



ACCEPTABILITY OF BLUE PEA (*Clitoria ternatea*) FLOWER FLAVORED GELATIN

MARIA S. CHUA, D.M.
CENBY EPIE G. GAYTOS, Ph.D.
JUNE 2021

Abstract

The Blue Pea flower has become abundant not just in Guiuan, Eastern Samar but as well as its neighboring towns since people have learned of the health benefits it provides to those who drink it. Blue pea flower is now commonly drunk as tea. This study was conducted by the proponents to make people realize that there are other ways of incorporating the blue pea flower to one's food intake without losing all the health benefits that it brings to consumers.

The main purpose of the study was to make a blue pea flower flavored gelatin. Specifically, it aimed to evaluate and analyze the product in terms of the following:

1. develop a new gelatin product flavor with the blue pea flower.
2. evaluate the acceptability level of the blue pea flower flavored gelatin through the following indicator.
 - a. flavor
 - b. appearance
 - c. texture
 - d. aroma
 - e. color
3. determine the general acceptability of the blue pea flower flavored gelatin.

The development of blue pea gelatin evident to the following characteristics: flavor, appearance, texture, aroma, colour, and general acceptability.

A total of 70 individuals considered as the respondents of the study. . The respondents of the study were the thirty (30) selected BTVTLED students, BTLED students and BSIT

students, twenty (20) from the College of Education, and ten (10) from College of Technology for the benchmark test, and thirty (30) Faculty members in ESSU-Guiuan Campus were asked to become the respondents for the pilot test and ten (10) gelatin makers and vendors for the final test.

A score card was used as an instrument to determine the acceptability of the consumers. To quantify the responses, mean was used to know the acceptability of the blue pea gelatin in terms of flavor, appearance, texture, aroma, color and general acceptability.

The evaluation result of the benchmark test participated by Thirty selected students from the College of Education and College of Technology, with 10 BTVTED students and 10 BTLED students, and 10 BSIT students. Each indicator has the scale of 1-5. Among the parameters, texture was the highest mean score of 4.7 which means that the respondents were extremely acceptable the product. However, flavor was the lowest mean score of 3.36 and interpreted as acceptable. The overall mean in the pilot test garner the score of 4.48 and was interpreted as extremely acceptable.

The pilot test participated by thirty faculty members of ESSU Guiuan Campus. Each parameter has the scale of 1-5. Among the parameters, texture was the highest mean score of 4.92 which interpreted as extremely acceptable, that means the respondents likes the texture of the product. Meanwhile, aroma was the lowest mean score of 4.05 which also interpreted as extremely acceptable. This means that in terms of aroma should be improve in order to attract customers through the smell of the product. The overall mean in the benchmark test got the score of 4.48 and was interpreted as extremely acceptable.

Moreover, the final test participated ten gelatin makers and vendors in Guiuan Eastern Samar. Each parameter has 1-5 scale. Among of the parameters, color had the highest mean score of 4.95 which is interpreted as extremely acceptable. This means that the respondents of the final test are pleased with the appearance they feel whenever they eat the rose petal ice cream. In the other hand, the indicator Flavoring ranked lowest among the group and was rated 4.43 but still, interpreted as an extremely like. This just proves that in terms of flavoring, the researcher's needs to improve the flavor of the product enable to become more palatable for the target customers.

Based in the result of the test conducted, Blue Pea Gelatin was extremely liked by the consumer. The blue pea flower is not only good for drinking tea but can also be used for desserts. This is a practical use for the raw products since all are affordable if not free and are available on all seasons.

Based on our conclusion the following recommendation is drawn:

1. To the future researchers may conduct another research using blue pea as an ingredient.
2. There are a numerous ways to add flavor to gelatins, healthy even.
3. Lastly, further study is needed to improve the packaging of the product.

CHAPTER I

INTRODUCTION

Background of the Study

Originating from South East Asia, blue tea has been around for centuries, derived from the *Clitoria ternatea* plant, also called the butterfly-blue pea, blue-pea, or Asian pigeonwings. It's recently gained popularity due to its many health benefits. This caffeine-free, herbal blue tea is actually a tisane. The butterfly blue pea flowers are infused in hot water to give this rich, bright-colored, floral smelling blue tea. So, it's actually a Tisane; a herbal concoction made from the infusion of leaves or herbs. (teahow.com, 2021)

Recent studies have shown blue tea to offer various health benefits which includes the following; weight loss, all-natural paracetamol, beneficial to eye health, combats the effects of diabetes, zero caffeine, good for heart health, packed full of antioxidants, anti -aging properties, combats premature hair loss or male pattern baldness, effective against stress, anxiety, and depression, overall brain health and anti -inflammatory properties. (teahow.com, 2021)

Gelatin is an animal-based product used to set jellies, custards and fillings. Read our expert guide to find out how to prepare and cook with gelatin. A colorless, tasteless and odorless setting agent made from the boiled bones, skins and tendons of animals. When dissolved in boiling water and then cooled it turns into a jelly-like form that is used to thicken and stabilize desserts such as jelly, custard and fillings. Gelatin comes in either leaf or powdered form. Powdered gelatin is available in most supermarkets, usually with instructions on how much is need to set a specific quantity of liquid. Most cooks, however, prefer to use leaf gelatin as it dissolves quickly and is odorless, flavorless and clear. (bbcgoodfood.com, 2021)

The Blue Pea flower has become abundant not just in Guiuan, Eastern Samar but as well as its neighboring towns since people have learned of the health benefits it provides to those who drink it. Blue pea flower is now commonly drunk as tea. This study was conducted by the proponents to make people realize that there are other ways of incorporating the blue pea flower to one's food intake without losing all the health benefits that it brings to consumers.

Objective of the study

The main purpose of the study was to make a blue pea flower flavored gelatin. Specifically, it aimed to evaluate and analyze the product in terms of the following:

4. develop a new gelatin product flavor with the blue pea flower.
5. evaluate the acceptability level of the blue pea flower flavored gelatin through the following indicator.
 - f. flavor
 - g. appearance
 - h. texture
 - i. aroma
 - j. color
6. determine the general acceptability of the blue pea flower flavored gelatin.

Significance of study

The output of the study is beneficial to the following:

To unemployed members of the community. For them to be aware of more entrepreneurial potentials of the blue pea flower.

To businessmen and food establishment owners. For them to add a new product innovation in their sales and products so that they can welcome more costumers in their stores.

The students. This study will give the students (future researchers) to have an idea and to innovate new products using the blue pea flower.

The customers. The result of this study will provide health benefits to the customers. This could also help them to make new product using the blue pea flower.

The instructors. This study will help the instructors to give an idea to their students on how to innovate a new product that is made from the blue pea flower.

Scope and Delimitations of the Study

This study was limited in testing the blue pea flavored gelatin. The respondents of the study were the thirty (30) selected BTVTED students, BTLED students and BSIT students, twenty (20) from the College of Education, and ten (10) from College of Technology for the benchmark test, and thirty (30) Faculty members in ESSU-Guiuan Campus were asked to

become the respondents for the pilot test and ten (10) gelatin makers and vendors for the final test. This study used a score card to determine the acceptability of Blue Pea flower flavored gelatin indicating the following criteria, flavor, appearance, texture, aroma, color and general acceptability.

