

## **Consumer Preference and Proximate Analysis of Guyabano (*Annona muricata* Linn.) Pie**

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### **Abstract**

This research aimed to find the ash, moisture, crude oil and total fat content of Guyabano pie and to determine the likeness or dislikeness of respondents towards Guyabano pie among the consumers in all public markets in the second district of Capiz. Experimental and descriptive method of research were used. Testing of the sample was done in three trials. Samples of the generally acceptable product that was developed by Igdañes and Arcangeles (2017) was used. Each sample was then subjected for proximate analysis such as ash content, moisture content, crude protein and total fat, carbohydrate and energy content. For consumer testing, 100 consumer panels was requested to taste the product in Mambusao Public Market, Mambusao, Capiz during market day schedule. Samples for proximate analysis were brought to Department of Science and Technology, Region VI, Chemical and Microbiology Department and results of the consumer test were tabulated and analysed using the means and percentages. Pie with 40% guyabano has 38.0g moisture, 0.63g ash, 2.58 g crude protein, 7.46 g total fat, 51.3g carbohydrate and has an energy of 283 Kcal/100g. Fifty-six percent of the consumers liked the guyabano pie while forty-four percent of the consumers like the pie with 100% flour. Thus, guyabano pie is nutritious and acceptable to consumers.

Keywords: nutrient content, guyabano pie, con

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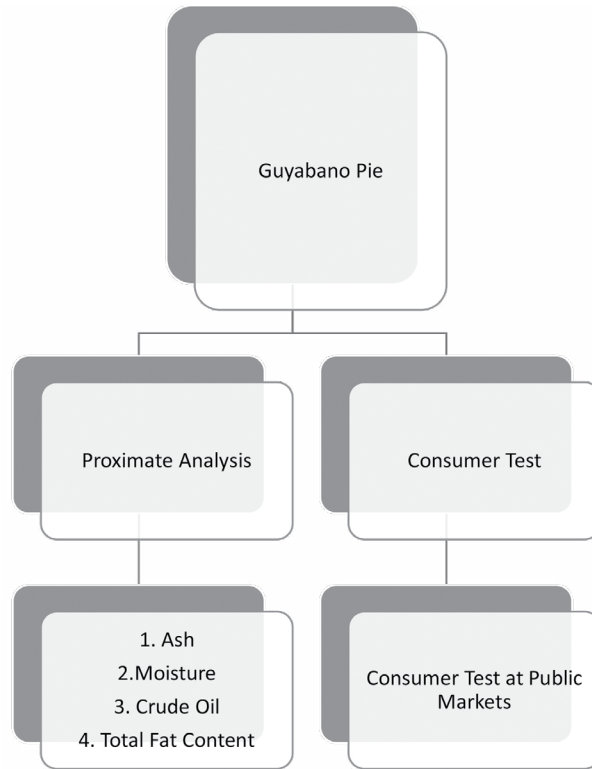
## Introduction

Guyabano also known as soursop, graviola, and in Latin America, guanábana) scientifically known as *Annona muricata*, Annonaceae family is a broadleaf, flowering, evergreen tree. It is native to the tropical regions of the Americas and the Caribbean and is widely propagated (Wikipedia, 2019). Extracts and metabolites from this plant exhibit pharmacological properties such as anti-inflammatory, antiulcer, anthelmintic, antibacterial, and free radical scavenging activity. Beside medicinal uses, this plant has high economic value due to its edible and nutritive fruit, leaves, bark and provides substantial livelihood support to local inhabitant (Kedari and Khan, 2014). Guyabano fruits are harvested in its maturity – when the skin is shiny green or yellowish green in color. Guyabano fruit is used as vegetable while the ripe Guyabano fruit can be eaten as dessert. Guyabano or soursop is also known to possess medicinal properties that include cancer fighting activity (Medical Health Guide, 2011). It is also manufactured as Herbal Tea together with mangosteen known as GUYASTEEN (Food and Drug Administration).

