Research Journal in Business and Economics
ISSN: 3078-381X
DOI: 10.61424/rjbe
Journal Homepage: www.bluemarkpublishers.com/index.php/RJBE

RJBE
BLUEMARK PUBLISHERS

| RESEARCH ARTICLE

Acceptability of Creeping Cucumber (Melothria Pendula) Jam

Loberiano, Jackylyn B[1], Princillo, Gherose B[2], Quiza, Kim Herald A[3], Gajelan, Emilita E[4], De Luna, Cresila[5], Alon, Darlene A[6], Alayon, Jinky M[7], Yarzo, Monica[8], Percela, Jerico[9] ✉ and Biasong, Harvey[10]
[12345678910]College of Business Management and Accountancy, Eastern Samar State University Guiuan Campus, Philippines
Corresponding Author: Percela, Jerico, **E-mail**: pagaspasjeyvey@gmail.com

| ABSTRACT
This study was conducted to develop a new product called Creeping Cucumber Jam. It was evaluated to determine its acceptability in terms of appearance, aroma, taste, texture, and general acceptability. This study involved 60 respondents, which included students from the College of Business Management and Accountancy as well as some faculty members of the college and the researchers themselves. The respondents were given a chance to taste the product and asked them to evaluate it using score cards to give comments to the product they tasted. The information gathered out from the scorecard was consolidated and organized. They were analyzed and interpreted by using statistical tools. To evaluate the Creeping Cucumber Jam, the researchers conducted (3) trials of the following tests: benchmark test, pilot test, and final tests. The researchers discovered that from the Benchmark Test 3.38 interpreted as Acceptable, Pilot Test 3.60 interpreted as Highly Acceptable and Final Test 4.122 interpreted as Highly Acceptable. Findings of this study, shows that based on the result of this study, the respondents liked the appearance, aroma, taste, texture, and general acceptability of Creeping Cucumber Jam. The product can be helped to the local economy of Guiuan if it will be sold and the customers can now have different varieties to choose in buying their ever-favorite jam. The product is not only intended for children but for people of all ages. With the development of this product, they will not worry about the bad effect because the researchers make sure that it is healthy, nutritious and delicious. Out from this product development the future researcher can get an additional idea on how to conduct the same research.

| KEYWORDS

Creeping Cucumber, texture, Aroma, Jam

| ARTICLE INFORMATION

ACCEPTED: 09 December 2025 **PUBLISHED:** 27 January 2026 **DOI:** 10.61424/rjbe.v4.i1.676

1. Introduction

Most consumers nowadays are known for buying preserves and they might never outgrow it. Filipinos are very fond of sweet spreads or homemade fruit preserves with long-term storage and higher quality, but healthy diets are still into it. They are generally health conscious. This is the reason why some local companies are creating different preserves and jams. As related products when we speak of the word jam, strawberry jam is one of the first things that comes into our mind, coco jam and pineapple jam as well. They are considered fruit jams or sweet spreads, yes, when it comes to taste, they really have a delightful one, but do they really provide enough nutrients for the body? This is one of the questions why the proponents come up with an idea of manufacturing another kind of jam.

Jam is a thick mixture of fruit pectin, and sugar that is boiled gently but quickly until the fruit is soft and has an organic shape yet is still thick enough that it spreads easily and can form a blob. In addition to being a spread, jams are also good for fillings. It is one of the fastest and easiest things to make.

Creeping Cucumber or Pipinong Gubat is one of the best foods for your body's overall health, often referred to as a superfood. (Jockers 2012) In a technical sense, cucumbers are fruits, not vegetables. (Fruits are parts of flowering plants that come from the ovary.) But we've become accustomed to thinking and referring to cucumbers as vegetables. (Mateljan 2015) Cucumber is easy to grow. It contains no saturated fats or cholesterol. Cucumber peel is a good source of dietary fiber that helps reduce constipation and offers some protection against colon cancers by eliminating toxic a high amount of vitamin K. Vitamin K has been found to have a potential role in bone strength by promoting osteotrophic (bone mass building) activity. It also has established a role in the treatment of Alzheimer's disease patients by limiting neuronal damage in their brain. (Alex Du Toit, 2012) Nowadays, the most significant development is the frequent changes and increasing attitudes of the consumers as regards with foods. Coming up with a good business idea, as well as putting up one's own business is not that easy. The business partners must conduct several research or studies and consider the possible risks that the business will encounter. Stiff competition in the business will also be considered to design more effective marketing strategies.

The "chemical-bromatologic" analysis of this carried out in the present work, this vegetal species under study constitutes a source of water, vitamins, minerals and amazingly also proteins. The fruits of this plant, despite its reduced size, has a pleasant sweets flavor and are edible for humans. Besides, its foliage is given to livestock as forage. For this reason, this "wild cucumber" could be an additional nutritional alternative for men and animals. (Lira et. al. 1998)

Creeping Cucumber or Melothria Pendula may not be steeped in ancient methodology, but it has developed its own modern symbolism. The creeping cucumber'sCreeping Cucumber or Melothria Pendula may not be steeped in ancient methodology, but it has developed its own modern symbolism. The creeping cucumber's growth from delicate vine to fruitful plant mirror's life own progression; simple beginnings to complex ends. This symbolism is particularly resonant in today's fast-paced world, where resistance and adaptability are treasured traits (Rankel,2024).

Promoting a healthy and convenient way of eating bread with flavorful spread by introducing Creeping Cucumber Jam to the public consumers would also benefit not just the consumers with the health nutrition content it has but also helps the Filipino farming industries in the country as well.

1.1 Purposed of the study

Since Creeping Cucumber is abundant in Guiuan Eastern Samar the proponents conducted this study to make people realize and gain knowledge on how useful the benefits of Creeping Cucumber. As such, exploring the useful benefits of Creeping Cucumber to human health considering on the main ingredients in making the jam.

1.2 Objectives of the Study

This study will determine the general acceptability of Creeping Cucumber (Melothria Pendula) Jam as a product for consumption. Specifically, this study determines the following:

1.Develop Creeping Cucumber (Melothria Pendula) Jam.

2. Evaluate the acceptability of Creeping Cucumber (Melothria Pendula) Jam in terms of the following:

a. Appearance

b. Aroma

c. Taste

d. Texture

3. Determine the general acceptability of Creeping Cucumber (Melothria Pendula) Jam.

1.3 Significance of Study

The benefactors and the benefits that they can get from the proposal products are the following:

To the Customers. In this study, the customer can gain a new flavor of jam and health benefits by eating creeping cucumber jam.

To the Community. The community will have the opportunity to make creeping cucumber jam as a local product and source of income.

To the Students. In this study, the students will learn about innovative products that will inspire them to build their businesses using creeping cucumbers.

To the Future Researchers. The result of the study will be used as a benchmark for further investigation.

1.4 Definition of Terms

To establish a clear understanding of the research, the following terms are conceptually and operationally defined:

Acceptability. The quality or state of meeting one's needs adequately (Miriam-Webster 2024).

In this study, acceptability means how consumers accept the sensory properties of creeping cucumbers that significantly influence consumers preferences and acceptance.

Appearance. A food presentation which refers to the art of modifying, processing, arranging, or decorating food to enhance it aesthetics appeal. (2024).

In this study the visual characteristics of the jam, including color, clarity, and consistency.

Aroma. A distinctive typically pleasant smell. (Meriam Webster 2024)

In this study, the scent or smell of the jam, which contributes significantly to its overall flavor experience. Aroma is detected through olfactory senses and influence the perception of taste.

Creeping Cucumber. A small herbaceous vine (Melothria Pendula) bearing oblong green fruits. (Hassan et al.2023).

In this study, it is the main ingredient in making Creeping Cucumber Jam.

Jam. A food made by boiling fruit and sugar to a thick consistency. (Meriam Webster 2024).

In this study, jam is the output of this research. It is a product made from creeping cucumber.

Taste. The sensation of flavor perceived in the mouth and throat on contact with a substance. (Meriam Webster 2019).

In this study, taste is the flavor profile experience when the jam is consumed which includes basic sensation such as sweetness, sourness, bitterness, and saltiness.

Texture. The feel, appearance, or consistency of a surface substance. (Meriam Webster 2024).

In this study, texture is the mouthfeel of the jam, including its viscosity, smoothness, and any presence of chunks or graininess. Texture affects how the product is experienced when eaten and influences overall satisfaction.

2. Review of Related Literature and Studies

This chapter presents the related literature and studies identified through comprehensive research conducted by the researchers. Additionally, the information compiled in this chapter facilitates a deeper understanding of aspects that contrast with or resemble the present study.

