# DEVELOPMENT OF LAMBANOG (COCONUT VODKA) BASED CONCOCTION AS AUTHENTIC COCKTAIL DRINK IN THE PROVINCE OF THE PHILIPPINES

## *(PENGEMBANGAN RACIKAN BERBASIS LAMBANOG (VODKA KELAPA) SEBAGAI MINUMAN COCKTAIL OTENTIK DI PROVINSI FILIPINA)*

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**Abstract**

The purpose of the study is to develop Quezon's authentic cocktail drink to promote the local product in Quezon Province using lambanog based and local ingredients in selected municipalities of 1st and 2nd districts in Quezon province specifically Mauban, Pagbilao, Sampaloc, Tayabas, Infanta, Sariaya and Lucena City. This is a Research and Development type of study which focuses on developing products that would contribute to the industry of the province. Owners, managers, and bartenders were the respondents of the study. The methodology used in the study was Research and Development using a developed lambanog based concoction focused on three phases; generating phase where all ingredients/materials for the development of local lambanog concoction were gathered, followed by the development phase where the concoction according to the acceptance of the taste and physical attributes of the lambanog cocktail were created and developed and lastly is the field try-out phase where the acceptability of the lambanog based concoction to the market were tested. As to the result of the study, among the varieties of the different types of ingredients in Quezon province gathered by the researchers as modifiers, the tanglad, butterfly dried ternate, bignay, mulberry fruit, katmon, liputi, and passion fruit were proven to have a good blend with the lambanog concoction when it comes to its appearance, taste/flavor, and odor/smell. Among the three cocktail drinks Cocktail 2 with concoction of lambanog, bignay, mulberry fruit, katmon, liputi and simple syrup got the highest acceptance level when it comes to its appearance. While to its taste/flavor and smell/odor cocktail 1 with the concoction of lambanog, buko, tanglad, and butterfly dried ternate got the highest acceptance level.

**Keywords**: Authentic, Beverage, Cocktail, Concoction, Lambanog, Research and Development

***Abstrak***

*Tujuan dari penelitian ini adalah untuk mengembangkan minuman koktail asli Quezon untuk mempromosikan produk lokal di Provinsi Quezon menggunakan bahan dasar lambanog dan lokal di kota terpilih dari distrik 1 dan 2 di provinsi Quezon khususnya Mauban, Pagbilao, Sampaloc, Tayabas, Infanta, Sariaya dan Kota Lucena. Ini adalah jenis penelitian Penelitian dan Pengembangan yang berfokus pada pengembangan produk yang akan berkontribusi pada industri provinsi. Pemilik, manajer, dan bartender adalah responden penelitian. Metodologi yang digunakan dalam penelitian adalah Research and Development dengan menggunakan racikan berbahan dasar lambanog yang dikembangkan dengan fokus pada tiga tahapan; tahap pembangkitan dimana seluruh bahan/bahan untuk pengembangan racikan lambanog lokal dikumpulkan, dilanjutkan dengan tahap pengembangan dimana racikan sesuai dengan penerimaan rasa dan atribut fisik lambanog cocktail dibuat dan dikembangkan dan terakhir adalah uji coba lapangan. keluar fase di mana penerimaan ramuan berbahan dasar lambanog ke pasar diuji. Adapun hasil penelitian, diantara varietas dari berbagai jenis bahan di Provinsi Quezon yang dikumpulkan oleh peneliti sebagai modifikator, ternyata tanglad, ternate kering kupu-kupu, bignay, buah murbei, katmon, liputi, dan markisa terbukti memiliki perpaduan yang pas dengan racikan lambanog dari segi tampilan, rasa/rasa, dan bau/aroma. Diantara ketiga minuman cocktail Cocktail 2 dengan racikan lambanog, bignay, buah murbei, katmon, liputi dan simple syrup mendapat tingkat penerimaan tertinggi jika dilihat dari penampilannya. Sedangkan untuk rasa/rasa dan bau/aroma cocktail 1 dengan racikan lambanog, buko, tanglad, dan ternate kupu-kupu (bunga telang) kering mendapat tingkat penerimaan tertinggi.*

***Kata Kunci**: Otentik, Minuman, Koktail, Ramuan, Lambanog, Penelitian dan Pengembangan*

## INTRODUCTION

The Philippines is the world's second largest coconut producer (behind Indonesia). Almost a third of the country's farmland is covered in coconut trees. Islanders first created lambanog during the pre-colonial era, and coconut plantation farmers passed down their written recipes from generation to generation. To make lambanog, farmers collect sap from the unopened coconut flower, then ferment and distill it. (Rummel, 2018). Lambanog can be found all over the country, but it is produced in distilleries in the Quezon province. In recent years, small lambanog companies have attempted to enter the global liquor market with little success. (Rummel, 2018).