Definition of Terms

The following terms are defined in a random order to aid the comprehension of the readers:

Appearance. The act or fact of appearing, as to the eye or mind or before the public. In this study, the term refers to the overall look of the final product.

Aroma. An odor arising from spices, plants, cooking, etc. especially an agreeable odor; fragrance. In this study, the term refers to the aroma of the blue pea flavored gelatin.

Blue Pea flower. Is derived from the Clitoria ternatea plant, also referred to as the butterfly – blue pea, blue – pea, or Asian pigeon wings. The shape of the flowers of Clitoria ternatea was believed to resemble female human genitals, hence the name “clitoria” from “clitoris”.

Flavor. The particular way a substance, esp. food or drink, is recognized from its taste and smell. In this study, the term refers to the overall taste and smell of the blue pea flavored gelatin.

Gelatin. A nearly transparent, faint yellow, odorless, and almost tasteless glutinous substance obtained by boiling in water the ligaments, bones, skin, etc., of animals, and forming the basis of jellies, glues, and the like. In this study, the terms refers to the blue pea flavored gelatin.

Taste. The sense by which the flavor or savor of things is perceived when they are brought into contact with the tongue.

Texture. The characteristic physical structure given to a material, an object, etc., by the size, shape, arrangement, and proportions of its parts. An essential or characteristic quality. In this study, the term refers to the texture of the blue pea flavored gelatin.

CHAPTER II

REVIEW OF RELATED LITERATURE AND STUDIES

This chapter presents the relevant articles, studies, and literatures that will serve as the basis of this study.

Related Literature

Blue Pea Flower

Clitoria ternatea is also called butterfly pea flower or blue ternate.

1. **Boosts brain health:** Several studies on rats and other animals have indicated that regular administration of blue butterfly pea extracts boosts the levels of a chemical called acetylcholine in their brain. Acetylcholine is essential for good brain health. High acetylcholine levels in the brain are known to decrease age-associated memory loss and improve memory. Consumption of blue butterfly pea can improve thinking abilities and boost overall brain health.
2. **Fights against cancers:** Butterfly pea plants contain substances that have anticancer properties. Consuming blue butterfly pea tea may have some role in fighting cancers. It enters the cancer cells and inhibits their growth.
3. **Anti-inflammatory properties:** Consumption of blue butterfly pea tea can reduce swelling in the body. It can reduce body pain, migraine, and swelling due to wounds and headaches.
4. **Lowers blood pressure:** Consumption of butterfly pea flower tea can help reduce blood pressure. Individuals with elevated blood pressure (hypertension) could consume this.
5. **Improves skin health:** Blue butterfly pea is rich in antioxidants. It can slow down the skin aging process, prevent premature aging, and improve overall skin tone and texture.
6. **Improves hair health:** Butterfly pea nourishes hair follicles, promotes hair growth, reduces hair fall, and slows down the greying of hair. Butterfly pea is also used as an ingredient in many hair shampoos, conditioners, and other hair products.
7. **Helps in digestion:** The antioxidants in blue butterfly pea tea can help relax the stomach muscles, aiding digestion. It also has anthelmintic property; it helps prevent the growth of worms in the gut.
8. **Helps regulate blood sugar levels:** Butterfly pea flower tea can help regulate the absorption of sugar into the bloodstream, thus regulating blood sugar levels. The tea can be beneficial to diabetic patients if taken along with the medications.

Butterfly flower power tea has several health benefits. Consuming this tea regularly can improve the overall health of the brain, skin, hair, and body. However, it may not completely cure a medical condition. Serious medical conditions, such as cancer, Alzheimer's, dementia, diabetes, hypertension, or serious skin and/or hair problems, require medical attention. If you are undergoing medical treatment for a particular medical condition, you may consult with your doctor if you can take butterfly pea flower tear alongside the medical treatment. Butterfly flower power tea is found to be safe in pregnant women as well. However, consult with your doctor before drinking the tea during pregnancy.

Gelatin

Gelatin brings to mind a flavored, colorful dessert. However, gelatin is also a common ingredient in soups, broths, sauces, gummy candies, marshmallows, cosmetics, and medications.

Its high protein content makes gelatin a popular choice for those who are recovering from an illness. Some people take gelatin or its components as a supplement.

Gelatin and collagen contain similar proteins, and laboratory tests have suggested that consuming gelatin as part of a varied diet may provide similar benefits.

Manufacturers produce gelatin by processing animal bones, cartilage, and skin. People can also make it from fish.

This process extracts the collagen — a fibrous protein that connects muscles, bones, and skin in animals — and turns it into gelatin, a flavorless, colorless substance with a jelly-like texture.

In this article, learn about the possible health benefits of gelatin.

Amino acids in gelatin

Protein consists of various amino acids, and gelatin contains several of these.

The amino acids in gelatin-based foods will depend on the item, the source of the gelatin, and the way the manufacturer processes it.

The bones and organs of some animals also contain the amino acids found gelatin. Most people do not eat those parts of the animal, but they can obtain them by eating gelatin.

The most common amino acids in gelatin include:

- glycine
- proline
- valine

Valine is an essential amino acid that the human body cannot produce. This means it must come from the diet.

Some forms of gelatin also contain:

- lysine
- alanine
- arginine

Some people take these as food supplements, but gelatin could be an alternative source.

10 uses and benefits

Gelatin may provide a number of health benefits.

1. Healthy body tissues

A 240-gram (g) Trusted Source cup of a gelatin dessert provides 0.82 g of protein.

The *Dietary Guidelines for Americans 2015–2020* recommend that adults consume 46–56 g of protein or 10–35% of their daily calorie intake each day, depending on their age and sex.

Protein is a macronutrient, which means the body needs significant amounts of it to function.

Proteins are essential for:

- building and maintaining body tissue
- the proper functioning of various organs
- energy

Proteins are made up of various amino acids. The human body makes some amino acids, but most people need to take in extra through their diet.

Meat is a source of protein, but it can be high in unhealthy fat. Gelatin is a protein source that does not contain fat.

A 2017 study Trusted Source suggested that a supplement combining vitamin C and gelatin may help prevent or repair body tissues in athletes. However, the study looked at supplementation rather than dietary intake.

2. Skin care

Collagen gives skin its healthy and youthful appearance. As people age, they lose collagen. Their skin becomes less firm, and wrinkles and lines develop.

Gelatin may be a natural way to boost collagen and improve the skin's appearance. A 2016 study Trusted Source found that consuming collagen improved facial moisture and reduced wrinkles in humans.

However, experts are not sure that consuming gelatin would have the same effect.

3. Digestion

Gelatin contains glutamic acid, a substance that may help promote Trusted Source a healthy mucosal lining in the stomach. This could help with digestion.

It may also help digestion by stimulating the production of gastric juices. Gelatin also binds to water, which might help food move through the digestive system.

4. Easing joint pain

The collagen in gelatin may decrease joint pain associated with inflammation.

According to the National Library of Medicine, some clinical studies indicate gelatin may reduce pain and improve joint function in people with osteoarthritis.

5. Managing blood sugar

One study has indicated that glycine, which is an amino acid in gelatin, may help people with type 2 diabetes manage their condition.

People who took glycine as a treatment saw a fall in their A1C levels and inflammation, suggesting that glycine may help prevent complications, such as tissue damage.