2.1 Related Literature

Melothria Pendula, also known as the creeping cucumber or the Guadalupe cucumber, is a plant in the Benincaseae tribe. The plant is especially prominent in the Southeastern United States. The plant resembles the cultivated

cucumber, possessing miniature yellow flowers, similar leaf shapes, same leaf patterns, as well as similar growth patterns. Creeping Cucumber (Melothria Pendula) is a small herbaceous vine bearing oblong green fruits. It looks like a cucumber vine plant. The herbaceous perennial has yellow, sauce-shaped flowers that bloom in fall and summer and are about an inch in size. The plant also has dark green foliage and tiny, light green berries that grow along the creeping cucumber vine. Melothria Pendula, also known as a creeping cucumber or the Guadeloupe cucumber, is a plant in the Cucurbiteae tribe. The plant resembles the cultivated cucumber, with some leaf patterns, as well as similar growth patterns. The unripe berries strongly resemble minuscule watermelons raw. (Ongzi 2023)

Creeping Cucumber can be found growing wild along riverbanks, streams, and in lush forests. Farmers and gardeners also occasionally broadcast the seeds in cultivated fields and along with forested edges of riparian and semi-riparian habitats to increase the plant's overall availability.

One of the most prominent benefits of this vine, which is the most discussed, is its ability to produce tiny fruits that taste exactly like cucumbers while looking like watermelons, therefore serving as a healthy snack that can be easily grown in a garden. These mini fruits are pleasant and slightly tangy to taste and packed with nutrition, said to be even more than the English cucumbers. Creeping cucumbers are said to contain great amounts of water, therefore helping with dehydration issues, as well as various other nutrients such as minerals, fiber, vitamins, carbohydrates, and a good amount of protein in. Not only do they serve tasty and tangy flavored snacks, but they are also greatly healthy at the same time. When unripe, these fruits can be consumed as much as wanted. However, the ripe versions of these jellybean-like fruits can be used for medicinal purposes like digestive medicines with the purgatives and laxatives contained in the fruit. There are no additional procedures required for the growth of more than one plant of these vines; one can grow them simply from the seeds that are available inside fruits produced by the previous plant. Therefore, one plant can grow an abundant number of plants further. The creeping cucumbers do not require very much care and can grow abundantly under minimal care, given ideal conditions are provided, thriving on their own. However, this plant can grow out of hand if left unmonitored, and therefore, pots of specific measurements and bindings must be provided to keep it in check. An exciting benefit about this unique vine remains that it is a supporter of native pollinators, which contains a list of sweat bees as well as carpenter bees, who are often referred to as the unsung heroes belonging to the pollination world. (housing.com.)

Jams that contain real sugar are also an incredible source of energy and fiber. Jams with real sugar help curb hunger, meaning that you don't need to consume as much to feel satisfied. The pectin in fruit jams also acts as a fiber that can aid in digestion. Pectin is what's known as a "soluble fiber," which means that it turns into a gel-like state in your digestive system. Soluble fibers help reduce constipation and are an important food source for the healthy bacteria that live in your gut. Boost your immune system no image There is also no longer any doubt that it is easier, cheaper, quicker, and smarter to prevent an illness than to treat it. Fruit jams are rich in immune-improving substances such as natural fiber, minerals, probiotics, and vitamin A, which are well-established for boosting immunity, helping the immune system fight off bacteria and viruses. Improve your digestion no image So many of us don't give much thought to our digestive system, yet it holds the key to optimal health. Countless research shows that the key to a healthy body is a healthy gut. Jam fruits contain great amounts of dietary fiber, folate (folic acid) and potassium to keep our digestion moving along and lubricated, making you less likely to get constipated. Reducing the risks of cardiovascular diseases no image heart disease accounts for nearly one-third of all deaths worldwide and diet plays a major role in heart health and can impact your risk of heart disease. Eating fruit jams can help boost the health of the heart by providing a range of vitamins, minerals, antioxidants, and fiber. Therefore, the nutrient-rich jams could reduce the risk of stroke, heart attack, and all other potential cardiovascular diseases. Smoothen your skin without image Fruit jams are also loaded with antioxidants, which help to soften the skin and keep it looking supple, rebuild youthful skin from the inside out. They are also an excellent source of dietary fiber that aids in riding the body of toxins. Taking care of your skin results in more than just good health, it also does a good job of making you look young and healthy. (Lifestyle 2019).

Melothria Pendula L., a wild relative of cucurbit crops, is also used for food and as a medicinal plant in Mexico. The objective of this study was to ecogeographical characterize the known populations of M. pendula in Mexico, determining its adaptive range and possible sites for in situ and ex situ conservation. To achieve this goal, we compiled a dataset of 1270 occurrences of M. pendula from herbarium and botanical databases and individual

observations. Adaptive scenarios were generated through the development of an ecogeographic land characterization (ELC) map, preceded by the identification of abiotic variables influencing the species' distribution. Eleven bioclimatic, edaphic, and geophysical variables were found to be important for the species' distribution. The ELC map obtained contained 21 Eco geographic categories, with 14 exhibiting the presence of M. pendula. By analyzing Eco geographic representativeness, 111 sites of high interest were selected for the efficient collection of M. Pendula in Mexico. Eight high-priority hotspots for future in situ conservation of M. pendula were also identified based on their high ecogeographic diversity, with only three of these hotspots located within protected natural areas. In this study, ecogeographic approaches show their potential utility in conservation prioritization when genetic data is scarce, a very common condition in crop wild relatives.

The cucumber plant is generally a vine with large leaves and curling tendrils. The cucumber plant may have more than five or six main stems from which the tendrils branches. The leaves arranged alternately on the vines in this plant. The flowers of the cucumber plants are yellow and about four centimeters in diameter. The fruits of the cucumber plant is a curved cylinder shaped rounded at both ends. The length of the fruits of the cucumber measures about sixty centimeters and ten centimeters in diameter. The cucumber plants are annual plants; they survive only one growing season. The vines of the cucumber plants may reach up to five meters in length. Cucumber plants may originate from the foothills of the Himalayas. The cucumbers are generally fruit but are also used as a fresh vegetable and are also consumed freshly in salads. Some varieties of cucumber are grown for pickles. Yellow varieties of cucumber are generally cooked before consumption. Cucumber (Cucumis sativus L.) is an important vegetable crop and has a chromosome number 2n = 14(Pal, 2020).

Ethiopia is the home of horticulture, and several vegetables are growing in many parts of the country. However, cucumber is not produced on a larger scale by smallholder farmers. This review aims to assess the trends, prospects, and challenges of cucumber production in Ethiopia. Countries in the world are cultivating cucumber for different purposes, and it is notable for its nutrition and health prominence over other Cucurbitaceae groups. A 100-gm cucumber serving could provide an average of 15 Kcal (energy), 3.6 gm (carbohydrate), 2–21% (vitamins), and 2–4% (minerals). Although Ethiopia has promising potential for cultivation, the production trend is indicating insignificant. The area covered by cucumber was 40 ha (2002) and 76 ha (2021). The production as well as growth rate of the crop for about 20 consecutive years is very low. On the contrary, the health risks and malnutrition problems in Ethiopia are remarkably skyrocketing. Stunting, wasting, and underweight problems are still enduring as key complications for Ethiopia. The production system and the improvement process of cucumber are not supported by technology. Cucumber breeding, pest, and disease control activities are also challenged by multiple factors. Awareness gaps and poor government commitment are also some of the hindrances. Ministries and research institutes are not engaging in research activities. Papers are not published on cucumbers to show the trend, prospects, and gaps. However, from the experiences of developed nations, government commitment and instituted participation are the key actors for cucumber improvement and yield maximization that Ethiopia should take into account.

Cucumbers also have external health benefits which may help to relieve sunburn pain, and swelling (Uzal, 2022). Although cucumber is growing worldwide, Asia, Euro-Asia, and the Middle East regions are the main producers (Heigermoser, 2022). However, the production and productivity of cucumbers in Africa in general and Ethiopia in particular is very low. The reasons for low production and yield are lack of attention by the government, societal awareness problems, scarcity of improved varieties, pest and disease complications, and soil fertility diminution (Prasad & Kothari, 2022).

Most Ethiopian farmers are not only aware about the cultivation, consumption, economic value, health, and nutritional value but also of cucumber crop at all. The research centers which are conducting experiments and demonstrations on cucumber are very few. Only the Melkassa and Sirinka Research Centers in Ethiopia are working on cucumber crops. Similarly, all higher education institutions (Ethiopian universities) are not partaken in the research activities of cucumber. Cucumber improvement (breeding) and processing technologies are still abandoned areas, and there are no adequate research articles, working papers, books, training manuals, leaflets, and newspapers published on cucumber production in Ethiopia. Seminars, conferences, and workshops are also not carried out. The scenario logical assumptions on cucumber crops are abstained from the Ethiopia's agriculture

system. Remarkably, Ethiopia is a food and nutrition insecure country with more than 120 million population in Africa (Giller, 2021). The country is known for its complex and complicated challenges of malnutrition (stunting, wasting, and underweight) and concurrence of vitamin and mineral deficiencies (Egbon, 2022). Thus, the purpose of this review is to assess the trends, prospects, and challenges of cucumber production in Ethiopia.

According to the 2018 world production report, China (67,601,863 tons), Turkey (1,890,904 tons), Russia (1,604,346 tons) and Iran (650,882 tons) are the largest cucumber producer countries (Figure 1). The world yield average of cucumber is reported to be between 15–22 ton (X. Liu et al., 2020).