In Quezon, drinking lambanog is usually a communal thing – men sit around in a circle and take turns drinking shots from a cup placed in the middle of the group. Usually, there is also someone singing and playing the guitar to add to the festivities; he takes his turn at drinking too, so the music gets more interesting as the drinking goes on. (Porter, 2005).

Lambanog, others call it coconut vodka, is widely produce in the Philippines. In southern tagalog, it is a very popular drink where it is widely produced. It is widely enjoyed by the locals and festive occasions are almost incomplete without it.

Visiting Quezon wouldn't be complete without taking a shot of lambanog. Lambanog fires up the throat, runs scorching down the belly, and leaves a sweet coconut aftertaste in the tongue. At 80 to 95 proof (40 to 45% alcohol), lambanog is a popular hard liquor in the Philippines notorious for punching first-time visitors to sleep. Also called coconut vodka, lambanog is made from distilled tuba or coconut wine. It begins as the sap bled out from coconut palm, and fermented into coconut wine for three days. After which, the coconut wine goes through a natural process of distillation until the desired 90 proof alcohol content is attained. The result is white liquid that range from clear to obscure. The liquid is naturally colored when added with fruits for flavoring. In Quezon Province, drinking lambanog is part of a communal ritual called tagayan. In the ritual, each member of the group takes turns at drinking lambanog from a single shot glass, which is refilled by the tanggero. Such rituals are made to foster friendship or family, start a courtship, discuss problems in the barangay, and even bargain for loans. Being the lambanog capital of the Philippines, Quezon is replete with coconut plantations and lambanog distilleries. The three major distilleries in the province are the Mallari, Buncayo, and Capistrano Distilleries, all of which are found in the town of Tayabas (Lambanog. n.d.).

Spearheaded by the tourism authority of Quezon, the province came up with a unique welcome to tourists. Each traveler is welcomed by a "tanggero" with a shot of lambanog, a local drink made from distilled coconut nectar and one of the main products of Tayabas, Quezon.

Meanwhile. the lambanog recipe and making process is cost-effective and coconut trees are plentiful in the Philippines. This made the lambanog wine to be coined as a "poor man's beverage". Aside from that, making lambanog, the process itself, is an artistic expression that is distinct to the Filipinos. It has actually been a part of Filipino tradition for centuries. Because coconut trees abound throughout the Philippines, and because the process of distilling lambanog from tuba is a relatively inexpensive process, it is known as a poor man's drink. Farmers often wind down by drinking lambanog after a long day's work. (Porter, 2005).

Likewise, Quezon Province has 41 municipalities with abundant coconut produced dubbed as the coconut capital of the Philippines has lots of possibilities in developing new products that could be marketable nationwide and eventually acceptable worldwide. Hence, a new product which will be the output of the current research, lambanog based concoction that could be considered as unique product of the province with three phases. First, gathering information of all the possible ingredients produced locally to be modifier of the concoction, second, evaluation to develop and evaluate unique cocktail drink in Quezon Province using lambanog as a base and local ingredient produced in the province as modifier and third is to assess the level of acceptance of the end users of lambanog based concoction will be conducted. Also, the study supports that Lambanog distilleries and Bar restaurants companies need to develop alcoholic

products if they wish to be successful in the future. When companies refuse to change the likelihood of seeing sales decline as well as competitors pass them by is much greater. The process for new product development, or NPD, is important for many small companies so they can continue to grow and stay competitive.

**Purpose of the research**

The purpose of the current research paper is to develop authentic cocktail drink using lambanog based alcohol in Quezon Province. The process for new product development or NPD is important to many small lambanog distillery, bar and restaurant who serve alcoholic drinks in Quezon. By developing this concoction, the three phases of new product development will be used to identify the idea, research and development, testing and analysis.

1. To identify at least five varieties of different types of ingredients in Quezon Province as a modifier to be used in lambanog concoction.
2. To produce unique cocktail drink in Quezon Province using lambanog as a base and local ingredient produced in the province as modifier.
3. To assess the level of acceptance of the lambanog based concoction to the end users.