However, some gelatin-based products, such as gummy candies, have a high sugar content. These are not a suitable source of gelatin for people with type 2 diabetes.

6. Bone strength

Gelatin contains lysine, which helps strengthen the bones. It also helps the body absorb calcium, which helps keep the bones strong and prevents bone loss.

Some people consume gelatin to reduce their risk of osteoporosis, which causes bones to become weak or brittle.

A 2001 study, Trusted Source found no significant difference in bone density between mice who consumed gelatin and those who consumed another protein source.

However, other research, Trusted Source, published in 2017, found that when rats with a magnesium deficiency consumed gelatin, this had a positive impact on one aspect of bone density.

However, more research is necessary to confirm whether eating gelatin can improve bone health.

7. Sleep quality

The glycine in gelatin may improve sleep quality in some people.

In a study, Trusted Source published in 2006, people who took 3 grams (g) of glycine around bedtime reported sleeping better and feeling more lively and clear headed in the morning.

The following year, a more detailed study, Trusted Source confirmed the findings and suggested that glycine could play a role as a sleep enhancer.

However, the studies did not recommend consuming gelatin to improve sleep.

8. Weight loss

Some scientists have suggested that gelatin may help promote weight loss due to its high protein levels and low-calorie content. Protein helps people feel full, making them less likely to overeat.

However, a 2011 study that compared the effects of consuming a gelatin-milk protein diet with another milk protein diet did not find that people lost more weight with the gelatin option.

In addition, some sources of gelatin, such as chewy candies and marshmallows, have a high sugar content. People should opt for healthful, low-sugar sources of gelatin where possible.

9. Hair

Some people take gelatin capsules in the hope that the lysine it contains will improve hair growth.

In 2004, scientists observed a significant increase in hair shaft length after mice took a gelatin derivative for 10 days.

However, this does not guarantee that taking gelatin capsules will improve a person's hair growth.

10. Nails

In the 1950s, various studies suggested that consuming gelatin may help prevent brittle nails. However, no current evidence appears to support this use.

Related Studies

Blue Pea Flower

Clitoria ternatea or commonly known as 'Butterfly pea' has been used traditionally in Ayurvedic medicine in which various parts of the plants are used to treat health issues such as indigestion, constipation, arthritis, skin diseases, liver and intestinal problems. The flowers of *C. ternatea* are used worldwide as ornamental flowers and traditionally used as a food colorant. This paper reviews the recent advances in the extraction and biological activities of phytochemicals from *C. ternatea* flowers. The application of maceration or ultrasound assisted extraction greatly increased the yield (16–247% of increase) of phytochemicals from *C. ternatea* flowers. Various phytochemicals such as kaempferol, quercetin and myricetin glycosides as well as anthocyanins have been isolated from *C. ternatea* flowers. *Clitoria ternatea* flower extracts were found to possess antimicrobial, antioxidant, anti-inflammatory, cytotoxic and antidiabetic activities which are beneficial to human health. *Clitoria ternatea* flower is a promising candidate for functional food applications owing to its wide range of

pharmacotherapeutic properties as well as its safety and effectiveness. (Jeyaraj, Ethel Jeyaseela, et.al., 2021)

Clitoria ternatea L. commonly known as 'blue pea' is an underutilized plant in Sri Lanka. The blue coloured flower of this plant is used in medicine in Sri Lankan traditional medical system and also reported to have several health benefits in recent findings at the international level. However, to date scientifically validated value added products from blue pea flower (BPF) is very limited worldwide. In this connection, this study was carried out to develop a commercial potential blue pea flower extract (BFE) incorporated beverage having functional properties. Dried BPFs were extracted into water with varying flower: water ratio, temperature, and time using response surface methodology (RSM) along with Box–Behnken design. A range of BFE incorporated beverages was developed comprising a natural sweetener (Stevia extract) and a flavour (lime). The most acceptable formulation was selected via ranking and hedonic sensory tests. Further, it was evaluated for functional properties in terms of antioxidant activity via total polyphenolic and flavonoid contents, ferric reducing antioxidant power and radical scavenging activities via ORAC; DPPH and ABTS. Glycaemic regulatory properties (GCP) were evaluated in terms of antiamylase and antiglucosidase activities. Quality parameters of the developed beverage were evaluated for a period of 28 days at different time intervals and a colour chart was also developed. The optimum conditions for extraction of BPF via RSM were 3 g of powdered BPF/L of water at 59.6 °C for 37 min. The most acceptable formulation consists of BFE, Stevia extract, and lime at a ratio of 983.25:1.75:15. Further, it had significantly higher ($p < 0.05$) consumer preference for sensory attributes. Further, it possesses an antioxidant activity through multiple mechanisms while GCP were not detected. Moreover, it was shelf stable for a period of 28 days without preservatives. The colour chart can be used to monitor the quality of the beverage. (Jayanath, et.al., 2019)

Clitoria ternatea (Family: Fabaceae) is one of the traditional medicinal plants used as "Shanka Pushpi" an Ayurvedic medicine used to boost or enhance neurological health. The plant contains alkaloid, flavonoid, taraxerol, taraxerone, triterpenoid and anthocyanin as active chemicals that bring about its biological effects. Its extracts possess a wide range of pharmacological activities including antibacterial, anti-diabetic, anti-diarrheal, anti-fungal, anti-helminthic, anti-inflammatory, antimicrobial, antioxidant, and antipyretic activities, hypolipidemia, immunomodulatory, and wound healing. This review is an attempt to compile information on various ethno medicinal uses of memory boosting herb, butterfly pea, *Clitoria ternatea*. Conclusion: It has a wide spectrum of neuro pharmacological benefits such as nootropic, anti-depressant, anti-stress, anxiolytic, and anticonvulsant activities. (Kosai, R., et.al., 2015)

The perennial leguminous herb *Clitoria ternatea* (butterfly pea) has attracted significant interest based on its agricultural and medical applications, which range from use as a fodder and nitrogen fixing crop, to applications in food coloring and cosmetics, traditional medicine and as a source of an eco-friendly insecticide. In this article we provide a broad multidisciplinary review that includes descriptions of the physical appearance, distribution, taxonomy, habitat, growth and propagation, phytochemical composition and applications of this plant. Notable amongst its repertoire of chemical components are anthocyanins which give *C. ternatea* flowers their characteristic blue color, and cyclotides, ultra-stable macrocyclic peptides that are present in all tissues of this plant. The latter are potent insecticidal molecules and are implicated as the bioactive agents in a plant extract used commercially as an insecticide. We include a description of the genetic origin of these peptides, which interestingly involve the co-option of an ancestral albumin gene to produce the cyclotide precursor protein. The biosynthesis step in which the cyclic peptide backbone is formed involves an asparaginyl endopeptidase, of which in *C. ternatea* is known as butelase-1. This enzyme is highly efficient in peptide ligation and has been the focus of many recent studies on peptide ligation and cyclization for biotechnological applications. The article concludes with some suggestions for future studies on this plant, including the need to explore possible synergies between the various peptidic and non-peptidic phytochemicals. (Oguis, Gilding, Jackson and Craik, 2019)

Collagen and gelatin have been widely used in the food, pharmaceutical, and cosmetic industries due to their excellent biocompatibility, easy biodegradability, and weak antigenicity. Fish collagen and gelatin are of renewed interest, owing to the safety and religious concerns of their mammalian counterparts. The structure of collagen has been studied using various modern technologies, and interpretation of the raw data should be done with caution. The structure of collagen may vary with sources and seasons, which may affect its applications and optimal extraction conditions. Numerous studies have investigated the bioactivities and biological effects of collagen, gelatin, and their hydrolysis peptides, using both in vitro and in vivo assay models. In addition to their established nutritional value as a protein source, collagen and collagen-derived products may exert various potential biological activities on cells in the extracellular matrix through the corresponding food-derived peptides after ingestion, and this might justify their applications in dietary supplements and pharmaceutical preparations. Moreover, an increasing number of novel applications have been found for collagen and gelatin. Therefore, this review covers the current understanding of the structure, bioactivities, and biological effects of collagen, gelatin, and gelatin hydrolysates as well as their most recent applications. (Liu, D, et.al., 2015)

Work Flow

The study of this product includes input, process and output of the products. In these aspects it speaks on how the product acceptability of blue pea flavored gelatin is being produce, what the ingredients and what materials needed.