In 2015 and 2016, Ethiopia has exported its small quantity of cucumber in to Djibouti, United Arab Emirates (UAE), Saudi Arabia, Somalia and Nigeria. However, more than 95% was exported to Djibouti.

Researchers described that cucumber is a tender annual with a trailing and succulent branched stem (John & Antony, 2010). Cucumbers are vine crops that take up much space, and the vines can grow to 6 to 8 feet longer and can trail across the ground in large gardens (Molaei & Ghatrehsamani, 2022). Cucumber is a creeping vine that grows up trellises or other supporting frames, wrapping around them with thin, spiraling tendrils. Cucumbers have a single taproot (the plant's main root) that can reach up to 120 cm underground, and the rest of the root system extends along the surface and is only approximately 60 cm deep (Sarkar et al., 2022). Cucumber breeders reported that it has separate male and female flower organs on the same plant (Pandey & Kujur, 2022). Nevertheless, male flowers are eminent due to the lack of a small fruit behind them, and they produce the pollen required to form the fruit but not the fruit itself (Vignati et al., 2022). However, female flowers do, and male flowers appear to be on a thinner stem, and if there are no male or female flowers on the plant, the cucumber plant will flower but produce no fruits (Behera et al., 2022). Researchers recommended planting cucumber seedlings in the greenhouse when they have two or three leaves (Basirat & Mousavi, 2022). They can also be suggested to plant 60 cm apart in greenhouse borders enriched with plenty of garden compost or in growing bags with two plants per bag and grow them in large containers filled with peat-free multipurpose compost (Chaudhary, 2022). The African horned cucumber is described as having an oval shape, approximately 6 cm in diameter and 10 cm in length with sharp prominent spines, and the immature fruit is reported to be dark green with gray specks, ripening to bright orange (Staeck, 2022). Most vine crops benefit from additional hives to promote pollination, and researchers reported that all vine crops depend on insects to transfer pollen from male to female flowers and that each female flower must be visited 15–20 times for proper pollination to take place (Rahimi et al., 2022). Cucumber is a creeping vine that roots in the ground and grows on support frames; the plant has large leaves that custom shade over the fruit, and the fruit also has a lengthened approximately cylindrical shape (R. Kumar et al., 2022). Depending on the species, cucumbers are set to yield 50 to 70 days once planted, and depending on their use, cucumbers are picked by size and taste good when collected immature, and they should not reach the yellowish phase as they become bitter as they grow larger (Ortas, 2022). Harvests array from 1 to 3 pounds of fruit per plant per week throughout the highest yield period, and a distinctive 12-week yield period in a well-managed crop can produce an aggregate of 20–25 pounds of fruit per plant (Wang et al., 2022). Marketable shares of cucumbers are prepared by size and quality and packed in wooden or cartoon containers (Babla et al., 2022).

Cucumber has a wide range of advantages for human beings (Lobine et al., 2022). Researchers indicated that cucumbers contain calories, vitamins and minerals (Zargar Shooshtari et al., 2020). In addition, the crop has a highwater content, which (stunting, wasting, and underweight) and concurrence of vitamin and mineral deficiencies (Egbon, 2022). Thus, the purpose of this review is to assess the trends, prospects, and challenges of cucumber production in Ethiopia.

According to the 2018 world production report, China (67,601,863 tons), Turkey (1,890,904 tons), Russia (1,604,346 tons) and Iran (650,882 tons) are the largest cucumber producer countries (Figure 1). The world yield average of cucumber is reported to be between 15–22 ton (X. Liu et al., 2020). In 2015 and 2016, Ethiopia has exported its small quantity of cucumber into Djibouti, United Arab Emirates (UAE), Saudi Arabia, Somalia and Nigeria. However, more than 95% was exported to Djibouti.

Researchers described that cucumber is a tender annual with a trailing and succulent branched stem (John & Antony, 2010). Cucumbers are vine crops that take up much space, and the vines can grow to 6 to 8 feet longer and can trail across the ground in large gardens (Molaei & Ghatrehsamani, 2022). Cucumber is a creeping vine that grows up trellises or other supporting frames, wrapping around them with thin, spiraling tendrils. Cucumbers have a single taproot (the plant's main root) that can reach up to 120 cm underground, and the rest of the root system extends along the surface and is only approximately 60 cm deep (Sarkar et al., 2022). Cucumber breeders reported that it has separate male and female flower organs on the same plant (Pandey & Kujur, 2022). Nevertheless, male flowers are eminent due to the lack of a small fruit behind them, and they produce the pollen required to form the fruit but not the fruit itself (Vignati et al., 2022). However, female flowers do, and male flowers appear to be on a thinner stem, and if there are no male or female flowers on the plant, the cucumber plant will flower but produce no fruits (Behera et al., 2022). Researchers recommended planting cucumber seedlings in the greenhouse when they have two or three leaves (Basirat & Mousavi, 2022). They can also be suggested to plant 60 cm apart in greenhouse borders enriched with plenty of garden compost or in growing bags with two plants per bag and grow them in large containers filled with peat-free multipurpose compost (Chaudhary, 2022). The African horned cucumber is described as having an oval shape, approximately 6 cm in diameter and 10 cm in length with sharp prominent spines, and the immature fruit is reported to be dark green with gray specks, ripening to bright orange (Staeck, 2022). Most vine crops benefit from additional hives to promote pollination, and researchers reported that all vine crops depend on insects to transfer pollen from male to female flowers and that each female flower must be visited 15–20 times for proper pollination to take place (Rahimi et al., 2022). Cucumber is a creeping vine that roots in the ground and grows on support frames; the plant has large leaves that custom shade over the fruit, and the fruit also has a lengthened approximately cylindrical shape (R. Kumar et al., 2022). Depending on the species, cucumbers are set to yield 50 to 70 days once planted, and depending on their use, cucumbers are picked by size and taste good when collected immature, and they should not reach the yellowish phase as they become bitter as they grow larger (Ortas, 2022). Harvests array from 1 to 3 pounds of fruit per plant per week throughout the highest yield period, and a distinctive 12-week yield period in a well-managed crop can produce an aggregate of 20–25 pounds of fruit per plant (Wang et al., 2022). Marketable shares of cucumbers are prepared by size and quality and packed in wooden or cartoon containers (Babla et al., 2022).

Cucumber has a wide range of advantages for human beings (Lobine et al., 2022). Researchers indicated that cucumbers contain calories, vitamins and minerals (Zargar Shooshtari et al., 2020). In addition, the crop has a highwater content, which can be estimated to be approximately 96% (Elavarasan et al., 2022). The highwater content can help to lose weight in several ways, and this is an admirable solution for obese and overweight people, particularly in the developed world (Kim & Cho, 2022). Additionally, water acts as a broom and sweeps the waste products from the body, and cucumber is thus a great detox (A. Kumar et al., 2020). Cucumbers not only add freshness and flavor to salads, sandwiches, and side dishes but also replace high-calorie substitutes (Gupta et al., 2022). Researchers reported 16 calories in every 104 g slice and 45 calories in a 300 g entire cucumber (Tan et al., 2020). This means that anyone can eat many cucumbers without comprising additional calories that prime weight increments. Cucumber can also keep the brain healthy and is used as an anti-inflammatory perseverance (Z. Liu et al.,2022). It also reduces inflammation by inhibiting the production of inflammatory compounds called prostaglandin (Gong et al., 2022). Thus, consumption of cucumber has been reported to protect nerve cells from the decline due to aging (Kahraman & Toklu, 2022). The fiber content of cucumber can also complement the bulk of the stool and release constipation (Wali et al., 2022). Nutrition experts stated that cucumber has a higher content of phytonutrients, carotenoids, and other essential minerals than all members of the Cucurbitaceae family, such as squash, pumpkin, wild and domestic melon (Huerta-Reyes et al., 2022). Although cucumber can be used for different purposes, the following are some of the examples to be mentioned.

