

# GINATAANG HALO-HALO ICE CREAM

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## Introduction

Pinoy Delicacy is a one-a-kind comfort food for Filipinos. Such as Turon, Bibingka, Banana Cue, and many others to mention. In wet weather, commonly served as merienda, is the Ginataang Halo-Halo which is perfect while raining. It contains ingredients of saba bananas, sweet potatoes, tapioca pearls, taro root, and glutinous rice ball. Some recipes include jackfruit as their highlight which also complemented its taste.

Ginataang Halo-Halo also known as Binignit in some regions in the Philippines, according to panlasangpinoy.com, dished that are cooked in coconut milk are locally called "Ginataan". The word was derived from the root word "gata", which means cococnut milk. At the same time, the word "Halo-Halo" refers to the combination of different components or ingredients that were used to complete the dish and is also referred to as another famous Filipino summer dessert.

Ginataang Halo-Halo is stewed in coconut milk and often eaten in the Lenten season to abstain from eating meat. Ginataang Halo-Halo had a variety of ingredients that every region has, for, accounted for a volume share of 0.54% of the global market and 1.98% of the regional (Asia-Pacific) market in 2016. The industry is forecast to grow at a CAGR of 6.3% from 2016 to 2021. The ice cream sector in the Philippines provides insights into high-growth markets to target, trends in the usage of package materials,

category-level distribution channel data, and market share of brands.

The researcher came up with the idea of combining the two of the famous pride of Filipinos that accepted its variation. The two deserts are complemented and will create a new taste.

## Statement of the Problem

This study focused on the development and preparation of Ice Cream using Ginataang Halo-Halo as the main ingredients.

Specifically, it sought to answer the following sub-problems:  
1. What are the ingredients, materials, tools, and procedures used in the development and preparation of Ginataang Halo-Halo Ice Cream?

2. How does the respondent assess the level of acceptability of Ginataang Halo-Halo Ice Cream in terms of:

- 2.1 Appearance;
- 2.2 Aroma;
- 2.3 Flavor;
- 2.4 Texture; and
- 2.5 Overrun

3. Is there a significant difference in the level of acceptability of Ginataang Halo-Halo Ice Cream from the group of respondents?

4. What is the result of the nutrient analysis of Ginataang Halo-Halo Ice Cream?

Methodology

In the descriptive method of research that is used in the study, the principal purpose of this method is to describe the nature of situations as Its objective at the time of the study and explore the cause of the phenomena. (sili-kamias sorbetes).

According to Nassaji (2015), The goal of descriptive research is to describe a phenomenon and its characteristics. This research is more concerned with what rather than how or why something has happened. Therefore, observation and survey tools are often used to gather data (Gall, Gall, & Borg, 2007). In such research, the data may be collected qualitatively, but it is often analyzed quantitatively, using frequencies, percentages, averages, or other statistical analyses to determine relationships.

Population and Sampling

This study made use of simple random sampling to select the respondents. Simple random is based on randomly selecting the respondents as samples from the population in such a way that every set of respondents has an equal choice of the probability of being selected. Simple random sampling is meant to be a presentation of the population.

Table 1

Frequency and percentage distribution of Respondents		
Respondents	Population	Percentage
Experts	10	17
Consumer	20	83
TOTAL	30	100

As shown in Table 1, there were (30) respondents composed of ten experts or 17 percent, and twenty consumers or 83 percent consumers.

Respondents of the Study

The researchers purposely use (2) groups of respondents composed of Experts and Consumers. The Ten (10) Experts come from different food manufacturing companies around Manila, and had years of making ice

cream and selling ice cream (sorbetero). On the other hand, twenty (20) consumers around Bagong Silangan Quezon City. Researchers assure that all consumers should be knowledgeable enough to honestly answer the questionnaire.

Table 2  
Profile of the Respondents according to Age

Age	Consumers		Experts		Overall	
	f	%	f	%	f	%
41 years old and above	7	35	3	30	10	33.33
36 - 40 years old	2	10	0	0	2	6.67
31 - 35 years old	3	15	3	30	6	20
26 - 30 years old	3	15	0	0	3	10
21 - 25 years old	3	15	2	20	5	16.67
20 years old and below	2	10	2	20	4	13.33
TOTAL	20	100	10	100	30	100

As to Consumer respondents, the age range of 41 years old and above got the highest frequency of 7 or 35 percent, 31-35, 26- 38, and 21 - 25 got the same frequency of 3 or 15 percent, 36-48 and 28 years old and below got the same frequency of 2 or 18 percent.