**Research Paradigm/Conceptual Framework**

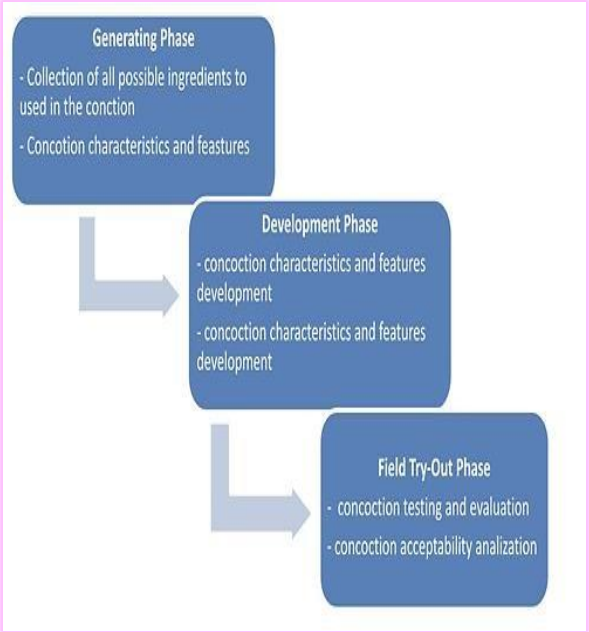


*Figure 1*. Conceptual Framework of the study

The conceptual framework of the current study will adopt the New Product Development assessment using three phases:

1. *Generating Phase* - gathering of ingredients/ materials for the development of local lambanog concoction.
2. *Development Phase* - begin to create and develop the concoction according to the acceptance of the taste and physical attributes of the lambanog cocktail.
3. *Field Try-Out Phase - to check the acceptability of the lambanog based concoction to the market.*

The last part of the process consists of the final output of this research which is the lambanog based concoction.

**METODE**

The methodology used in the study was a Research and Development using a developed lambanog (coconut vodka) based concoction which focused on three phases: Generating, Development and Field – Try – Out Phases.

The small business environment today is very dynamic and competitive, and new product development is a crucial process if you want to survive. For small enterprises to withstand competition from multinationals, they have to continuously update their products to conform to current trends. The new product development process is the cycle that a new product has to undergo from conceptualization to the final introduction into the market.

To address this gap the current research followed the said phases as research methodology whereas, first phase gathered ingredients/materials for the development of local lambanog (coconut vodka) concoction.

The respondents of the study were bartenders of selected bar and restaurant managers in selected municipalities in 1st and 2nd districts of Quezon province specifically in Mauban, Pagbilao, Sampaloc, Tayabas, Infanta, Sariaya and Lucena City. They were the people who were in the position to give vital information regarding the study they were also the expert in developing cocktail based on preference of their customers.

Statistical analysis of data was done through frequency counts, percentage, weighted mean for the evaluation of developed unique cocktail drink in Quezon Province using lambanog as a base and local ingredient produced in the province as modifier.

Ranking was used for the assessment of the level of acceptance of the lambanog (coconut vodka) based concoction to the end users since the researchers developed three variations of lambanog (coconut vodka) based concoction which were assessed by the respondents.

## RESULTS AND DISCUSSION

Table 1. List of the local ingredients identified by the researchers in developing the lambanog based concoction

| Ingredients | Measurement |
|---|---|
| bignay | 20 pcs |
| buko | 1 pc |
| catmon | 2 pcs |
| dried ternate | 10 pcs |
| lipute | 30 ml |
| mulberry | 4 pcs |
| passion fruit | 2 pcs |
| tanglad/lemongrass | 10pc |

Table 1 shows the list of the local ingredients identified by the researchers in developing the lambanog based concoction. After the unstructured interviews and visits to different farms in the province, the researchers gathered the local ingredients that could be used as modifiers or agents to develop a lambanog based cocktail drink. These local ingredients are grown abundantly in the province and cannot be seen or tasted in any cocktail drink offered yet in different bars and restaurants in the country. These ingredients are available in different farms visited by the researchers and also grown in our backyard. Some of the local ingredients that were introduced to the researchers are alugbati, tanglad, tawatawa, alatiris, passion fruit, lipute, katmon, kurumbutan, yambo, mulberry, sampinit, buko juice, calamyas, bignay, dried ternate and lemongrass. The catmon (dillenia philippines) fruit, about five to six centimeters in a diameter, contains a soft fleshy green and edible pulp with a flavour somewhat like of a green sour apple. The fresh fruit has an acide, juicy character suited to be modifiers for an alcoholic beverage. It is a favourite tree among Filipino garden enthusiasts. It is endemic to the Philippines and can be used for urban greening. Another fruit listed on the table as an identified modifier is Lipote, a species of java plum. (Polistico, 2021) Lipote is a fruit that is indigeous in the Philippines and can be found growing in Bicol region and few in some places in the southern part of Luzon that includes Metro Manila, Batangas, Laguna, Marinduque, and in Eastern Visayas that includes Samar. The pure juice extract can be fermented to make wine, or mixed as flavoring with lambanog (coconut arrack) and another beverage. And among these local produces, the following listed on the above table were identified and well suited to come up with the authentic lambanog based cocktail drink. The researchers used 60 ml of lambanog as the base for the cocktail drinks. According to Graham, (2022) While you cannot know the exact alcohol content of any particular mixed drink, there is a basic formula that's used to estimate a drink's strength: (Alcohol Content x Liquor Volume / Total Drink Volume) x 100 = % Alcohol by Volume. This formula was used in lambanog based concoction product development to balance the original taste of based spirit of lambanog and at the same time the flavour of authentic ingredients from Quezon Province.