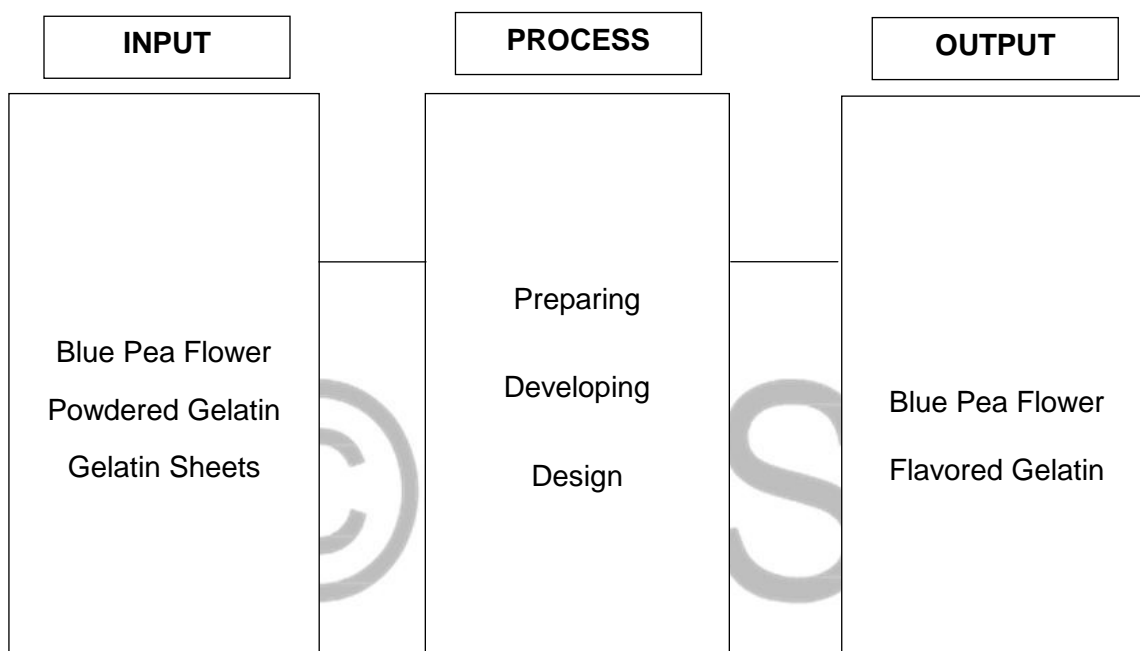


Figure1. Workflow of the study

CHAPTER III

METHODOLOGY

This chapter presents the research design, locale of the study, and respondents of the study, research instruments, and data collection procedure, measurement of variables and analysis of data.

Raw Materials

- Animal bones, skins, and tissue obtained from meat.
- Acids and alkaline such as caustic lime or sodium carbonate (used to extract minerals and bacteria from the animal parts)
- Blue Pea flower (to be used as sweetener, flavorings and colorings)

Procedure

1. Inspection and cutting of the animal parts. Rotten parts are discarded, then the bones, tissues, and skins cut into small pieces of about 12.7 cm in diameter.
2. Degreasing and roasting. The animal parts are washed, then degreased by soaking them in hot water to reduce the fat content to about 2%. After this, the degreased bones and skins are then dried and roaster for approximately 30 minutes at about 100°C
3. Acid and alkaline treatment. The animal parts are soaked in vats of lime or some other type of acid or akali for approximately five days. This process removes most of the minerals and bacteria and facilitates the release of collagen.
4. Boil. Boil the pieces of bone, tissue and skin in a distilled water. Extract the liquid that now contains gelatin. Add some blue pea flowers for color and flavoring.
5. Evaporating and grinding. From the extractor, the liquid is piped through filters to separate out bits of bone, tissue or skin that are still attached. From the filters, the liquid is piped into evaporators, then the liquid is separated from the solid gelatin. The liquid is piped out and discarded. The gelatin is then pressed into sheets and grinded. Add more blue pea flowers in the grinder to mix with the gelatin sheets.
6. Packaging. Pack the blue pea flavored gelatin in a vacuum sealed bag.

Benchmark Testing Cost

Trial 1 Costing	Trial 2 Costing	Trial 3 Costing
Discarded Animal Parts: -3 kilos of meat containing Bones, tissues and skins (free)	Discarded Animal Parts: -3 kilos of meat containing Bones, tissues and skins (free)	Discarded Animal Parts: -3 kilos of meat containing Bones, tissues and skins (free)
Blue Pea flower (30 pcs) (free)	Blue Pea flower (25 pcs) (free)	Blue Pea flower (20 pcs) (free)
Lime (for Acid of Alkaline) (3 pcs lime for P75.00) 30 pcs of lime = P750.00	Lime (for Acid of Alkaline) (3 pcs lime for P75.00) 24 pcs of lime = P600.00	Lime (for Acid of Alkaline) (3 pcs lime for P75.00) 21 pcs of lime = P525.00
3 L Water (P30.00)	3 L Water (P30.00)	3 L Water (P30.00)
Total: P780.00	Total: P630.00	Total: P555.00

Pilot Testing Cost

Trial 1 Costing	Trial 2 Costing	Trial 3 Costing
Discarded Animal Parts: -3 kilos of meat containing Bones, tissues and skins (free)	Discarded Animal Parts: -3 kilos of meat containing Bones, tissues and skins (free)	Discarded Animal Parts: -3 kilos of meat containing Bones, tissues and skins (free)
Blue Pea flower (30 pcs) (free)	Blue Pea flower (25 pcs) (free)	Blue Pea flower (20 pcs) (free)
Lime (for Acid of Alkaline) (3 pcs lime for P75.00) 30 pcs of lime = P750.00	Lime (for Acid of Alkaline) (3 pcs lime for P75.00) 24 pcs of lime = P600.00	Lime (for Acid of Alkaline) (3 pcs lime for P75.00) 21 pcs of lime = P525.00
1.5 L Water (P15.00)	1.5 L Water (P15.00)	1.5 L Water (P15.00)
Total: P765.00	Total: P615.00	Total: P535.00