As to Expert respondents, 31 - 35 and 41 years old above got the same frequency of 3 or 38 percent, and 21 - 25 and 20 years old below got also the same frequency of 2 or 20 percent.

Generally, the majority of respondents were 41 years old and above. 2 2

Table 3  
Profile of the Respondents according to Gender

Gender	Consumers		Experts		Overall	
	f	%	f	%	f	%
Male	6	30	7	70	13	43.33
Female	14	70	3	30	17	56.67
TOTAL	20	100	10	100	30	100

As to Consumer respondents, females got a frequency of 14 or 70 percent and males got a frequency of 6 or 60 percent.

As to Expert respondents, male got a frequency of 7 or 70 percent

while females got a frequency of 3 or 30 percent.

Table 4

Profile of the Respondents according to Civil Status

Gender	Consumers		Experts		Overall	
	f	%	f	%	f	%
Single	12	60	8	80	20	66.67
Married	6	30	2	20	8	26.67
Widow	2	10	0	0	2	6.67
TOTAL	20	100	10	100	30	100

As to Consumer respondents, singles got a frequency of 12 or 60 percent, married got a frequency of 6 or 30 percent and widows got a frequency of 2 or 10 percent.

As to Expert respondents, singles got a frequency of 8 or 80 percent, while married got a frequency of 2 or 20 percent.

As a whole, the majority of respondents were single with an obtained frequency of 20 or 66.67 percent.

Table 5

Profile of the Respondents according to Educational Attainment

Educational Attainment	Consumers		Experts		Overall	
	f	%	f	%	f	%
College Graduate	4	20	0	0	4	13.33
College Undergraduate	4	20	3	30	7	23.33
Vocational Graduate	1	5	0	0	1	3.33
High School Graduate	4	20	4	40	8	26.67
High School Undergraduate	5	25	2	20	7	23.33
Elementary Graduate	2	10	1	10	3	10
TOTAL	20	100	10	100	30	100

As to Consumer respondents, high school undergraduates got frequency of 5 or 25 percent, college graduates, college undergraduates, and high school graduates got the same frequency of 4 or 20 percent, elementary graduates got a frequency of 2 or 18 percent, and vocational graduate got a frequency of 1 or 5 percent.

As to Experts respondents, high-school graduates got a frequency of 4 or 48 percent, college undergraduates got a

frequency of 3 or 38 percent, high school undergraduates got a frequency of 2 or 20 percent and elementary graduates got a frequency of 1 or 18 percent.

Generally, most of the respondents were high school graduates.

Presentation Analysis and Interpretation of Data

This chapter presents the findings, which are grouped, statistically treated, analyzed, and interpreted in the form of a table based on the sub-problem of the study raised in Chapter 1.

Sub-problem No. 1. What are the ingredients, materials, apparatuses, and procedures used in the preparation and development of Ginataang Halo-Halo Ice Cream?

Table 6

Ingredients Used

Quantity	Unit	Specification	Unit Cost	Extended Cost
½	cup	Saba	P	P
		Plantain	44.00/1k	22.00
½	cup	Sweet	P	P
		Potato	25.00/1k	12.50
¼	cup	Jackfruit	P	P
			50.00/cu	25.00
½	cup	Tapioca	P	P
		Pearl	20.00/cu	20.00
2	pieces	Coconut	P	P
		Milk	30.00/pc	60.00
100	grams	Powder	P	P 9.00
		Glutinous	45.00/50	
		Rice	0g	
1	cup	Sugar	P	P
			60.00/25	22.50
			0g	
1	cup	Nestle	P	P
		All-Purpose	66.00/25	66.00
		Cream	0k	
2	cup	Fresh	P	P
		Milk	85.00/1L	43.00
1	teaspoon	Stabilizers	P	P
			300.00/1	10.00
			50g	
30	pieces	Packaging	P	P
			45.00/50	27.00
			pcs	
TOTAL			P 765.00	P 316.00