**Figure 2.**

**Ingredients**:
60ml - lambanog
120ml- coconut juice
30ml - simple syrup,
lemongrass
butterfly dried ternate.

**Procedure:**

1st is to boil the water with lemongrass and dried ternate. Put ice in a mason jar glass. Add lambanog, simple syrup and coconut juice in the glass using the build method. Pour the boiled lemon grass and butterfly ternate juice in the glass then stir. Add lemongrass and dried butterfly ternate as garnish. Serve and enjoy.

**Figure 3**

**Ingredients;**

60ml - Lambanog
60pcs- bignay fruit
4- mulberry fruit
1-katmon
30ml-liputi wine
30ml- simple syrup

**Procedure:**

Place bignay, mulberry and catmon fruit into a glass. Use a muddler and crash to release juice. Fill the glass with an ice cube. Add the lambanog, liputi and simple syrup into the glass. Stir and put bignay as garnish.

**Figure 4.**

**Ingredients:**

60ml-lambanog
30ml- simple syrup
30ml-coconut liqueur
dried ternate
passion fruit juice

**Procedure:**

Chilled the cocktail glass. Boil the dried ternate with simple syrup. Put ice together with lambanog, coconut liqueur and passion fruit juice into a cocktail shaker then shake. Remove the ice from the cocktail glass. After you shake it, pour it into the cocktail glass. Add the boiled ternate and simple syrup. Serve.

The above figures showed the developed cocktail drinks using the local ingredients identified by the researchers. All the ingredients are available and locally produced in the province of Quezon. Among all the ingredients gathered by the researchers and after trial and error, testing and tasting of the cocktail drinks, the researchers come up with the suited local modifiers which could be used for the lambanog based cocktail drinks and come up with specific measurement of the concoction.

Cocktail 1 as shown in figure 2 has a base of 60 ml lambanog and is mixed with coconut juice, simple syrup, lemon grass and butterfly dried terate. In food and beverages, lemongrass is used as a flavoring. For example, lemongrass leaves are commonly used as "lemon" flavoring in herbal teas. (WebMD, n.d).

Simple syrup is a liquid sweetener made by dissolving sugar in water. That's literally it. Simple syrupdisperses sweetness evenly throughout beverages of any temperature, making it a key component of many iced drinks and cocktails. (Tshitundu, 2021)

Coconut water is hydrating, while alcohol is dehydrating. They're the perfect yin and yang. With coconut water in the mix, you can say goodbye to hangovers. Not only that, but coconut water's subtle sweetness also makes for a great flavor addition. It's not that overpowering, so it complements a wide variety of liqueurs and liquors very well. So, whether it be a margarita, a pina colada, or a fruit punch, trust coconut water to give any cocktail a nutty punch. (10 Best Coconut Water Cocktails 2022)

As stated in Dynasty of Tea, (2022) website, the butterfly dried ternate flower has been used in Asian cuisine for centuries, mainly as a natural dye for confectionary and other foods and beverages, and also for its health benefits. In China, this flower is said to increase vitality and boost the immune system, while in India it is used as a poultice to treat inflammation.

As can be seen in figure 3 is the concoction of cocktail drink 2 with the ingredients of 60 ml lambanog, bignay fruit, mulberry fruit, katmon, lipute wine and simple syrup. Many fruits have natural flavor companions, such as apple and cinnamon, strawberry and banana, or cherry and vanilla. These are well-known pairings that are commonly used in food and drinks. But discovering new flavor combinations is half the fun of mixing drinks. Whether you're a cocktail connoisseur, a professional bartender, or a budding drink mixer, this examination of flavor pairings is a valuable resource to keep at hand as it offers information and ideas for when you're looking for that key ingredient to perfect your new drink or food recipe. (Graham, 2020)

Figure 3 shown the concoction of cocktail 3 with the ingredients of 60 ml lambanog, simple syrup, coconut liqueur, dried termate, and passion fruit juice.