Final Testing Cost

Trial 1 Costing	Trial 2 Costing	Trial 3 Costing
Discarded Animal Parts: -3 kilos of meat containing Bones, tissues and skins (free)	Discarded Animal Parts: -3 kilos of meat containing Bones, tissues and skins (free)	Discarded Animal Parts: -3 kilos of meat containing Bones, tissues and skins (free)
Blue Pea flower (20 pcs) (free)	Blue Pea flower (20 pcs) (free)	Blue Pea flower (20 pcs) (free)
Lime (for Acid of Alkaline) (3 pcs lime for P75.00) 21 pcs of lime = P525.00	Lime (for Acid of Alkaline) (3 pcs lime for P75.00) 21 pcs of lime = P525.00	Lime (for Acid of Alkaline) (3 pcs lime for P75.00) 18 pcs of lime = P450.00
1.5 L Water (P15.00)	1 L Water (P7.00)	1 L Water (P7.00)
Total: P535.00	Total: P528.00	Total: P457.00

Methods

Research Design

The study utilized the Experimental method of research particularly the completely randomized design (CRD) where all samples were randomly assigned to all panelists as this experimental design is most associated with sensory studies to avoid or minimize artifacts due to order of sample presentation. CRD is also ideal design for central location consumer test where each panelist evaluates each sample (Lawless and Heymann, 2010)

Locale of the Study

The study was conducted at Eastern Samar State University – Guiuan Campus located at Brgy. Salug Guiuan Eastern Samar.

Respondents of the Study

There are 70 individuals considered as the respondents of the study. The respondents of the study were the thirty (30) selected BTVTED students, BTLED students and BSIT students, twenty (20) from the College of Education, and ten (10) from College of Technology for the benchmark test, and thirty (30) Faculty members in ESSU-Guiuan Campus were asked to become the respondents for the pilot test and ten (10) gelatin makers and vendors for the final test. This study used a score card to determine the acceptability of Blue Pea flower flavored gelatin indicating the following criteria, flavor, appearance, texture, aroma, color and general acceptability.

Research Instrument

The researchers used a score card for the acceptability test in this study that served as a guide of the respondents' evaluation process. The evaluation used the following indicators; flavor, appearance, texture, aroma, color and general acceptability. Each indicator has a scale of 1-5. 1 is for not acceptable, 2 is for slightly acceptable, 3 is for acceptable, 4 is for highly acceptable, 5 is for extremely acceptable.

Data Collection Procedure

The researchers prepared a communication letter addressed to the campus administrator of ESSU – Guiuan where the study was conducted. After the request was approved, the researchers distributed score card to the respondents together with the product. The researchers used the purposive sampling in which the respondents were chosen based on the characteristics needed in the investigation. Then, the researchers collected the data gathered from the score card and tallied the result ready for interpretation.

Measurement of Variables

To measure the variables, the criteria below were used:

Ranges	Scale	Interpretation
4.21-5.00	5	Extremely Acceptable
3.41-4.20	4	Highly Acceptable
2.41-3.40	3	Acceptable
1.81-2.40	2	Slightly Acceptable
1.00-1.80	1	Not Acceptable

Data Analysis

The data that were gathered and tallied in order to derive the frequency and mean ratings for each of the variables considered in this study. The mean ratings were interpreted using the 5 point Likert scale namely: 5- extremely acceptable, 4- highly acceptable, 3- acceptable, 2- slightly acceptable, 1- not acceptable

CHAPTER IV

RESULTS AND DISCUSSION

This chapter presents the answers to the researcher questions posed in the study based on the data gathered of the product development of Blue Pea flavored Gelatin.

Development of the Product

First the rotten parts are discarded, then the bones, tissues, and skins cut into small pieces of about 12.7 cm in diameter. The animal parts are washed, then degreased by soaking them in hot water to reduce the fat content to about 2%. After this, the degreased bones and skins are then dried and roaster for approximately 30 minutes at about 100°C The animal parts are soaked in vats of lime or some other type of acid or akali for approximately five days. This process removes most of the minerals and bacteria and facilitates the release of collagen. Boil the pieces of bone, tissue and skin in a distilled water. Extract the liquid that now contains gelatin. Add some blue pea flowers for color and flavoring. From the extractor, the liquid is piped through filters to separate out bits of bone, tissue or skin that are still attached. From the filters, the liquid is piped into evaporators, then the liquid is separated from the solid gelatin. The liquid is piped out and discarded. The gelatin is then pressed into sheets and grinded. Add more blue pea flowers in the grinder to mix with the gelatin sheets. Pack the blue pea flavored gelatin in a vacuum sealed bag.

Testing the Product

To determine the acceptability of the blue pea flavored gelatin, the researchers conducted 3 tests, the benchmark test, the pilot test, and the final test. A scorecard with different criterion was used to test the acceptability of each indicator in the scorecard. Upon demonstrating the development of the product and giving a free taste to the respondents, the researchers handed the scorecard to determine the respondent's perception and acceptability of the product.

Benchmark Test

Table 1. The Result of the Benchmark Test of the Blue Pea Gelatin in terms of flavor

Items	Mean	Interpretation
Trial 1	3.29	Acceptable
Trial 2	3.33	Acceptable
Trial 3	3.45	Highly Acceptable
Total Mean	3.36	Acceptable

Table 1 shows the evaluation result of the benchmark test participated by Thirty selected students from the College of Education and College of Technology, with 10 BTVTED students and 10 BTLED students, and 10 BSIT students. The researchers conducted three trials in pilot test. Each indicator has a scale of 1-5. Trial 3 got highest mean score of the flavor is 3.45 and interpreted as highly acceptable. Trial 1 has the lowest score of 3.29 and interpreted as acceptable. With an overall mean score of 3.36 and is interpreted as acceptable.

Table 2. The Result of the benchmark test of Blue Pea Gelatin in Terms of Appearance

Items	Mean	Interpretation
Trial 1	4.20	Highly Acceptable
Trial 2	4.21	Extremely Acceptable
Trial 3	4.50	Extremely Acceptable
Total Mean	4.30	Extremely Acceptable

Table 2 shows the evaluation result of the benchmark test participated by Thirty selected students from the College of Education and College of Technology, with 10 BTVTED students and 10 BTLED students, and 10 BSIT students. The researchers conducted three trials in pilot test. Each indicator has a scale of 1-5. In trial 1 the mean score of the appearance 4.20 and interpreted as highly acceptable. Meanwhile, Trial 2, has a mean score 4.21 and interpreted as extremely acceptable. In trial 3 mean score is 4.50 and is interpreted as extremely acceptable. With an overall mean score of 4.30 and is interpreted as extremely acceptable.

Table 3. The Result of the benchmark test of Blue Pea Gelatin in Terms of Texture

Items	Mean	Interpretation
Trial 1	4.81	Extremely Acceptable
Trial 2	4.49	Extremely Acceptable
Trial 3	4.80	Extremely Acceptable
Total Mean	4.7	Extremely Acceptable

Table 3 shows the evaluation result of the benchmark test participated by Thirty selected students from the College of Education and College of Technology, with 10 BVTED students and 10 BTLED students, and 10 BSIT students. The researchers conducted three trials in pilot test. Each indicator has a scale of 1-5. In trial 1 the mean score of the texture 4.81 and interpreted as extremely acceptable. Meanwhile, Trial 2, has a mean score 4.49 and interpreted as extremely acceptable. In trial 3 mean score is 4.80 and is interpreted as extremely acceptable. With an overall mean score of 4.7 and is interpreted as extremely acceptable.