Oxidative pressure instigated by free radicals has been connected to cancer, heart, lung, and autoimmune diseases, and thus, cucumbers are rich in beneficial antioxidants that may reduce the risk of free radicals (Can et al., 2022). In Africa in general and Ethiopia in particular, the diseases are extensively increasing (Chandra et al., 2022). A study conducted on 30 elderly people who were exposed to cucumber powder showed they were less susceptible for those diseases (Lobine et al., 2022). Another study on cucumbers reported that it is rich in flavonoids and tannins (Bag et al., 2022). Cucumber also contains lignans and polyphenols which can help in reducing the risk of ovarian,

uterine, breast and prostate cancer (Woźniak et al., 2021). Thus, cucumber is predominantly recognized for its anticancer property and its use to keep the kidneys healthy. Hence, drinking cucumber juice at least twice every day keeps the kidneys healthy (Wali et al., 2022). Cucumber also refreshes the breath and helps to remove the odor-causing bacteria from the mouth and thus, placing a slice of cucumber on the roof of the mouth can be a natural remedy for intestinal worms (Fang et al., 2022). Cucumber is also reported as a tapeworm killer because it contains an enzyme called erepsin (M. Zhang et al., 2022). Researchers described that cucumber is one of the best home remedies for diabetes, and the hormones present in this crop are required by the pancreas to produce insulin (Bhatt et al., 2022). However, researchers have not reached one decision; instead, they agree that more research is needed to determine how cucumbers affect blood sugar levels in humans (Ozguven & Altas, 2022). In Ethiopia, food insecurity and malnutrition are still a major concern across the country, and an estimated 20.4 million people currently require food support (Yitayew & Seyoum, 2022). Acute and chronic malnutrition, vitamin A deficiency, iodine deficiency disorders, and iron deficiency are the major problems in Ethiopia (Abera et al., 2023). So, eating a healthy, balanced diet is the best way to combat malnutrition. In addition to having a lot of healthy nutrients, cucumber also contains antioxidants and a few plant components that may be able to cure or even prevent various diseases (Rolnik & Olas, 2020). Cucumber consumption daily has also been shown to lower blood sugar and bad cholesterol (Mallick, 2022). Consuming cucumbers may also have a number of positive health effects, such as weight loss, balanced hydration, and regular digestion (James, 2023). Hence, the consumption of cucumber is important to overcome the problem of malnutrition.

Cucumber production is relatively sustainable, and there is no known impact on air, water, soil, and plants (Pańka et al., 2022). The nature of cucumber is ideal for the regulation of the microclimate, and the root also helps to reduce soil erosion due to wind and runoff. The residue is also important for soil fertility improvement (Basirat & Mousavi, 2022). Researchers stated that cucumber residues can be used for the preparation of natural fertilizers such as compost (Olowoake et al., 2022). It also plays an important role in nutrient cycling and reduces organic loads (Pan & Pratolongo, 2022). Soluble nitrates and phosphates released from cucumber decomposition can be absorbed by the nearby microorganism (Zhao et al., 2022). Developed nations have been producing different outputs from cucumber residues. As composts have high water content, cucumbers compost down incredibly quickly, they will not add a large amount of bulk to the compost heap, but that moisture will help other things compost down quicker so it is all good. Researchers have stated that carbon sink reduction by fruit removal triggers respiration but not nitrous oxide emissions from the root zone of cucumber (Nett et al., 2019). Similarly, chopped or shredded cucumber leaves work well as summer mulch for many plants, allowing moisture to seep into the soil while protecting the soil from evaporative processes, and the leaves imperatively add nitrogen to the soil structure (Larkin, 2020).

Research studies have pointed out some of the problems and challenges of cucumber cultivation, such as lack of awareness, capital outlay, high input cost, lack of storage facilities, disease and pest problems, and poor market linkage (Kandegama et al., 2022). Almost all communities in Ethiopia lack knowledge about cucumber cultivation, production, processing, and marketing activities. The government is not committed to invest on cucumber and vegetable crops.

2.2 Related Studies

A healthy diet requires eating fruits and vegetables. Conserving them is the only method to extend their self-life. Fruit jams made from vegetables are becoming more and more popular in Nigeria right now. Cucumbers, or Jatropha tanjorensis L. Given their numerous health advantages, pineapples and their leaves hold great promise for making jam. The present study investigated how different concentrations of pineapple, cucumber, and jatropha leaf affected the \composite jam's functional and sensory attributes. As a control, pineapple jam without cucumbers and jatropha leaves was used (pineapple: cucumber: jatropha leaf = 100:0:0). In the experimental jam samples, the quantities of jatropha leaf (J) increased, pineapple pulp (P) decreased, and cucumber (C) remained constant. The P:C:J values are 85:10:5, 80:10:10, 75:10:15, and 70:10:20. The functional study concentrated on chemical and proximate properties, whereas the sensory examination took into account look, aroma, taste, spreadability, and general liking. Results and discussion. The experimental samples varied considerably ($P < 0.05$) in terms of total soluble solids, pH, Brix, total titratable acidity, vitamins, and minerals. The control sample (P:C:J = 100:0:0) had

significantly lower ($P < 0.05$) levels of moisture, protein, ash, fat, and fiber than the experimental samples. (Friday, O.A, 2021)

The processed sea cucumber, which is commercially known as Beach-de-Mer, has been an important source of income for most of the Pacific Island countries. However, no research has been carried out to add value to processed sea cucumbers in the Pacific Island countries. Therefore, the present investigation is the first research on sea cucumbers that were processed and converted to value added food products. In this study, Sandfish (Holothuria scabra) sea cucumbers were used to produce value added Sandfish biscuits and jams. The two different types of biscuits (sweetened and salted) and four different types of Sandfish jams were made with fruits like Guava, Banana, Lemon and Wi (wild apples or Polynesian plum). The proximate composition and sensory evaluation of Sandfish biscuits and jams were evaluated. High protein content in both biscuits (sweetened and salted Sand fish biscuits: 12.3% and 11.3%) was observed in comparison to normal biscuits (Oreo: 1%). The four sandfish jams (Lemon Sandfish jam: 11.27%, Banana Sandfish jam: 16.39%, Guava Sandfish jam: 15.37% and Wi Sandfish jam: 18.44%) had higher protein content compared to normal Fruto jam (0.26%). Wi Sandfish jam had the highest protein (18.5%) content amongst the four jams. However, there were no significant differences ($P \geq 0.05$) between the means of moisture, fat and protein content in sandfish biscuits and jams.

Sensory evaluation Chapter IV indicated sweetened Sandfish biscuits to be more acceptable in comparison to salted biscuits. Jams made of banana and Wi fruit were more acceptable compared to jams made of Guava and Lemon. However, there were no significant differences ($P \geq 0.05$) between the means of sensory characteristics of Sandfish biscuits and jams. The research indicated a positive outcome in value addition to low-cost sea cucumbers. (Timothy, B. O., 2019).

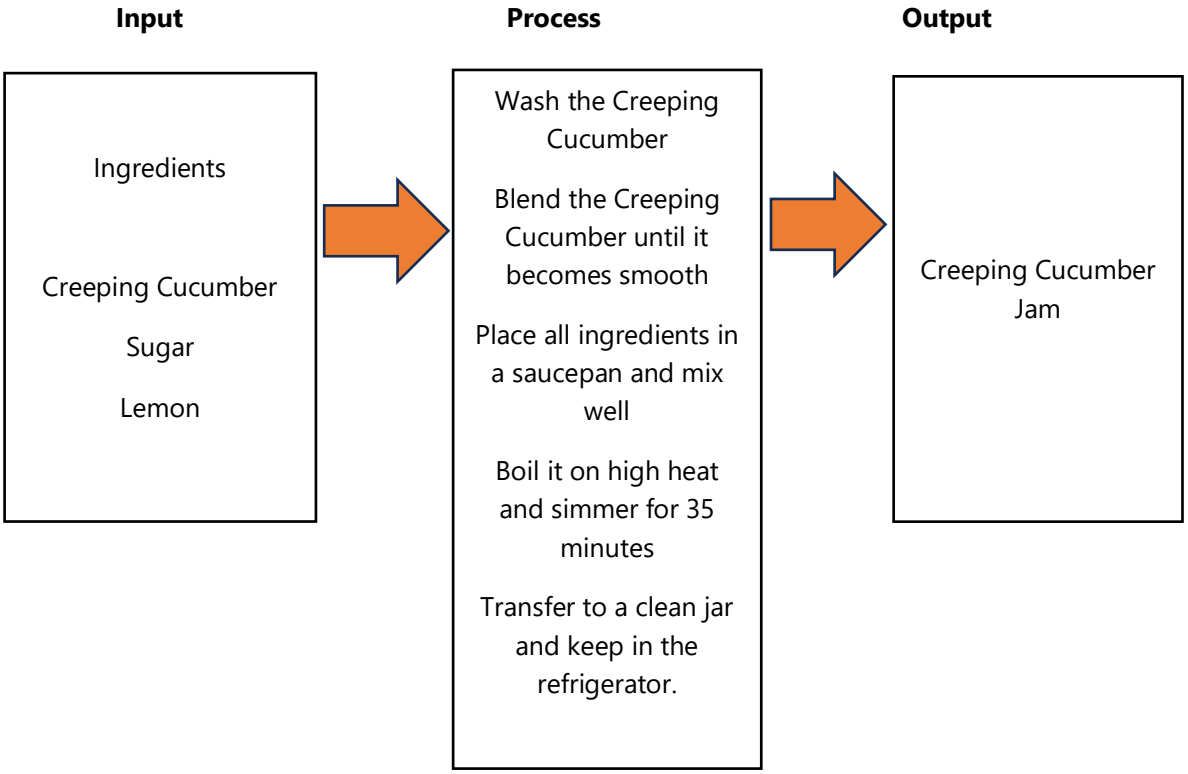
Cucumber and melon are important fruit vegetables belonging to the family Cucurbitaceae, which consists of 90 genera and 750 species (1). Cucurbits, being warm season crops, are of tropical origin and grown mostly in Africa, tropical America, and Asia, mainly Southeast Asia (2). Most cucurbits are climbing or prostrate dicotyledonous plants of the tropics, subtropics, and milder regions of the temperate zones. Most are herbaceous annuals, and some are perennials, but all are frost sensitive. Cucurbits are grown mostly for their fruits; however, the shoots and flowers of some species are used as food. They play an important role in supplying fresh fruit vegetables during the summer season in many tropical countries. This group consists of a wide range of vegetables used as salad (cucumber), for cooking purposes (all the gourds), as dessert fruits (muskmelon and watermelon), and as candied or preserved products (ash gourd). They are mostly seed-propagated, although a few are vegetatively propagated like pointed gourd (Parwal) and a few perennials like chow-chow and dry gourd (3). The cucurbits are grown for their ripe or unripe fruits, which are a good source of carbohydrates, vitamin A, ascorbic acid, and minerals.