Sugar and water are combined to create simple syrup, a liquid sweetener. Because simple syrup consistently distributes sweetness across drinks of any temperature, it is a crucial ingredient in many iced beverages and cocktails. Also, a Coconut liqueur is a liqueur flavored with coconuts, usually in a base of neutral spirits. While the line is fine between a flavored vodka or rum and a liqueur, liqueurs should be thicker texturally and have a prominent note of the flavoring agent. (Coconut liqueur n.d)

The Passiflora edulis, more commonly known as the passion fruit, is a vine species that is native to places like Brazil through Paraguay and Argentina. However, it is grown and cultivated all over the world in tropical and subtropical regions.

Some other notable places that are grown is Australia, New Zealand, Cambodia, Colombia, Dominican Republic, East Africa, India, Indonesia, Mexico, Peru, Philippines, Puerto Rico, Hawaii, and Florida. (Taylor, 2021) Why passion fruit in an authentic cocktail drink? Since passion fruit has such a great, enticing aroma, the drinks frequently have wonderful aromas as well. Additionally, it reduces cholesterol levels and your risk of developing diabetes, heart disease, and several types of cancer.

Table 2. *Level of Acceptance of the Lambanog Based Concoction Drink 1*

| Statement Developed lambanog based cocktail | Weighted Mean | Narrative Description |
|---|---|---|
| **Appearance** | | |
| 1. has good color combination | 4.78 | Highly Acceptable |
| 2. has showy striking appearance | 4.67 | Highly Acceptable |
| 3. looks attractive | 4.56 | Highly Acceptable |
| 4. is clear and bright; it has no faults | 4.56 | Highly Acceptable |
| 5. is eye appealing | 4.44 | Highly Acceptable |
| **General Weighted Mean** | **4.60 (Highly Acceptable)** | |
| | | |
| **Taste/Flavor** | | |
| 1. has a good taste (a combination of lambanog, aroma, flavor, body) | 5.00 | Highly Acceptable |
| 2. has sufficient lambanog flavor yet smooth and pleasing to palate | 4.89 | Highly Acceptable |
| 3. is difficult to describe the taste of the cocktail yet it is well blended | 4.22 | Highly Acceptable |
| 4. has a high alcoholic taste (lambanog) | 4.11 | Acceptable |
| 5. does not taste sweet syrupy or contain to much fruits | 4.00 | Acceptable |
| **General Weighted Mean** | **4.44 (Highly Acceptable)** | |

| Statement Developed lambanog based cocktail | Weighted Mean | Narrative Description |
|---|---|---|
| **Smell/Odor** | | |
| 1. aroma is enticing | 4.89 | Highly Acceptable |
| 2. has smells of particular fruit | 4.78 | Highly Acceptable |
| 3. has fragrant smell of an alcoholic beverage | 4.56 | Highly Acceptable |
| 4. has a strong fruit flavored smell as you sip | 4.44 | Highly Acceptable |
| 5. has a strong smell of lambanog | 4.11 | Acceptable |
| **General Weighted Mean** | **4.56 (Highly Acceptable)** | |

Table 2 shows the mean scores of the level of acceptance of the lambanog based concoction 1 as to its appearance, taste/flavor and smell/odor. The results of the study in terms of appearance/ color have a general mean of 4.60 or a narrative interpretation of "Highly Acceptable". The highest among the statement on the appearance of concoction 1 is that the developed lambanog based concoction has good color combination 4.78 weighted mean followed by it has showy striking appearance with the weighted mean of 4.67 and the least is that the developed lambanog based concoction is eye appealing with the weighted mean of 4.44.

A high level of acceptability dictates the agreed palatability of the respondents when it comes to color/appearance. This has an implication that the respondents agreed that visualization dictates the acceptability of certain products. A critical part of the adequacy and palatability of food and drinks depend on their presentation (Golloso-Gubat MJ, Vincent E, Magtibay J, Melvin G, Gironella P, Tajan MG, et al., 2015). The color/ appearance of the products is vital to the customers. Color and style advice has long been standard for the right clothing, cosmetics and even for hotels, apartments and gardens. It is relatively less recognized that forward-looking beverage concepts should also adopt an appropriate color palette (Arndt, 2019). When it comes to their beverages, consumers now increasingly value a harmonious color scheme. At the same time, they are becoming more open to unusual creations. In essence, the increasing desire for coherent color trends can be simply explained by the fact that, at the point of sale, every beverage communicates with the consumer first and foremost through its packaging and look. According to the GNT Group, 75 percent of a product's first impression can be traced back to its color scheme. (Arndt, 2019).