Yield: 30 servings (44 grams)

Price per serving: Php. 10.50

Selling Price: Php. 16 (at 50% mark-up)

Table 7

Tools and Equipment Used

Quantity	Unit	Specification
1	Pieces	Hand Mixer
2	Pieces	Blender
1	Set	Measuring Cup
1	Set	Measuring Spoon
1	Pieces	Knife
1	Pieces	Spatula
1	Pieces	Chopping Board
2	Pieces	Mixing Bowl

Sub-problem No.2. How do the respondents assess the level of acceptability of Ginataang Halo-Halo Ice Cream in terms of appearance, aroma, flavor, texture, and overrun?

Table 8

Assessment as to Level of Acceptability of Ginataang Halo-Halo Ice Cream

CRITERIA	Experts		Consumers		Composite		Rank
	WM	VI	WM	VI	WN	VI	
1. Appearance	4.20	HA	4.20	HA	4.20	HA	3
2. Aroma	3.30	HA	4.90	A	3.60	A	5
3. Flavor	3.70	HA	4.40	A	3.78	A	4
4. Texture	4.00	A	4.60	HA	4.30	HA	2
5. Overrun	4.20	A	4.40	HA	4.30	HA	2
Overall Weighted Mean	3.88	A	4.19	A	4.27	A	

The experts and consumer respondents evaluation of the acceptability of the developed Ginataang Halo-Halo Ice Cream is in Indicated Table 6.

As indicated by the data in Table 6, the expert respondent rated **Highly Acceptable** the variables "Appearance," and "Overrun" of the developed Ginataang Halo-Halo Ice Cream as proven by their respective weighted mean of 4.28 and 4.28. However, they rated Acceptable the variables "Flavor" and "Texture" as strengthened by their respective weighted mean of 3.78 and 4.00.

However, a **Moderately Acceptance** rating in "Aroma" was revealed by the weighted mean of 3.30 and yielded an overall weighted mean of 3.88 and was verbally interpreted as **Acceptable**.

The consumer respondents rated **Highly Acceptable** the variables "Appearance," "Texture," and "Overrun" as shown by their respective weighted mean of 4.28, 4.68, and 4.48. However, an **Acceptable** rating in variables "Aroma" and "Flavor" was meant by their respective weighted mean of 3.90 and 3.85 and yielded an overall weighted mean of 4.19 verbally interpreted as **Acceptable**.

Summarily, the experts and consumer respondents evaluate the level of acceptability of the developed Ginataang Halo-Halo Ice Cream, ranks no. 1.5 are "Texture" and "Overrun" rated **Highly Acceptable** as proven by the composite weighted mean of 4.30. Rank no. 3 is "Appearance" rated **Highly Acceptable** as confirmed by the composite weighted mean of 4.20. Rank no. 4 is "Flavor" rated **Acceptable** as affirmed by the composite weighted mean of 3.78. Rank no. 5 is "Aroma" rated **Acceptable** as reinforced by the composite weighted mean of 3.60.

The result reveals that the developed Ginataang Halo-Halo Ice Cream was Acceptable to the experts and consumer respondents in terms of appearance, aroma, flavor, texture, and Overrun supported by the overall composite weighted mean of 4.04.

**Subproblem No. 3. Is there any significant difference between the assessment of the respondents in the level of acceptability of the developed Ginataang Halo-Halo Ice Cream?**

Table 9

Significant Difference in the Level of Acceptability of the Developed Ginataang Halo-Halo Ice Cream

Respondents	Mean	Standard Deviation	t-ratio		
			Computed	Decision	Verbal Interpretation
Expert	4.88	0.3834	2.0969	Reject	Significant
Consumer	4.19	0.3809		Ho	

Degree of Freedom = 28  
Critical value at 0.05 = 2.048

Looking at the data in Table 9, the results of the significant difference between the evaluation of the experts and consumer respondents on the level of acceptability of the developed Ginataang Halo-Halo Ice Cream, obtained a computed T-value of 2.8969 is greater than the critical value of 2.848 at a five percent level of significance with 28 degrees of freedom and verbally interpreted significantly. Hence, resulted in the rejection of the null hypothesis.