Table 4. The Result of the benchmark test of Blue Pea Gelatin in Terms of Aroma

Items	Mean	Interpretation
Trial 1	4.51	Extremely Acceptable
Trial 2	4.24	Extremely Acceptable
Trial 3	4.99	Extremely Acceptable
Total Mean	4.58	Extremely Acceptable

Table 4 shows the evaluation result of the benchmark test participated by Thirty selected students from the College of Education and College of Technology, with 10 BVTED students and 10 BTLED students, and 10 BSIT students. The researchers conducted three trials in pilot test. Each indicator has a scale of 1-5. Trial 3 got highest mean score of the aroma is 4.99 and interpreted as extremely acceptable. Trial 2 has the lowest score of 4.24 and interpreted as extremely acceptable. With an overall mean score of 4.58 and is interpreted as extremely acceptable.

Table 5. The Result of the benchmark test of Blue Pea Gelatin in Terms of Color

Items	Mean	Interpretation
Trial 1	4.31	Extremely Acceptable
Trial 2	4.70	Extremely Acceptable
Trial 3	4.33	Extremely Acceptable
Total Mean	4.45	Extremely Acceptable

Table 5 shows the evaluation result of the benchmark test participated by Thirty selected students from the College of Education and College of Technology, with 10 BTVTED students and 10 BTLED students, and 10 BSIT students. The researchers conducted three trials in pilot test. Each indicator has a scale of 1-5. Trial 2 got highest mean score of the color is 4.70 and interpreted as extremely acceptable. Trial 1 has the lowest score of 4.31 and interpreted as extremely acceptable. With an overall mean score of 4.45 and is interpreted as extremely acceptable.

Table 6. Summary on the Overall Perceptions of the Respondents on Benchmark Test.

Indicator	Mean	Interpretation
Flavor	3.36	Acceptable
Appearance	4.30	Extremely Acceptable
Texture	4.7	Extremely Acceptable
Aroma	4.58	Extremely Acceptable
Color	4.45	Extremely Acceptable
Total Mean	4.48	Extremely Acceptable

Table 6 reveals the result of the evaluation result of the benchmark test participated by Thirty selected students from the College of Education and College of Technology, with 10 BTVTED students and 10 BTLED students, and 10 BSIT students. Each indicator has the scale of 1-5. Among the parameters, texture was the highest mean score of 4.7 which means that the respondents were extremely acceptable the product. However, flavor was the lowest mean score of 3.36 and interpreted as acceptable. The overall mean in the pilot test garner the score of 4.48 and was interpreted as extremely acceptable.

Pilot Test

Table 7. The Result of the Pilot Test of Blue Pea Gelatin in Terms of Flavor

Items	Mean	Interpretation
Trial 1	3.90	Highly Acceptable
Trial 2	4.05	Highly Acceptable
Trial 3	4.22	Extremely Acceptable
Total Mean	4.05	Extremely Acceptable

Table 7 shows the evaluation result of the pilot test participated by thirty faculty members of ESSU Guiuan Campus. The researchers conducted three trials in benchmark test. Each indicator has a scale of 1-5. Trial 3 got highest mean score of the flavor is 4.22 and interpreted as extremely acceptable. Trial 1 has the lowest score of 3.90 and interpreted as highly acceptable. With an overall mean score of 4.05 and is interpreted as extremely acceptable.

Table 8. The Result of the Benchmark Test of Blue Pea Gelatin in Terms of Appearance

Items	Mean	Interpretation
Trial 1	4.94	Extremely Acceptable
Trial 2	4.83	Extremely Acceptable
Trial 3	4.90	Extremely Acceptable
Total Mean	4.89	Extremely Acceptable

Table 8 s shows the evaluation result of the benchmark test participated by thirty faculty members of ESSU Guiuan Campus. The researchers conducted three trials in pilot test. Each indicator has a scale of 1-5. Trial 1 got highest mean score of the appearance is 4.94 and interpreted as extremely acceptable. Trial 3 has the lowest score of 4.83 and interpreted as extremely acceptable. With an overall mean score of 4.89 and is interpreted as extremely acceptable.

Table 9. The Result of the Pilot test of the blue Pea Gelatin in Terms of Texture

Items	Mean	Interpretation
Trial 1	4.84	Extremely Acceptable
Trial 2	4.97	Extremely Acceptable
Trial 3	4.95	Extremely Acceptable
Total Mean	4.92	Extremely Acceptable

Table 9 shows the evaluation result of the pilot test participated by thirty faculty members of ESSU Guiuan Campus. The researchers conducted three trials in benchmark test. Each indicator has a scale of 1-5. Trial 2 got highest mean score of the texture is 4.97 and interpreted as extremely acceptable. Trial 1 has the lowest score of 4.84 and interpreted as extremely acceptable. With an overall mean score of 4.92 and is interpreted as extremely acceptable.

Table 10. The Result of the Pilot Test of Blue Pea Gelatin in Terms of Aroma

Items	Mean	Interpretation
Trial 1	4.69	Extremely Acceptable
Trial 2	4.93	Extremely Acceptable
Trial 3	4.96	Extremely Acceptable
Total Mean	4.86	Extremely Acceptable

Table 10 s shows the evaluation result of the benchmark test participated by thirty faculty members of ESSU Guiuan Campus. The researchers conducted three trials in pilot test. Each indicator has a scale of 1-5. Trial 3 got highest mean score of the aroma is 4.96 and interpreted as extremely acceptable. Trial 1 has the lowest score of 4.69 and interpreted as extremely acceptable. With an overall mean score of 4.86 and is interpreted as extremely acceptable.

Table 11. The Result of the Pilot Test of the Blue Pea Gelatin in Terms of Color

Items	Mean	Interpretation
Trial 1	4.86	Extremely Acceptable
Trial 2	4.89	Extremely Acceptable
Trial 3	4.78	Extremely Acceptable
Total Mean	4.84	Extremely Acceptable

Table 11 shows the evaluation result of the pilot test participated by thirty faculty members of ESSU Guiuan Campus. The researchers conducted three trials in pilot test. Each indicator has a scale of 1-5. Trial 2 got highest mean score of the color is 4.89 and interpreted as extremely acceptable. Trial 3 has the lowest score of 4.78 and interpreted as extremely acceptable. With an overall mean score of 4.84 and is interpreted as extremely acceptable.

Table 12. Summary on the Overall Perceptions of the Respondents on Pilot Test.

Indicator	Mean	Interpretation
Flavor	4.06	Highly Acceptable
Appearance	4.89	Extremely Acceptable
Texture	4.92	Extremely Acceptable
Aroma	4.86	Extremely Acceptable
Color	4.84	Extremely Acceptable
Total Mean	4.71	Extremely Acceptable

Table 12 shows the evaluation result of the pilot test participated by thirty faculty members of ESSU Guiuan Campus. Each parameter has the scale of 1-5. Among the parameters, texture was the highest mean score of 4.92 which interpreted as extremely acceptable, that means the respondents likes the texture of the product. Meanwhile, aroma was the lowest mean score of 4.05 which also interpreted as extremely acceptable. This means that in terms of aroma should be improve in order to attract customers through the smell of the product. The overall mean in the benchmark test got the score of 4.48 and was interpreted as extremely acceptable.