In aspects of taste or flavor, the statement has a good taste (a combination of lambanog, aroma, flavor, body) has a weighted mean of 5.0 as scored by the respondents with a narrative description of "Highly Acceptable". It was revealed that all respondents like very much the flavor of the concoction with a combination of lambanog, aroma, flavor and body. Followed by the statement has sufficient lambanog flavor yet smooth and pleasing to palate with the weighted mean of 4.89. This has the implication that Lambanog contributes to the quality of flavor of a cocktail drink. According to the study of Pepper Ph, (2018) Lambanog is a very clean-tasting spirit, with a subtle, sweet finish. This gives it plenty of versatility in cocktails, since you can pretty much pair it with anything you want. Try it with citrus or lychee juices, for sweet, but potent mixes. Its clean taste also makes it perfect for infusions. Traditionally, Lambanog is steeped with either raisins or prunes to give it a sweeter flavor. With the variety of fruits we have, the types of infusions you can do are endless. For the enterprising barkeep and the alcohol gourmand, feel free to experiment.

Also, the responses of the respondents as to odor in lambanog based concoction 1 showed a general weighted mean of 4.56 with a narrative description of "Highly Acceptable". The aroma of the drink finds the respondents enticing with the weighted mean of 4.89 with the narrative descriptive of "Highly Acceptable". Also, the smell of a particular fruit has been noticed by the respondents with the weighted mean of 4.78. It can be implied that the smell/odor of the combination of the ingredients of cocktail drink 1 produces a pleasant aroma and is acceptable to the respondents. Lambanog has a very clear flavor and a delicate, sweet aftertaste. This

lends it a lot of variety in cocktails, since you can very much match it with anything. Zalameda & Villaluz, (2016) stated that Lambanog is clear white with the characteristic aroma of distilled coconut. It has 80-90 proof or 40-45% alcohol/volume content with minimal amount of acetic acid not to exceed 0.1-0%. It is methanol-free with the characteristic of fossil oil to contain iso-amyl alcohol ranging from 20-80 grams/100L.

Table 3. *Level of Acceptance of the Lambanog Based Concoction Drink 2*

| Statement Developed lambanog based cocktail | Weighted Mean | Narrative Description |
|---|---|---|
| **Appearance** | | |
| 1. has good color combination | 5.00 | Highly Acceptable |
| 2. is eye appealing | 5.00 | Highly Acceptable |
| 3. has showy striking appearance | 5.00 | Highly Acceptable |
| 4. looks attractive | 4.89 | Highly Acceptable |
| 5. is clear and bright; it has no faults | 4.67 | Highly Acceptable |
| **General Weighted Mean** | **4.91 (Highly Acceptable)** | |
| | | |
| **Taste/Flavor** | | |
| 1. has sufficient lambanog flavor yet smooth and pleasing to palate | 4.44 | Highly Acceptable |
| 2. has a good taste (a combination of lambanog, aroma. flavor, body) | 4.22 | Highly Acceptable |
| 3. does not taste sweet syrupy or contain too much fruits | 4.11 | Acceptable |
| 4. is difficult to describe the taste of the cocktail yet it is well blended | 4.00 | Acceptable |
| 5. has high alcoholic taste (lambanog) | 3.89 | Acceptable |
| **General Weighted Mean** | **4.13 (Acceptable)** | |
| **Smell/Odor** | | |
| 1. aroma is enticing | 4.44 | Highly Acceptable |
| 2. has a strong fruit flavored smell as you sip | 4.11 | Acceptable |
| 3. has smells of particular fruit | 4.11 | Acceptable |
| 4. has fragrant smell of an alcoholic beverage | 4.00 | Acceptable |
| 5. has a strong smell of lambanog | 3.78 | Acceptable |
| **General Weighted Mean** | **4.09 (Acceptable)** | |

Table 3 depicts the mean scores of the level of acceptance of the lambanog based concoction 2 as to its appearance, taste/flavor and smell/odor. The responses of the respondents in terms of appearance/color have a general mean of 4.91 with the narrative description of "Highly Acceptable". The statements that the developed lambanog based cocktail has good color combination, is eye appealing, and has showy striking appearance got the perfect weighted mean of 5.0 which implies that the appearance of a certain drink/beverage relies on how its color blends on it. Thus, the color of the products is vital for the customers. In beverage products, color is essential. Bignay fruit and mulberry fruit have reddish color which also contributed to the color of the cocktail drink. DrinkLabs, (2021) stated that Red has always been associated with health, vigor, and love and has increased metabolic activity. This trait makes it the perfect appetite accelerator and a prime color for drinks. Being associated with the red color means raised temperature and blood pressure, which leads to increased thirst.