Functional jam from blends of banana, pineapple and watermelon pulp was produced and evaluated. The aim was to develop a locally but nutritionally rich, functional jam. Various blends of fruit pulp were considered to select the best. The percentage compositions of the blends were 50:25:25; 25:50:25; 25:25:50 and 33.33:33.33:33.33 of banana, pineapple and watermelon pulps respectively. In addition to the pulp blends, 2.9% of the pectin produced from citrus peel was added together with citric acid, sodium benzoate and sugar. The entire mixture was heated at 110°C for 55 to enhance the viscosity of the blends. Proximate analyses, mineral analyses, brix, pH and Vitamin constituents of the sample were determined. The blend with the best result from the analyses was selected for rheological and sensory evaluations. The best blend was 25:25:50. The result of the proximate analyses of this best blend were 8.58% protein, 1.41% fiber, 0.38% ash, 3.92% fat, 2.52% moisture and 83.20% carbohydrate. The vitamin compositions were 1.32 mg/100 g vitamin A, 8.22 mg/100 g vitamin C and 0.015 mg/100 g vitamin E. The pH was 4.16, viscosity 58.77 cp while the specific gravity was 1.016. The mineral compositions of the best blend were 0.34 ppm iron, 28.90 ppm sodium, 80.90 ppm potassium, 1.50 ppm calcium and 0.60 ppm magnesium.

2.3 Conceptual Framework

The researchers have included all of the necessary ingredients, supplies, and tools in this study, along with the specifics of the procedure and a guide for evaluating the creeping cucumber jam's sensory qualities. The components required to make creeping cucumber jam make up the input. In terms of procedure, it comprises the actions or activities required to prepare creeping cucumber jam.

For instance, it is a procedure whereby researchers used creeping cucumber jam to create a new product.



The input- Process- output model as image in this figure was used in this study. The input were the ingredients used in this study which includes the Creeping Cucumber and sugar. The process involved the preparation and designing the product providing procedure. The results or outcomes that are generated by the process are referred to as output in this study.

3. Methodology

This chapter contained the investigative process of the research. It includes tools and equipment. This chapter also presented the research design, respondents of the study, research locale, research instruments, data gathering technique, measurement of variables and data analysis.

3.1 Materials:

Saucepan*:* A saucepan is a good tool for cooking anything that is mostly liquid. Whether that is making sauces (such as pasta sauce), soups, or tasks like stewing, simmering and boiling water.

Ladle: A large, long-handled spoon with a cup-shaped bowl, used for serving soup, stew, or sauce.

Blender: An electric mixing machine is used in food preparation for liquefying, chopping, or pureeing.

3.2 Measurements of Ingredients

Trial I	Trial II	Trail III
I cup creeping cucumber	I cup creeping cucumber	I cup creeping cucumber
¼ cup sugar	¼ cup sugar	¼ cup sugar
1 and ½ cup water	1 cup water	1 and ½ cup water
	1 tbsp kalamansi juice	½ tbsp. Kalamansi juice

3.3 Procedure

The following will be used to develop the Creeping Cucumber (Melothria Pendula) jam:

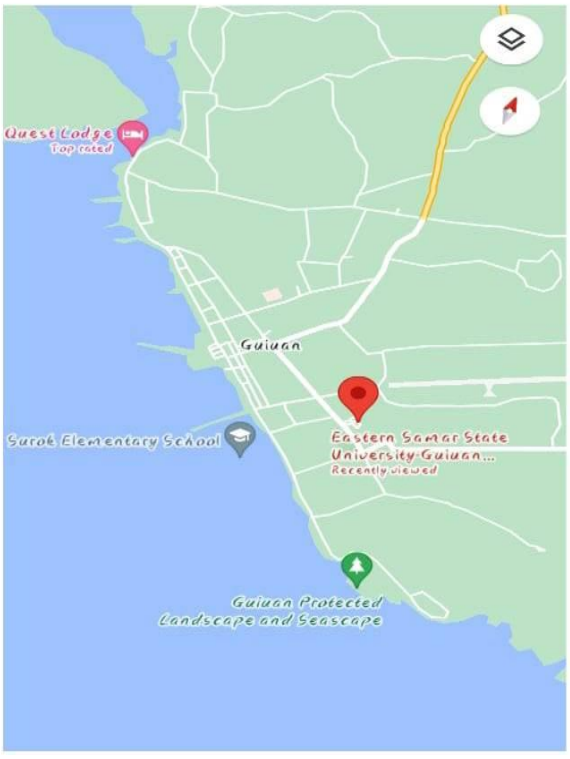
1. Wash the Creeping Cucumber.
2. Blend the Creeping Cucumber until it becomes smooth
3. Place all ingredients in a saucepan and mix well.
4. Boil it on high heat and simmer for 35 minutes.
5. Transfer to a clean jar and keep in the refrigerator.

3.4 Research Design

This study used the product development method. Product development is the process of designing, creating and marketing new products or services to benefit customers. Sometimes referred to as new product development, the discipline is focused on developing systematic methods for guiding all the process involved in getting a new product to market (Rouse 2014).

3.5 Research Locale

The study was conducted at Eastern Samar State University, Guiuan Campus, particularly in the College of Business Management and Accountancy. The product had been developed in the chemistry laboratory and was able to test the acceptability of the product participated by the selected students and faculty members in the CMBA building Guiuan Campus.



3.6 Respondents of the Study

There are 60 individuals considered as respondents of the study. For the Benchmark test, nine (9) members from researchers, for pilot test there are 30 selected third year students from Bachelor of Science in Entrepreneurship, and twenty-one (21) selected Faculty members from CBMA and CHM for final test.

3.7 Research Instrument

The researchers used a score card or Likert scale for acceptability test in this study that served as a guide for the respondent's evaluation process. The evaluation used the following indication. Aroma, Appearance, Taste, Texture packaging and general acceptability. Each indicator has a description of 1.00-5.00 is for not acceptable, 2 is slightly acceptable, 3 is for acceptable, 4 is highly acceptable, 5 is extremely acceptable.

3.8 Data Gathering Procedure

A communication letter made was addressed to the office of the Administrator, office of the dean of the college of Business, Management and Accountancy, and the office BSEntrep program head, asking permission to administer the Sensory Evaluation Tool to the selected 3rd year students of BSEntrep program, and Faculty members of College of Business Management and Accountancy. Upon giving permission to conduct study, the BSEntrep student, and faculty members were requested to answer the instrument personally handed to each of them by the researcher. The direction of filling up of the data sheet was explained thoroughly by the researchers.

Upon the retrieval of the accomplished scorecard, the data was tallied, computed, processed and interpreted.

3.9 Measurement of Variables

Mean Range	Scale	Interpretation
4.21-5.00	5	Extremely Acceptability
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

3.10 Data Analysis

The statistical instrument used to treat the respondents' answers are frequency count and mean to determine each of the criteria of the acceptability of the product. With the rating scales of the criteria of the indicators, the mean / overall result was interpreted using the following range of mean and interpretation.

Scale	Range	Description	Interpretation
5	4.21-5.00	Excellent	Extremely Acceptable
4	3.41-4.20	Very Satisfactory	Highly Acceptable
3	2.41-3.20	Satisfactory	Acceptable
2	1.81-2.40	Good	Slightly Acceptable
1	1.00-1.80	Poor	Not Acceptable

3.11 Instrument of the Study

The instrument to be used is a standardized scorecard. The researchers develop a convenient taste test survey questionnaire which then be given to the respondents to answer when they taste the product. The questionnaire

has 15 items that determine the Creeping Cucumber (Melothria Pendula) Jam on its taste, texture, appearance, general acceptability and aroma. The questions in the scorecard are designed to determine the respondents' opinion about the product to gather the needed data for Creeping Cucumber (Melothria Pendula) Jam.

4. 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 Creeping Cucumber (Melothria Pendula) Jam.

4.1 Development of the Product

To develop Creeping Cucumber (Melothria Pendula) Jam. The first thing to do was to wash the Creeping Cucumber (Melothria Pendula) in running water. Then Blend the Creeping Cucumber by using a blender. Place all ingredients in a saucepan and mix well. Boil it on high heat and simmer for 35 minutes. Transfer to a clean jar and keep in the refrigerator.