A study by Ara (2000) was carried out to process soursop puree. Physico-chemical evaluation of freshly extracted soursop pulp showed high pectin esterase (PE) actMty (32.1 unit/g) and vitamin C content (21 mg/100g). The pH was low (3.7) and the acidity was high (1.02%). Another study by Hamid (2013) was done to determine the best formulation of soursop ice cream mixed with soymilk. Formulation with 20% whipping cream, 20% soymilk and 30% soursop pulp is the most accepted and has been chosen as the best formulation. Consumer test was carried out among 100 respondents where it was found out that 91% of the respondents like the soursop ice cream mixed with soymilk, and 95% are interested to buy the product in the market.

Guyabano was introduced as another food ingredient in a pie (Igdanes and Arcangeles, 2017). To ensure more nutritious consumption of this product among people as well as the preference of the people towards this product, it might be necessary to look over its proximate composition and consumer preference. Marketability and inventive aspects of the most acceptable product of pie combined with forty percent guyabano fruit (from the study of Igdanes and Arcangeles, 2017) would be more in demand in the future if the product will be introduced locally to varied type of consumers and if the product have undergone proximate analysis, therefore this study was conducted. Specifically, this study wanted to determine the ash, moisture, crude oil and total fat content of Guyabano pie and to determine the likeness or dislikeness of respondents' towards Guyabano pie among the consumers in all public markets in the second district of Capiz.

## Conceptual Framework



## Methodology

Descriptive and experimental type of research were used in the study. For descriptive type of research, survey was done once to 100 respondents that were randomly chosen by the researchers during market day of the chosen public markets in the 2nd District of Capiz. They were given a slice of Guyabano pie and were then requested to rate the product on the rating sheet provided. They rated the product as like or dislike.

For the experimental component of the research, three samples were taken from the generally acceptable Guyabano pie that was developed by Igdanes and Arcangeles (2017). Each sample was subjected for proximate analysis such as ash content, moisture content, crude protein, total fat, carbohydrate and energy content. For the preparation and transportation of the three samples, a 500-gram sample was placed in sterile plastic container (Ziploc), labelled and weighed and was frozen, on the next day, it was transferred to thermo chase filled with ice and was transported to Department of Science and Technology, Region VI, Chemical and Microbiology Department for proximate analysis. A thermometer was brought to monitor the

temperature while transporting the sample. Results were retrieved two weeks after the submission of the sample.

### Materials

Three 500-grams sample of Guyabano pie, thermometer, thermochest, ice, Ziploc, refrigerator, marker, masking tape

### Analysis/Procedure

The results retrieved from Department of Science and Technology-Region VI, Chemical and Microbiology Department and from the survey during the consumer testing were tabulated and analyzed using the means and percentages.

## Results and Discussion

### Proximate Analysis

Table 1.0 shows that in every 100g sample of guyabano pie, it has 38.0g moisture, .63g ash, 2.58 g crude protein, 7.46 g total fat, 51.3g carbohydrate and has an energy of 283 Kcal/100g.

Table 1.0 Proximate Analysis of Guyabano Pie

Sample	Analysis	Result (g/100g)
Guyabano Pie (with 40% guyabano fruit)	Moisture	38.0
	Ash	0.63
	Crude Protein	2.58
	Total Fat	7.46
	Carbohydrate	51.3
	Energy	283 Kcal/100g

### Consumer Testing

The consumer acceptability of pie with 40% Guyabano fruit is shown in Table 2.0. It revealed that 56% of the consumers liked the Guyabano pie while 44% of the consumers like the pie with 100% flour. Forty-four percent disliked the guyabano with 40% Guyabanofruit while 56% of the consumers disliked the pie with 100% flour.

Table 2. Consumer testing of Pie with Guyabano fruit

Sample	Liked (%)	Disliked (%)	Total
Guyabano Pie (with 40% guyabano fruit)	56	44	100
Guyabano Pie (with 100% flour)	44	56	100

### Conclusions

Based on the results of the study, it was concluded the pie with 40% Guyabano is nutritious containing 38.0g moisture, 0.63g ash, 2.58 g crude protein, 7.46 g total fat, 51.3g carbohydrate and has an energy of 283 Kcal/100g and is acceptable to consumers with 56% of the consumers that liked the pie with the composition of 40% Guyabano.

### Recommendations

It is recommended that microbial analysis be set when conducting studies that involve food for human consumption to ensure nutrition and food safety. Likewise, consumer testing should be conducted in other barangays or towns to have a more comprehensive result.

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