In terms of taste/flavor, the result of the study has the general weighted mean of 4.13 with the narrative description of 'acceptable". The highest weighted mean gained from the responses of the respondents is 4.44 with the narrative description of "highly acceptable, that cocktail drink 2 has sufficient lambanog flavor yet smooth and pleasing to palate. Second is that cocktail drink 2 has a good

taste with a weighted mean of 4.22. Commonly, taste/flavor is crucial to the new developed products as each individual has different palates. As to the result of the study it can be seen that lambanog as a base in cocktail drinks can be mixed with different types of fruits and can blend with it very well. As supported in the study of Pepper.ph, (2018) lambanog gives plenty of versatility in cocktails, since you can pretty much pair it with anything you want. Try it with citrus or lychee juices, for sweet, but potent mixes. Its clean taste also makes it perfect for infusions. Traditionally, Lambanog is steeped with either raisins or prunes to give it a sweeter flavor. With the variety of fruits we have, the types of infusions you can do are endless.

With regard to the result on the smell/odor of cocktail drink 2 it has a general weighted mean of 4.09 with the narrative description of "acceptable". Highest among the statement is that the aroma is enticing with the weighted mean of 4.44 with a narrative description of "highly acceptable" and it has a strong fruit flavored smell as you sip with the weighted mean of 4.11 which is "acceptable'. Aroma of the fruits has a strong effect in beverages Anthony, (2007) stated that aroma is the first cousin of taste. In fact, much of what we call taste is an intricately entwined matrix of flavor, aroma chemicals and texture or mouthfeel. In the 2005 review "Odor/taste integration and the perception of flavor," in Experimental Brain Research, Dana Small and John Prescott presented psychophysical, neuro-imaging and neurophysiological studies showing how odor and taste are "functionally united [while] anatomically separated." It's no wonder food manufacturers are very picky about how their products smell. Thus, mulberry fruits and bignay fruits also contributed in the aroma of the concoction.

Table 4. *Level of Acceptance of the Lambanog Based Concoction Drink 3*

| Statement Developed lambanog based cocktail: | Weighted Mean | Narrative Description |
|---|---|---|
| **Appearance** | | |
| 1. has good color combination | 4.56 | Highly Acceptable |
| 2. is eye appealing | 4.56 | Highly Acceptable |
| 3. is clear and bright; it has no faults | 4.56 | Highly Acceptable |
| 4. looks attractive | 4.44 | Highly Acceptable |
| 5. has showy striking appearance | 4.44 | Highly Acceptable |
| **General Weighted Mean** | **4.51 (Highly Acceptable)** | |
| | | |
| **Taste/Flavor** | | |
| 1. has sufficient lambanog flavor yet smooth and pleasing to palate | 4.56 | Highly Acceptable |
| 2. has a good taste (a combination of lambanog, aroma, flavor, body) | 4.56 | Highly Acceptable |
| 3. does not taste sweet syrupy or contain too much fruits | 4.33 | Highly Acceptable |
| 4. is difficult to describe the taste of the cocktail yet it is well blended | 4.33 | Highly Acceptable |
| 5. has a high alcoholic taste (lambanog) | 4.11 | Acceptable |
| **General Weighted Mean** | **4.37 (Highly Acceptable)** | |
| | | |
| **Smell/Odor** | | |
| 1. aroma is enticing | 4.78 | Highly Acceptable |
| 2. has a strong fruit flavored smell as you sip | 4.56 | Highly Acceptable |
| 3. has smells of particular fruit | 4.44 | Highly Acceptable |
| 4. has fragrant smell of an alcoholic beverage | 4.22 | Highly Acceptable |
| 5. has a strong smell of lambanog | 4.11 | Acceptable |
| **General Weighted Mean** | **4.42 (Highly Acceptable)** | |

Table 4 reveals the result of the study in the level of acceptance of the lambanog concoction drink 3 as to its appearance, taste/flavor and smell/ odor. Based on the results, as to its appearance,

it has a general weighted mean of 4.51 or "highly acceptable". Among the statements in this factor three got the highest weighted mean of 4.56. Based on the responses of the respondents, they highly accepted that the developed cocktail lambanog has a good color combination, eye appealing and its clear and bright. When it comes to food and beverages, color affects aesthetics, flavor and identification, perception, and anticipated taste. Color psychology teaches us that our senses have an even broader influence – they are connected to emotional reactions and can influence our appetite. Let's look at the psychology associated with colors of products we view every day. (Beverage Industry 2020).