4.2 Testing the Product

To determine the sensory evaluation of Creeping Cucumber (Melothria Pendula) Jam. 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 sensory evaluation of Creeping Cucumber (Melothria Pendula) Jam.

4.3 Benchmark Test

After subjecting the product for the evaluation to the chosen respondents, the data gathered was interpreted as shown in Table 2.

***Table 2**. Summary of the Respondents on Benchmark Test.*

Items	Mean score	Interpretation
Appearance	3.55	Highly Acceptable
Aroma	3.44	Highly Acceptable
Taste	3.55	Highly Acceptable
Texture	3.00	Acceptable
Total Mean	**3.38**	**Acceptable**

Table 2 shows the evaluation result of the benchmark test participated by the researchers themselves. The researchers conducted a benchmark test; each indicator has scale 1-5. Appearance and taste got the highest mean score of 3.55 and interpreted as "Highly Acceptable". Texture got the lowest mean score of 3.00 and interpreted as "Acceptable". With an overall mean score of 3.38 and interpreted as "Acceptable".

4.4 Pilot Test

After subjecting the product for the evaluation to the chosen respondents, the data gathered was interreted as shown in Table 3.

Table 3. *Summary of the Respondents on Pilot Test.*

Items	Mean score	Interpretation
Appearance	3.87	Highly Acceptable
Aroma	3.10	Acceptable
Taste	4.13	Highly Acceptable
Texture	3.63	Acceptable
Total Mean	**3.68**	**Highly Acceptable**

Table 3 shows the result of the evaluation of the pilot test that involves the 30 selected third year students from BSEntrep. Each parameter has a scale of 1-5. Taste got the highest mean score of 4.13 and interpreted as "Highly Acceptable". Aroma got the lowest mean score of 3.10 and interpreted as "Acceptable". With an overall mean score of 3.68 and interpreted as "Highly Acceptable".

4.5 Final Test

After subjecting the product for the evaluation to the chosen respondents, the data gathered was interpreted as shown in Table 4.

Table 4. *Summary of the Respondents on Final Test.*

Items	Mean score	Interpretation
Appearance	4.19	Highly Acceptable
Aroma	3.81	Highly Acceptable
Taste	4.24	Extremely Acceptable
Texture	4.24	Extremely Acceptable
Total Mean	**4.12**	**Highly Acceptable**

Table 4 shows the result of evaluation in final testing from the 21 CBMA faculty members in ESSU-Guiuan. Each parameter has 1-5 scales. Taste and Texture got the highest mean score of 4.24 and interpreted as "Extremely Acceptable". Aroma got the lowest mean score of 3.81 and interpreted as "Highly Acceptable". With an overall mean score of 4.12 and interpreted as "Highly Acceptable".

4.6 Summary on Benchmark, Pilot and Final Test

In table 5 the Overall Mean of the Benchmark, Pilot and final test in terms of acceptability of bluebell flower (Clitoria Ternatea) tea.

Test	Mean score	Interpretation
Benchmark Test	3.38	Acceptable
Pilot Test	3.60	Highly Acceptable
Final Test	4.12	Highly Acceptable
Total Mean	3.70	Highly Acceptable

Table 5 shows the overall results of the researchers from benchmark test until final test. Benchmark test got the overall mean score of 3.38 which was interpreted as "Acceptable" and pilot test got the overall mean score of 3.60

which was interpreted 'Highly Acceptable", while final test got the overall mean score of 4.12 which was interpreted as "Highly Acceptable". This means that the respondents of Eastern Samar State University Guiuan Campus rated the product development known as the Creeping Cucumber (Melothria Pendula) Jam to be highly acceptable.

5. Summary, Conclusions, and Recommendation

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

5.1 Summary of Findings

The study determined the sensory evaluation of Creeping Cucumber *(Melothria Pendula)* Jam with the following objectives:

1. Develop a Creeping Cucumber *(Melothria Pendula)* Jam.
2. Evaluate the sensory evaluation of Creeping Cucumber *(Melothria Pendula)* Jam through the following indicator:
   2.1 Appearance
   2.2 Aroma
   2.3 Taste
   2.4 Texture
3. Determine the general acceptability of Creeping Cucumber *(Melothria Pendula)* Jam.

This study determined the sensory evaluation of Creeping Cucumber *(Melothria Pendula)* Jam. The development of the Creeping Cucumber *(Melothria Pendula)* Jam was evident to the following characteristics: Appearance, aroma, taste, texture, and general acceptability.

A total of 60 individuals were considered as the respondents in the study. The benchmark test was composed of 9 respondents from the researchers themselves. The pilot test was composed of 30 students from the BSHM. The final test was composed of 21 CBMA faculty members in ESSU Guiuan Campus.

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 Creeping Cucumber *(Melothria Pendula)* Jam in terms of appearance, aroma, taste texture and general acceptability.

The benchmark test was participated by the researchers themselves. The researchers conducted a benchmark test; each indicator has scale 1-5. Appearance and taste got the highest mean score of 2.55 and interpreted as "Acceptable". Texture got the lowest mean score of 2.38 and interpreted as "Acceptable". With an overall mean score of 2.38 and interpreted as "Acceptable". This means that during the benchmark testing, the acceptability of Creeping Cucumber *(Melothria Pendula)* Jam had been tested and approved by the respondents.

In the pilot test it was participated by 30 selected third year students from BSEntrep. Each parameter has a scale of 1-5. Each parameter has a scale of 1-5. Taste got the highest mean score of 4.13 and interpreted as "Highly Acceptable". Aroma got the lowest mean score of 3.10 and interpreted as "Acceptable". With an overall mean score of 3.68 and interpreted as "Highly Acceptable".

Moreover, during the Final Test, it was participated by 20 CBMA faculty members in ESSU-Guiuan. Each parameter has 1-5 scales. Taste and Texture got the highest mean score of 4.24 and interpreted as "Extremely Acceptable". Aroma got the lowest mean score of 3.81 and interpreted as "Highly Acceptable". With an overall mean score of 4.12 and interpreted as "Highly Acceptable".

5.2 Conclusion

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

Based on the result of the test conducted, Creeping Cucumber *(Melothria Pendula)* Jam was Highly acceptable by the consumer. Creeping Cucumber *(Melothria Pendula)* Jam is not only for adults but also for children, and for everyone who seeks healthier and new flavor in eating jam Therefore, creeping cucumber is not only wild grass but based on the result of the study creeing cucumber is also acceptable as a food flavoring especially for jam.

5.3 Recommendations

Based on our conclusion the following recommendation was drawn:

1. To the future researchers, they should conduct further research using creeping cucumber.
2. To the jam maker and manufacturer, the researchers highly recommend venturing the product as one of the flavors in jam as it is highly accepted by the community.
3. To the consumer, Creeping Cucumber *(Melothria Pendula)* Jam is safe and very healthy to the body and highly acceptable by the community.

Acknowledgment

The researchers would like to express their heartfelt gratitude to the personnel who assisted in making this study possible.

Mrs. June O. Dagsa, Market Research instructor, the researcher, would like to express deep and sincere gratitude for giving them opportunity to do this research under her guidance and approval of the researchers' communication letter before conducting the study.

Ms. Ivon L. Lavilla, their research adviser, for the concern and professional input, guidance and unselfish support that provided the much-needed direction which contributed a lot to the completion and enrichment of this piece of work.

Prof. Jordan M. Cabaguing, Program Head of the Bachelor of Science in Tourism Management, ESSU Guiuan Campus, who spent considerable amount of time in patiently guiding the researchers in the statistical aspect of this piece of work which was really of great help in determining the level of relationship between two variables.

Dr. Teresita Villa G. Lacaba, Dr. Alvin B. Lacaba, Prof. Jordan M. Cabaguing, Dr. Cecilia G. Lagramada, and **Dr. Jefrey Guimbaolibot,** members of the review committee for their insightful comments, and valuable suggestions and unfailing support for the refinement of this thesis output.

To the Respondents, the researchers would like to extend thanks for cooperating and giving their valuable time in answering the survey questionnaires and sharing their thoughts, ideas and suggestions with great honesty regarding the study.

To our classmates and friends, for their unwavering support and sharing thoughts and ideas that help the researchers to create a better concept and output of the study.

To our beloved parents, through their immeasurable support the study became possible, and also served as an inspiration to the researchers.

To our Alma Mater, Eastern Samar State University – Guiuan Campus, through the faculty and staff for their noble teaching.

To the Almighty Father, for good health, knowledge and wisdom, unconditional love, compassion, guidance and all the blessings that he has showered for the triumph of the study. To him, we offer humanity and dedicate this humble piece of work.