Final Test

Table 13. The Result of the Final Test of Blue Pea Gelatin in Terms of Flavor

Items	Mean	Interpretation
Trial 1	4.25	Extremely Acceptable
Trial 2	4.50	Extremely Acceptable
Trial 3	4.55	Extremely Acceptable
Total Mean	4.43	Extremely Acceptable

Table 13 shows the evaluation result of the final test participated ten gelatin makers and vendors in Guiuan Eastern Samar. The researchers conducted three trials in final test. Each indicator has a scale of 1-5. Trial 3 got highest mean score of the flavor is 4.55 and interpreted as extremely acceptable. Trial 2 has the lowest score of 4.25 and interpreted as extremely acceptable. With an overall mean score of 4.43 and is interpreted as extremely acceptable.

Table 14. The Result of the Final Test of Blue Pea Gelatin in Terms of Appearance

Items	Mean	Interpretation
Trial 1	4.89	Extremely Acceptable
Trial 2	4.90	Extremely Acceptable
Trial 3	4.92	Extremely Acceptable
Total Mean	4.90	Extremely Acceptable

Table 14 shows the evaluation result of the final test participated ten gelatin makers and vendors in Guiuan Eastern Samar. The researchers conducted three trials in final test. Each indicator has a scale of 1-5. Trial 3 got highest mean score of the appearance is 4.92 and interpreted as extremely acceptable. Trial 1 has the lowest score of 4.89 and interpreted as extremely acceptable. With an overall mean score of 4.90 and is interpreted as extremely acceptable.

Table 15. The Result of the Final Test of Blue Pea Gelatin in Terms of Texture

Items	Mean	Interpretation
Trial 1	4.93	Extremely Acceptable
Trial 2	4.92	Extremely Acceptable
Trial 3	4.95	Extremely Acceptable
Total Mean	4.93	Extremely Acceptable

Table 15 shows the evaluation result of the final test participated ten gelatin makers and vendors in Guiuan Eastern Samar. The researchers conducted three trials in final test. Each indicator has a scale of 1-5. Trial 3 got highest mean score of the texture is 4.95 and interpreted as extremely acceptable. Trial 2 has the lowest score of 4.92 and interpreted as extremely acceptable. With an overall mean score of 4.93 and is interpreted as extremely acceptable.

Table 16. The Result of the Final Test of Blue Pea Gelatin in Terms of Aroma

Items	Mean	Interpretation
Trial 1	4.90	Extremely Acceptable
Trial 2	4.91	Extremely Acceptable
Trial 3	4.88	Extremely Acceptable
Total Mean	4.90	Extremely Acceptable

Table 16 shows the evaluation result of the final test participated ten gelatin makers and vendors in Guiuan Eastern Samar. The researchers conducted three trials in final test. Each indicator has a scale of 1-5. Trial 2 got highest mean score of the aroma is 4.91 and interpreted as extremely acceptable. Trial 3 has the lowest score of 4.88 and interpreted as extremely acceptable. With an overall mean score of 4.90 and is interpreted as extremely acceptable.

Table 17. The Result of the Final Test of Blue Pea Gelatin in Terms of Color

Items	Mean	Interpretation
Trial 1	4.95	Extremely Acceptable
Trial 2	4.97	Extremely Acceptable
Trial 3	4.94	Extremely Acceptable

Total Mean	4.95	Extremely Acceptable
-------------------	-------------	-----------------------------

Table 17 shows the evaluation result of the final test participated ten gelatin makers and vendors in Guiuan Eastern Samar. The researchers conducted three trials in final test. Each indicator has a scale of 1-5. Trial 2 got highest mean score of the color is 4.97 and interpreted as extremely acceptable. Trial 3 has the lowest score of 4.94 and interpreted as extremely acceptable. With an overall mean score of 4.56 and is interpreted as extremely acceptable.

Table 18. Summary on the Overall Perceptions of the Respondents on Final Test.

Indicator	Mean	Interpretation
Flavor	4.43	Extremely Acceptable
Appearance	4.90	Extremely Acceptable
Texture	4.93	Extremely Acceptable
Aroma	4.90	Extremely Acceptable
Color	4.95	Extremely Acceptable
Total Mean	4.82	Extremely Acceptable

The table 18 shows the evaluation result of the final test participated ten gelatin makers and vendors in Guiuan Eastern Samar. Each parameter has 1-5 scale. Among of the parameters, color had the highest mean score of 4.95 which is interpreted as extremely acceptable. This means that the respondents of the final test are pleased with the appearance they feel whenever they eat the rose petal ice cream. In the other hand, the indicator Flavoring ranked lowest among the group and was rated 4.43 but still, interpreted as an extremely like. This just proves that in terms of flavoring, the researcher’s needs to improve the flavor of the product enable to become more palatable for the target customers.

Overall Mean Result

Table 19. Overall Perception of Respondents for Blue Pea Gelatin.

Items	Benchmark	Pilot Test	Final Test	Overall	Interpretation
--------------	------------------	-------------------	-------------------	----------------	-----------------------

	Test			Result	
Flavor	3.36	4.05	4.43	3.95	Highly
Appearance	4.30	4.89	4.90	4.70	Extremely Acceptable
Texture	4.7	4.92	4.93	4.85	Extremely Acceptable
Aroma	4.60	4.86	4.5	4.65	Extremely Acceptable
Color	4.44	4.90	4.56	4.63	Extremely Acceptable
General Acceptability	4.28	4.72	4.66	4.56	Extremely Acceptable
TOTAL					Extremely Acceptable
	25.67	28.34	27.98	27.34	Extremely Acceptable
Grand Mean	4.28	4.72	4.66	4.56	Extremely Acceptable

Table 19 shows the overall perception on acceptability of Blue Pea Gelatin of the respondents. For the benchmark test it has a total mean score of 4.28 with corresponding interpretation of extremely acceptable; the pilot test has a total mean score of 4.72 with corresponding interpretation of extremely acceptable; the final test has a total mean score of 4.66 with corresponding interpretation of highly acceptable. This means that the respondents of Eastern Samar State University Guiuan Campus rated the product development known as the Blue Pea Gelatin to be extremely acceptable.

General Acceptability of the Blue Pea Gelatin

Table 20. The Result of the Pilot Test of Blue Pea Gelatin in Terms of General Acceptability

Items	Mean	Interpretation
Trial 1	4.48	Extremely Acceptable
Trial 2	4.71	Extremely Acceptable
Trial 3	4.82	Extremely Acceptable
Total Mean	4.67	Extremely Acceptable

Table 20 shows the evaluation result of the tests participated by participants of the study. The researchers conducted three trials in pilot test. Each indicator has a scale of 1-5. Trial 3 got highest mean score of the general acceptability is 4.82 and interpreted as extremely acceptable. Trial 1 has the lowest score of 4.48 and interpreted as extremely acceptable. With an overall mean score of 4.67 and is interpreted as extremely acceptable.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATION

This chapter presents the summary findings, conclusions and the recommendation of the study.

Summary of Findings

The study determined the sensory of acceptability of Blue Pea Gelatin with the following objectives:

1. Develop a new flavor of Gelatin.
2. Evaluate the acceptability level of the Blue Pea Gelatin through the following indicator:
 - 2.1 Flavor
 - 2.2 Appearance
 - 2.3 Texture
 - 2.4 Aroma
 - 2.5 Color
3. Determine the general acceptability of the Blue Pea Gelatin.