Relative to taste/flavor, the result of the study has the general weighted mean of 4.37 with the narrative description of "highly acceptable". The statements that the developed lambanog concoction has sufficient lambanog flavor yet smooth and pleasing to palate and has a good taste (a combination of lambanog, aroma, flavor, body) viewed by the respondents as "highly acceptable" with both weighted mean of 4.56.

And as to its smell/odor the respondents highly accepted cocktail drink as it gained a total weighted mean of 4.42. Its aroma is enticing, has a strong fruit flavour and has a smell of particular fruit.

Table 5. *Summary of the Level of Acceptance of the Lambanog Based Concoction by Cocktail Drink*

| Indicator | General Weighted Mean | | |
|---|---|---|---|
| | COCKTAIL 1 | COCKTAIL 2 | COCKTAIL 3 |
| Appearance | 4.60 | 4.91 | 4.51 |
| Taste/Flavor | 4.44 | 4.13 | 4.37 |
| Smell/Odor | 4.55 | 4.09 | 4.42 |

Table 5 disclosed the summary of the level of acceptance of the lambanog based concoction by cocktail drink. The result revealed that among the three (3) cocktail drinks concoction 2 with lambanog based, bignay fruit, mulberry fruit, catmon, lipote wine and simple syrup got the highest weighted mean of 4.91 when it comes to its appearance/color. When it comes to the development of color concepts, a look at color psychology can help. For instance, the color red represents high energy and has a very positive strengthening effect on an emotional level. In addition, red symbolizes a strong will, determination and persistence. In China, red is the color of luck and wealth; in Russia, it underscores the value and expense of an item. And in Japan, the color red is associated with women. In other words, different markets, different color concepts. (Arndt, 2019).

As to its taste/flavor cocktail 1 with the concoction of lambanog based, coconut juice, simple syrup, lemongrass and butterfly dried ternate got the highest weighted mean of 4.44. This implies that the effect of lemon grass and butterfly dried ternate as modifiers produce a pleasant taste/odor and are acceptable to the respondents. The use of lemongrass gives a sharp lemon flavor (Taboja, D., 2014) to any drink. According to Cahn, L. (2021) lemongrass has a citrus and lemon flavour, with a hint of mint. Its flavour is light and doesn't take over the other flavours in a meal. Lemongrass also boasts a lovely fragrance, making it ideal for teas and dipping sauces. It may also add more of the aroma of the cocktail drink. On the other hand, Butterfly dried tarnate sometimes called blue tea, butterfly pea flower tea is made from the leaves and flower petals of the clitoria ternatea plant. Butterfly pea flower is commonly grown in Southeast Asia, and brews up a brilliant blue color when prepared as a tea. It has a floral, mildly sweet flavor, somewhat similar to that of chamomile. A fan favorite due to its intense blue color, it also has a variety of health benefits, and can be added to other drinks and even cocktails for a boost of bright blue color! Add a squeeze of lemon to this tea and watch it turn violet (ArtfulTea. n.d). Into the aspect of smell/odor cocktail 1 also gained the highest weighted mean of 4.55. The aroma of the lemongrass contributed to the favorable preference among the respondents from the three (3) cocktail drinks. According to Alpha Aromatics, (2022) the lemongrass herb has stalks that are fibrous and smell much like lemons. In an essential oil, the scent is fresh and light with a hint of lemon.

## CONCLUSION

The result of the study showed the great potential of the different identified local ingredients such as coconut juice, passion fruit juice, butterfly dried ternate, lemongrass, bignay fruit, mulberry fruit and catmon as modifiers for a lambanog based cocktail drink. Findings showed that the three (3) developed lambanog based concoctions are highly acceptable as to appearance, taste/ flavor, and smell/odor and general acceptability. For the appearance, cocktail drink 2 got the highest score while for the taste/flavor and smell/odor it was cocktail 1 which has favorable preference by the respondents.

### Recommendations

The researchers as well as the future researchers are encouraged to further conduct on the marketability of the developed lambanog based cocktail and the level of willingness of the selected bar and restaurant establishments to market the developed product. It is also recommended that to ensure the sustainability of the developed lambanog based cocktail, researchers are further encouraged to study the season of the availability of the main modifiers to create the developed products. The results of the study could also be submitted for laboratory tests for health and safety purposes to the Department of Science and Technology (DOST) and Bureau of Food and Drugs (BFAD) for human consumption. Furthermore, the CIHTM department of the MSEUF can adopt the results of this study for extension programs to train the local community to increase economic benefits and livelihood activities especially the producers of lambanog to produce the best quality that will best suited to the appearance, taste and odor of the lambanog based cocktail.

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