References

[1] Abera, M., Workicho, A., Berhane, M., Hiko, D., Ali, R., Zinab, B., Haileamlak, A., Fall, C., & Adhikari, C. (2023). A systematic review and meta-analysis of adolescent nutrition in Ethiopia: Transforming adolescent lives through nutrition (TALENT) initiative. *PLoS One, 18(4), e0280784.* https://doi.org/10.1371/journal.pone.0280784

[2] Amhara National Regional State, Ethiopia. Ethiopian Journal of Development Research, 44(1), 77–102

[3] Babla, M., Katwal, U., Yong, M.-T., Jahandari, S., Rahme, M., Chen, Z.-H., & Tao, Z. (2022). Value-added products as soil conditioners for sustainable agriculture. Resources, Conservation and Recycling, 178, 106079. https://doi.org/10.1016/j.resconrec.2021.106079

[4] Bag, S., Mondal, A., Majumder, A., & Banik, A. (2022). Tea and its phytochemicals: Hidden health benefits & modulation of signaling cascade by phytochemicals. Food Chemistry, 371, 131098. https://doi.org/10.1016/j.foodchem.2021.131098

[5] Bhatt, B., Bhatt, D., Bhatt, M. D., Karkute, S. G., Singh, P. M., Singh, J., Singh, A. K. (2022). Biotechnological Innovations in Cucumber (Cucumis sativus L.) Development—Current Scenario and Future Perspectives, the Cucumber Genome. Springer International Publishing. https://doi.org/10.1007/978-3-030-88647-9_13t
[6] Basirat, M., & Mousavi, S. M. (2022). Effect of foliar application of silicon and salicylic acid on regulation of yield and nutritional responses of greenhouse cucumber under high temperature. Journal of Plant Growth Regulation, 41(5), 1–10. https://doi.org/10.1007/s00344-021-10562-5
[7] Behera, T. K., Boopalakrishnan, G., Jat, G. S., Das Munshi, A., Choudhary, H., Ravindran, A., Kumari, S., & Kumari, R. (2022). Deriving stable tropical gynoecious inbred lines of slicing cucumber from American pickling cucumber using MABB. Horticulture, Environment, and Biotechnology, 63(2), 263–274. https://doi.org/10.1007/s13580-021-00392-5
[8] Can, H., Ozyigit, I. I., Can, M., Hocaoglu-Ozyigit, A., & Yalcin, I. E. (2022). Multidimensional scaling of the mineral nutrient status and health risk assessment of commonly consumed fruity vegetables marketed in Kyrgyzstan. Biological Trace Element Research, 200(4), 1902–1916. https://doi.org/10.1007/s12011-021-02759-2
[9] Chaudhary, C. (2022) Organic methods of Weed Control. A Monthly Peer Reviewed Magazine for Agriculture and Allied Sciences:74.
[10] Chandra, M., Kumar, K., Thakur, P., Chattopadhyaya, S., Alam, F., & Kumar, S. (2022). Digital technologies, healthcare and Covid-19: Insights from developing and emerging nations. Health and Technology, 12(2), 1–22. https://doi.org/10.1007/s12553-022-00650-1
[11] Diario de ongzi, (2023) Diario de ongzi& amp;middot;Archivos para febrerohttps://mexico.inaturalist.org/journal/ongzi/archives/2023/02
[12] Elavarasan, E., Natarajan, S. K., Bhanu, A. S., Anandu, A., Senin, M. (2022). Experimental Investigation of Drying Cucumber in a Double Slope Solar Dryer Under Natural Convection and Open Sun Drying, Innovations in Energy, Power and Thermal Engineering. Springer Singapore. https://doi.org/10.1007/978-981-16-4489-4_5
[13] Egbon, O.A., Belachew, A. M., & Bogoni, M. A. (2022). Risk factors of concurrent malnutrition among children in Ethiopia: A bivariate spatial modeling approach. All life, 15(1), 512-536.https://doi.org/10.1080/26895293.2022.2067251
[14] Fang, H., Zhou, Q., Yang, Q., Zhou, X., Cheng, S., Wei, B., Li, J., & Ji, S. (2022). Influence of combined edible coating with Chitosan and Tea polyphenol on the quality deterioration and health-promoting compounds in harvested broccoli. Food and Bioprocess Technology, 15(2), 407–420. https://doi.org/10.1007/s11947-021-02751-7
[15] Friday, O.A. (2021). [Title of Study: An investigation into the Functional and Sensory Attributes of Pineapple, Cucumber, and Jatropha Leaf Jam] https://www.google.com/amp/s/housing.com/news/creeping-cucumber/amp/
[16] https://www.eattheweeds.com/creeping-cucumber-melothria-pendula/
[17] Giller, K. E., Delaune, T., Silva, J. V., van Wijk, M., Hammond, J., Descheemaeker, K., van de Ven, G., Schut, A. G., Taulya, G., Chikowo, R., & Andersson, J. A. (2021). Small farms and development in sub-Saharan Africa: Farming for food, for income or for lack of better options? Food Security, 13(6), 1431–1454. https://doi.org/10.1007/s12571-021-01209-0
[18] Gupta, P., Bishoyi, A. K., Rajput, M., Trivedi, U., Singh, N., Sanghvi, G. (2022). Recent Trends in Microbe-Based Food Hydrocolloids, Recent Advances in Food Biotechnology. Springer Nature Singapore. https://doi.org/10.1007/978-981-16-8125-7_11
[19] Hassan, A.; Khan, M.K.I.; Fordos, S.; Usman, A.; Arif, S.; Aslam, A. Production and Acceptability of Jam Produced from Kiwi Fruit and Cucumber. Boil. Life Sci. Forum 2023, 26 118https://doi.org/10.3390/Foods2023-15022
[20] Huerta-Reyes, M., Tavera-Hernández, R., Alvarado-Sansininea, J. J., & Jiménez-Estrada, M. (2022). Selected species of the Cucurbitaceae family used in Mexico for the treatment of Diabetes Mellitus. Molecules, 27(11), 3440.https://doi.org/10.3390/molecules27113440
[21] James, R. (2023). Cucumber nutrition facts: cucumber calories and health benefits of Cucumbers. ORDER, 2.https://www.miamiherald.com/health-wellness/article271359332.html
[22] John, K. J., & Antony, V. (2010). A taxonomic revision of the genus Momordica L.(Cucurbitaceae) in India. Indian Journal of Plant Genetic Resources, 23(2), 172–184.
[23] Kandegama, W., Rathnayake, R. M. P. J., Baig, M. B., Behnassi, M. (2022). Impacts of Climate Change on Horticultural Crop Production in Sri Lanka and the Potential of Climate-Smart Agriculture in Enhancing Food Security and Resilience, Food Security and Climate-Smart Food Systems. Springer. https://doi.org/10.1007/978-3-030-92738-7_5
[24] Kumar, R., Ivy, N., Bhattacharya, S., Dey, A., & Sharma, P. (2022). Coupled effects of microplastics and heavy metals on plants: Uptake, bioaccumulation, and environmental health perspectives. Science of the Total Environment, 836, 155619. https://doi.org/10.1016/j.scitotenv.2022.155619
[25] Kahraman, A. N., & Toklu, H. Z. (2022). The Effects of sirtuin activators on cerebral white matter, redox biomarkers. In And Imaging Findings in Aging Brain, Redox Signaling and Biomarkers in Ageing. Springer. (pp. 303–322).https://doi.org/10.1007/978-3-030-84965-8_14
[26] Kim, J., & Cho, S. H. (2022). Macroalgal substitution effect in diet on growth, body composition, and stress resistance of juvenile sea cucumber (Apostichopus japonicus) subjected to air and low salinity exposures. Journal of Applied Phycology, 34(2), 1123–1130. https://doi.org/10.1007/s10811-022-02689-z

