. B vitamins have a significant effect on the energy levels, brain activity, and cellular metabolism as the key components of a healthy body. The vitamin B complex helps avoid infections and helps maintain or stimulate cell health, red blood cell formation, energy levels, proper nerve function, healthy brain activity, cardiovascular health, development of hormones and cholesterol, healthy appetite, good digestion, good eyesight, and muscle tone. The study also resulted to: in women, B vitamins are particularly essential for pregnant and breastfeeding mothers. It greatly assists with the development of the fetal brain as well as decrease the risk of birth complications. And B vitamins can improve energy levels for pregnant women, relieve nausea, and lessen the likelihood of developing preeclampsia. For men, B vitamins are believed to increase the amount of testosterone levels, which declines normally with age. It can also assist men to build muscles and improve strength. Human experiments supporting these arguments are, however, insufficient.

Development of appropriate packaging and labelling of the product

From the concepts and ideas present in the same products available in the market, the researchers were able to conceptualize their packaging and labelling. The researchers include the main ingredient of their product in front cover and also the image of the product itself with its name and the words "Sweet & Healthy" to emphasize its main purpose of not just satisfying the sweet tooth of consumers but definitely improving their health conditions

Figure 3: shows the overall cover of the packaging

Table 7: Cost of Materials Incurred in the Garlic Candy

Quantity	Unit	Description	Unit Price (PHP)	Total Price (PHP)
1	Kilo	Garlic	180. 00	180. 00
3	Kilo	Sugar	50.00	150. 00
½	Kilo	Skim milk	160.00	80.00
5	Can	Condensed milk	45.00	225.00
Total				**635.00**

Evaluation of the developed garlic candy

The researchers used Likert Scale to interpret the level of acceptability in terms of different attributes such as: aroma, taste, appearance and texture.

Table 8: Results of Evaluation in Terms of aroma

Attributes	Weighted Mean	Verbal Interpretation
Aroma	2.65	Acceptable

This table shows the evaluation of garlic candy in terms of aroma has the weighted mean of 2.65 and emphasizing the verbal interpretation of acceptable. The aroma of the developed output was good enough that captivates the taste of the respondents and evaluators of the project.

Table 9: Results of Evaluation in Terms of taste

Attributes	Weighted Mean	Verbal Interpretation
Taste	3.10	Acceptable

This table shows the evaluation of garlic candy in terms of taste has the weighted mean result off 3.10 that has the verbal interpretation of acceptable. According to the respondents of the study the taste of the garlic candy was not too sweet and have the exact taste that captivates the evaluators choice.

Table 10: Results of Evaluation in Terms of appearance

Attributes	Weighted Mean	Verbal Interpretation
Appearance	2.65	Acceptable

This table shows the evaluation of garlic candy in terms of appearance. It has a weighted mean of 2.65 and verbal interpretation of acceptable. The respondents find the appearance of the garlic candy acceptable because it has the bite size and the color yellow, violet and green which indicates delicious taste for them.

Table 11: Results of Evaluation in Terms of Texture

Attributes	Weighted Mean	Verbal Interpretation
Texture	2.83	Acceptable

This table shows the evaluation of garlic candy in terms of texture has a weighted mean of 2.83 and verbal interpretation of acceptable. The texture of the garlic candy was smooth, mouth melted and fine. It is accordingly to the evaluation of the evaluators.

Table 12: Overall Results of Development of Garlic Candy

Attributes	Weighted Mean	Verbal Interpretation
Aroma	2.65	Acceptable
Taste	3.10	Acceptable
Appearance	2.65	Acceptable
Texture	2.83	Acceptable
Composite Mean	2.81	Acceptable

After the evaluation of garlic candy by 25 students and 25 teachers of selected schools, the result of aroma was obtained. The aroma got the weighted mean of 2.65 that indicates acceptable on its verbal interpretation. In terms of taste, it results to the weighted mean of 3.10 which indicates to verbal interpretation of acceptable. Meanwhile, the appearance got 2.65 and texture got 2.83 weighted mean.

CONCLUSIONS

With all accordance to the findings, the researchers concluded that:

In developing garlic candy, the materials, equipment and of ingredients must be in place to properly carry out the procedures involved. Moreover, ingredients must have the right proportion to get the best possible results. In lieu with this, the researchers conducted an experiment wherein it can be concluded that certain adjustments to the proportion of ingredients can enhance the product. And among the three, Experiment B stood out with the highest acceptable formula in developing garlic candy. In terms of the ingredients, the researchers used the garlic as the main ingredient. From the foregoing findings, it can be concluded that the result of acceptability of the garlic candy varies on the proportion of ingredients and in terms of aroma, taste, appearance and texture. Experiment B garnered a composite mean of 3.16 making it the highly acceptable formula in developing garlic candy. Meanwhile, the composite mean of Experiment A is 2.57 and Experiment C is 2.70. Both of which have an acceptable verbal interpretation but came short in terms of appearance while Experiment A also failed in terms of aroma. As healthy as it may get, it can still be concluded that the nutritional content of a garlic candy must not be greater to what is needed to avoid any adverse effects to consumers. It can be concluded that developing an appropriate labelling and packaging of the garlic candy is important as it adds up to the value of the product

RECOMMENDATIONS

Based on the conducted research, the researchers recommend that:

1. The researchers recommend trying to include more vitamins and minerals to be tested at the laboratory. It is necessary to examine and determine the other benefits of garlic to human body.
2. It is suggested that the packaging of garlic candy should be improved. It is necessary to improve its impact to the market and to its customer.
3. It is recommended to study the life span of the product to have an idea on how to lengthen its life span. It is necessary to improve the length of the product to have better quality and consumption.
4. The researchers suggest that other product should be thought of with the use of garlic. It is necessary to have more benefits and essentials came from the garlic that allow human body to cope with the sickness in natural way.
5. It is recommended to try other shapes of candy for aesthetic appeal. It may attract the taste of the kids who needs and seeks for the nutritive value of the garlic candy.

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We are very grateful and honor to accomplish this research with the love and support of our parents, who provides everything we need, comfort of our friends and classmates who always supports and give us moral enlightenment, guidance of our research adviser who spent time for checking and approving our output, enlightenment of our instructor who gave us knowledge on how to accomplish this study, motivation from Batangas State University family that serve as the light on our path to this journey and strength from Almighty God, who let us enjoy and experienced this kind of memories. Our hearts are overwhelmed.

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