This study determined the sensory acceptability of blue pea based on commercial flavor for making a gelatin.

The development of blue pea gelatin evident to the following characteristics: flavor, appearance, texture, aroma, colour, and general acceptability.

A total of 70 individuals considered as the respondents of the study. . The respondents of the study were the thirty (30) selected BTVTED students, BTLED students and BSIT students, twenty (20) from the College of Education, and ten (10) from College of Technology for the benchmark test, and thirty (30) Faculty members in ESSU-Guiuan Campus were asked

to become the respondents for the pilot test and ten (10) gelatin makers and vendors for the final test.

A score card was used as an instrument to determine the acceptability of the consumers. To quantify the responses, mean was used to know the acceptability of the blue pea gelatin in terms of flavor, appearance, texture, aroma, color and general acceptability.

The evaluation result of the benchmark test participated by Thirty selected students from the College of Education and College of Technology, with 10 BTVTED students and 10 BTLED students, and 10 BSIT students. Each indicator has the scale of 1-5. Among the parameters, texture was the highest mean score of 4.7 which means that the respondents were extremely acceptable the product. However, flavor was the lowest mean score of 3.36 and interpreted as acceptable. The overall mean in the pilot test garner the score of 4.48 and was interpreted as extremely acceptable.

The pilot test participated by thirty faculty members of ESSU Guiuan Campus. Each parameter has the scale of 1-5. Among the parameters, texture was the highest mean score of 4.92 which interpreted as extremely acceptable, that means the respondents likes the texture of the product. Meanwhile, aroma was the lowest mean score of 4.05 which also interpreted as extremely acceptable. This means that in terms of aroma should be improve in order to attract customers through the smell of the product. The overall mean in the benchmark test got the score of 4.48 and was interpreted as extremely acceptable.

Moreover, the final test participated ten gelatin makers and vendors in Guiuan Eastern Samar. Each parameter has 1-5 scale. Among of the parameters, color had the highest mean score of 4.95 which is interpreted as extremely acceptable. This means that the respondents of the final test are pleased with the appearance they feel whenever they eat the rose petal ice cream. In the other hand, the indicator Flavoring ranked lowest among the group and was rated 4.43 but still, interpreted as an extremely like. This just proves that in terms of flavoring, the researcher's needs to improve the flavor of the product enable to become more palatable for the target customers.

Conclusion

A conclusion had been drawn based on the finding of the study.

Based in the result of the test conducted, Blue Pea Gelatin was extremely liked by the consumer. The blue pea flower is not only good for drinking tea but can also be used for

desserts. This is a practical use for the raw products since all are affordable if not free and are available on all seasons.

Recommendation

Based on our conclusion the following recommendation is drawn:

4. To the future researchers may conduct another research using blue pea as an ingredient.
5. There are a numerous ways to add flavor to gelatins, healthy even.
6. Lastly, further study is needed to improve the packaging of the product.

REFERENCES

bbcgoodfood.com (2021) Gelatin. Retrieved on June 21, 2021 from the website <https://www.bbcgoodfood.com/glossary/gelatin-glossary>

Cambridge Dictionary (2021). Definition of Flavor. Retrieved on June 21, 2021 from the website <https://dictionary.cambridge.org/us/dictionary/english/flavor>

Dictionary.com (2021) Definition of Appearance. Retrieved on June 21, 2021 from the website <https://www.dictionary.com/browse/appearance>

Dictionary.com (2021) Definition of Aroma. Retrieved on June 21, 2021 from the website <https://www.dictionary.com/browse/aroma>

Dictionary.com (2021) Definition of Gelatin. Retrieved on June 21, 2021 from the website <https://www.dictionary.com/browse/gelatin>

Dictionary.com (2021) Definition of Taste. Retrieved on June 21, 2021 from the website <https://www.dictionary.com/browse/taste>

Dictionary.com (2021) Definition of Texture. Retrieved on June 21, 2021 from the website <https://www.dictionary.com/browse/texture>

Advameg, Inc. (2021). How Products are Made. Gelatin. Retrieved on June 23, 2021 from the website <http://www.madehow.com/Volume-5/Gelatin.html>

Jeyaraj, Ethel Jeyaseela, Yu Yan Lim, Wee Sim Choo. Extraction methods of butterfly pea (*Clitoria ternatea*) flower and biological activities of its phytochemicals. Retrieved on June 21, 2021 from the website <https://link.springer.com/article/10.1007/s13197-020-04745-3>

Kosia, Piya, Kanjana Sirisidthi, Kanitta Jiraungkoorskul, Wanee Jiraungkoorskul. (2012) Review on Ethnomedicinal uses of Memory Boosting Herb, Butterfly Pea, *Clitoria ternatea*. Retrieved on June 21, 2021 from the website https://www.researchgate.net/publication/305926576_Review_on_Ethnomedicinal_uses_of_Memory_Boosting_Herb_Butterfly_Pea_Clitoria_ternatea

Lui, Dasong, Mehdi Nikoo, Gokhan Boran, Peng Zhou, Joe M Regenstein. (2015). Collagen and gelatin. Retrieved on June 23, 2021 from the website <https://pubmed.ncbi.nlm.nih.gov/25884286/>

MedicineNet. (2021). 8 Health Benefits of Blue Clitoria Ternate. Retrieved on June 21, 2021 from the website https://www.medicinenet.com/8_health_benefits_of_blue_clitoria_ternate/article.htm

Oguis, Georgianna K, Edward K. Gilding, Mark A. Jackson and David J. Craik. (2019). Butterfly Pea (*Clitoria ternatea*), a Cyclotide – bearing plants with applications in agriculture and medicine. Retrieved on June 21, 2021 from the website <https://www.frontiersin.org/articles/10.3389/fpls.2019.00645/full>

Suraweera Arachchilage Tharindu Lakshan, Nileththi Yasendra Jayanath, Walimuni Prabhashini Kaushalya Mendis Abeysekera, and Walimuni Kanchana Subhashini Mendis Abeysekera. (2019). A Commercial Potential Blue Pea (*Clitoria ternatea*) Flower Extract Incorporated Beverage Having Functional Properties. Retrieved on June 21, 2021 from the website <https://www.hindawi.com/journals/ecam/2019/2916914/>

Teahow.com. (2021) Blue Tea – Benefits, Side Effects, Everything You Need to Know. Retrieved on June 21, 2021 from the website <https://teahow.com/blue-tea-benefits-side-effects-everything-you-need-to-know/>

Appendix A

ORE CARD FOR ACCEPTABILITY OF BLUE PEA (*Clitoria ternatea*) FLOWER FLAVORED GELATIN

Name: _____

Date: _____

Direction: Evaluate the samples presented as to flavor, appearance, texture, aroma, color and general acceptability by checking the number of your choice.

Rating	Interpretation
5	Highly acceptable
4	Acceptable
3	Moderately acceptable
2	Slightly acceptable
1	Not acceptable

Criteria	Flavor	Appearance	Texture	Aroma	Color	General Acceptability
5						
4						
3						
2						
1						

Comments and Suggestions:

Evaluator's Signature: _____

© GSJ

LUMAGBAS, NORVIEE ANN ARGANDA