[27] Kumar, A., Kadam, S., Arif, M., Meena, R., & Verma, T. (2020). Legumes an alternative land use options for sustaining soil health. Agriculture & Food E-Newsletter, 2(8). .
[28] Liu, X., Li, Y., Ren, X., Chen, B., Zhang, Y., Shen, C., Wang, F., & Wu, D. (2020). Long-term greenhouse cucumber production alters soil bacterial community structure. Journal of Soil Science and Plant Nutrition, 20(2), 306–321. https://doi.org/10.1007/s42729-019-00109-9
[29] Larkin, R. P. (2020). Effects of cover crops, rotation, and biological control products on soil properties and productivity in organic vegetable production in the Northeastern US. Organic Agriculture, 10(2), 171–186.https://doi.org/10.1007/s13165-019-00257-3
[30] Liu, Z., Yan, C., Lin, X., Ai, C., Dong, X., Shao, L., Wang, S., Song, S., & Zhu, B. (2022). Responses of the gut microbiota and metabolite profiles to sulfated polysaccharides from sea cucumber in humanized microbiota mice. Food & Function, 13(7), 4171–4183.https://doi.org/10.1039/D1FO04443E
[31] Lobine, D., Rengasamy, K. R., & Mahomoodally, M. F. (2022). Functional foods and bioactive ingredients harnessed from the ocean: Current status and future perspectives. Critical Reviews in Food Science and Nutrition, 62(21), 5794–5823. https://doi.org/10.1080/10408398.2021.1893643
[32] Meriam Webster,(11 Dec. 2024) Creeping cucumber." Merriam-Webster.com Dictionary, Merriam-Webster, https://www.merriam-webster.com/dictionary/creeping%20cucumber
[33] Mallick, P. K. (2022). Evaluating potential importance of cucumber (Cucumis sativus L.-Cucurbitaceae): A brief review. International Journal of Applied Sciences and Biotechnology, 10(1), 12–15. https://doi.org/10.3126/ijasbt.v10i1.44152
[34] Molaei, F., & Ghatrehsamani, S. (2022). Kinematic-based multi-objective design optimization of a grapevine pruning robotic manipulator. AgriEngineering, 4(3), 606–625. https://doi.org/10.3390/agriengineering4030040
[35] Nett, L., Hauschild, I., & Kläring, H. P. (2019). Carbon sink reduction by fruit removal triggers respiration but not nitrous oxide emissions from the root zone of cucumber. The Annals of Applied Biology, 175(1), 111–118. https://doi.org/10.1111/aab.12516
[36] Olowoake, A., Wahab, A., Lawal, O., & Subair, S. (2022) Assessing the potential of organic wastes through vermicomposting: A case study with cucumber (Cucumis sativus). Proceedings of the National Academy of Sciences, India Section B: Biological Sciences, 92, 131–140https://link.springer.com/article/10.1007/s40011-021-01321-3
[37] Ortas, I. (2022). Agronomic practices improved cucumber productivity, nutrients uptake and quality. Gesunde Pflanzen, 74, 1–8. https://link.springer.com/article/10.1007/s10343-022-00634-1
[38] Ozguven, M. M., & Altas, Z. (2022). A new approach to detect mildew disease on cucumber (Pseudoperonospora cubensis) leaves with image processing. Journal of Plant Pathology, 104(4), 1–10. https://doi.org/10.1007/s42161-022-01178-z
[39] Pandey, S., Kujur, S. N. (2022). Importance, Distribution, Botany and Genetics, the Cucumber Genome. Springer International Publishing. https://doi.org/10.1007/978-3-030-88647-9_1
[40] Pańka, D., Jeske, M., Łukanowski, A., Baturo-Cieśniewska, A., Prus, P., Maitah, M., Maitah, K., Malec, K., Rymarz, D., Muhire, J. D. D., & Szwarc, K. (2022). Can cold plasma be used for boosting plant growth and plant protection in sustainable plant production? Agronomy, 12(4), 841. https://doi.org/10.3390/agronomy12040841
[41] Pan, J., Pratolongo, D. (2022). Soft-bottom Marine Benthos, Marine Biology a Functional Approach to the Oceans and their Organisms. CRC Press. https://doi.org/10.1201/9780429399244-10
[42] Prasad, A., & Kothari, N. (2022). Cow products: Boon to human health and food security. Tropical Animal Health and Production, 54(1), 1-20 https://doi.org/10.1007/s11250-021
[43] Rahimi, E., Barghjelveh, S., & Dong, P. (2022). A review of diversity of bees, the attractiveness of host plants and the effects of landscape variables on bees in urban gardens. Agriculture & Food Security, 11(1), 1–11. https://doi.org/10.1186/s40066-021-00353-2
[44] Rolnik, A., & Olas, B. (2020). Vegetables from the Cucurbitaceae family and their products: Positive effect on human health. Nutrition, 78, 110788. https://doi.org/10.1016/j.nut.2020.110788
[45] Salarzadeh AR, Afkhami M, Bastami KD, Ehsanpour M, Khazaali A, et al. (2012) Proximate Composition of Two Sea Cucumber Species Holothuria pavra and Holothuria arenicola in Persian Gulf. Annals of Biological Research 3: 1305-1311
[46] Sarkar, M., Chakraborty, B., & Srivastava, J. (2022). Key Diseases of Cucurbits and Their Management, Diseases of Horticultural Crops.Apple Academic Press.
[47] Staeck, L. (2022). Fascination Amazon River: Its People, Its Animals. Its Plants Springer Nature. https://doi.org/10.1007/978-3-662-64452-2
[48] Taste. "Merriam-Webster.com Dictionary, Merriam-Webster,
[49] https://www.merriem-webster.com/dictionary/texture. Accessed 12 Feb. 2025.
[50] Texture. "Merriam-Webster.com Dictionary, Merriam-Webster,
[51] https://www.merriem-webster.com/dictionary/texture. Accessed 12 Feb. 2025.
[52] Uzal, O., Baslak, L., & Yasar, F. (2022).

[53] Auswirkungen extremer melatoninbehandlungen auf morphologische und physiologische Veranderungen bei Gurkensamlingen. (Cucumis sativus L.) Gegen Kaltertress. Gesunde Pflanzen, 75(1) 1-11.https://doi.org/10.1007/s10343-022-00676-5

[54] Vignati, E., Lipska, M., Dunwell, J. M., Caccamo, M., & Simkin, A. J. (2022). Fruit development in sweet cherry. Plants, 11(12), 1531. https://doi.org/10.3390/plants11121531

[55] Wang, R., Zeng, J., Chen, K., Ding, Q., Shen, Q., Wang, M., & Guo, S. (2022). Nitrogen improves plant cooling capacity under increased environmental temperature. Plant and Soil, 472(1–2), 329–344https://doi.org/10.1007/s11104-021-05244-w

[56] Wali, A. F., Jabnoun, S., Razmpoor, M., Najeeb, F., Shalabi, H., & Akbar, I. (2022). Account of some important edible medicinal plants and their socio-economic importance. In Edible Plants in Health and Diseases (pp. 325–367). Springer. https://doi.org/10.1007/978-981-16-4880-9_14

[57] Woźniak, M., Krajewski, R., Makuch, S., & Agrawal, S. (2021). Phytochemicals in gynecological cancer prevention. International Journal of Molecular Sciences, 22(3), 1219. https://doi.org/10.3390/ijms22031219

[58] Yitayew, B., & Seyoum, A. (2022). Determinants of rural households' food insecurity status and associated coping strategies in enebsie sar Mider Woreda, East Gojjam Zone of Amhara National Regional State, Ethiopia. Ethiopian Journal of Development Research, 44(1), 77–102.

[59] Zargar Shooshtari, F., Souri, M. K., Hasandokht, M. R., & Jari, S. K. (2020). Glycine mitigates fertilizer requirements of agricultural crops: Case study with cucumber as a high fertilizer demanding crop. Chemical and Biological Technologies in Agriculture, 7(1), 1–10. https://doi.org/10.1186/s40538-020-00185-5

[60] Zhang, G., Xu, P., Wang, Y., Cao, S., Qi, X., Ren, X., & Niu, C. (2022). A novel ABC gene involved in the interaction between unripe citrus fruits and the tephritid Bactrocera minax larvae. Journal of Pest Science, 95(3), 1331–1341.https://doi.org/10.1007/s10340-021-01464-2

[61] Zhao, D., Ding, Y., Cui, Y., Zhang, Y., Liu, K., Yao, L., Han, X., Peng, Y., Gou, J., Du, B., & Wang, C. (2022). Isolation and genome sequence of a novel phosphate-solubilizing rhizobacterium bacillus altitudinis GQYP101 and its effects on rhizosphere microbial community structure and functional traits of corn seedling. Current Microbiology, 79(9), 1–12. https://doi.org/10.1007/s00284-022-02944-z

Appendix A

EDITOR'S CERTIFICATION

This is to certify that this research study entitled, **"ACCEPTABILITY OF CREEPING CUCUMBER (Melothria pendula) JAM"** prepared and submitted by **Jackylyn B. Loberiano, Gherose B. Princillo, Kim Herald A. Quiza, Emilita E. Gajelan, Harvey Biasong, Cresila De Luna, Darlene A. Alon, Jinky M. Alayon, Monica Yarzo, Jerico Percila** in partial fulfillment of the requirements for the degree **Bachelor of Science in Entrepreneurship** has been edited and reviewed in form, grammar and correct usage by the undersigned.

MARK EDSEL M. NACORDA

Editor

Appendix B

EASTERN SAMAR STATE UNIVERSITY

GUIUAN CAMPUS

GUIUAN, EASTERN SAMAR

December 2024

Dear Respondents,

Good day!

The undersigned students are presently conducting a study entitled, **"ACCEPTABILITY OF CREEPING CUCUMBER (Melothria pendula) JAM"** in this regard, we may solicit your kind cooperation by answering the survey questionnaire.

Rest assured that your responses to the questionnaires will be treated with strict confidentiality and will be used solely for the intentions of this study.

Thank you very much,

Respectfully Yours,

JACKLYN B. LOBERIANO

GHEROSE B. PRINCILLO

KIM HERALD A. QUIZA

EMILITA E, GAJELAN

HARVEY BIASONG

CRESILA DE LUNA

DARLENE A. ALON

JINKY M. ALAYON

MONICA YARZO

JERICO PERCILA

Noted:

TERESIRA VILLA G. LACABA, D.M.

CBMA, Dean