Since we failed to accept the null hypothesis, there is a strong manifestation that there is a significant difference between the evaluation of the expert and consumer respondents in terms of the appearance, aroma, flavor, texture, and overrun on the level of acceptability of the developed Ginataang Halo-Halo Ice Cream. The results indicate that the experts and consumer respondents do not concur with their evaluation in terms of the appearance, aroma, flavor, taste, and texture of the level of acceptability of the developed Ginataang Halo-Halo Ice Cream.

Sub-problem No. 4. What is the result of nutrient analysis of Ginataang Halo-Halo Ice Cream?

Based on the results of the nutrient analysis, it contains 6% fat, 7% vitamin C, 4% total carbohydrates and dietary fiber, 3% protein, 2% calcium and iron, and 1%

Vitamin A. (see attached nutrition facts marked as appendix "D")

Summary of Findings

The following are the salient findings of the study.

1. On the ingredients, materials, apparatus, and procedure, in the preparation and development of the Ginataang Halo-Halo Ice Cream. **Ingredients:** saba banana, sweet potato, jackfruit, coconut milk, sugar, glutinous rice powder, salt, all-purpose cream, fresh milk, and ice cream stabilizers.

**Tools and Apparatuses:** hand mixer, blender, measuring cup, measuring spoon, mixing bowl, spatula, knife, and chopping board.

**Procedures:** First, Prepare all the materials and ingredients needed. Wash the tapioca and then boil for about 20 minutes, after 20 minutes of boiling, set aside and let the hot water cook it evenly. Chopped the Saba Banana, and Sweet Potato. Form the Glutinous Rice Powder into small balls. Separate the fruits of Jackfruit. For cooking the Ginataang Halo-Halo, put 1 cup of Coconut Milk, chopped Saba Banana, and Sweet Potato in a big pan or wok. Simmer it until the Sweet Potato softens. Add the rounded glutinous rice and jackfruit, then stir. Mix the Ginataang Halo-Halo mixture and add the remaining 1 cup of Coconut Milk and 3 cups of sugar and simmer. After Boiling, add the Tapioca Pearls and let it cool. After cooling the Ginataang halo-halo, Blend the 1/2 cup of Ginataan liquid and 1/4 cup of Ginataan mixture. In a Mixing bowl, put the heavy cream on thick cream beat using an electric mixer then whip until it becomes thick. Put the blended Ginataan liquid and 1 tsp of Ice cream stabilizer, and whip it again. Add the 1/4 cup of Ginataan mixture. Fold it with the use of Spatula. Pour the mixture into an airtight container (gravy cup). Place it inside the freezer for about 4 to 8 hours or more.

**2. On the respondent evaluation of the level of acceptability of developed Ginataang Halo-Halo Ice Cream.**

The experts and consumer respondents evaluate the level of acceptability of the developed Ginataang Halo-Halo Ice Cream, which ranks no. 1.5 are "Texture" and "Overrun" rated Highly Acceptable as proven by the composite weighted mean of 4.30. Rank no. 3 is "Appearance" rated Highly Acceptable as confirmed by the composite weighted mean of 4.20. Rank no. 4 is "Flavor" rated Acceptable as affirmed by the composite weighted mean of 3.78. Rank no. 5 is "Aroma" rated Acceptable as reinforced by the composite weighted mean of 3.68 and yielded an overall composite weighted mean of 4.84 interpreted as Acceptable.

**3. On the significant difference in the assessment of respondents on the level of acceptability of developed Ginataang Halo-Halo Ice on Cream.**

The results of the significant difference between the evaluation of the experts and consumer respondents on the level of acceptability of the developed Ginataang Halo-Halo Ice Cream obtained a computed T-value of 2.0969 is greater than the critical value of 2.048 at a five percent level of significance with 28 degrees of freedom and verbally interpreted significantly. Hence, resulted in the rejection of the null hypothesis. Since we failed to accept the null hypothesis, there is a strong manifestation that there is a significant difference between the evaluation of the expert and consumer respondents in terms of the appearance, aroma, flavor, texture, and overrun on the level of acceptability of the developed Ginataang Halo-Halo Ice Cream.

**4. On the Nutritional Facts of Ginataang Halo-Halo Ice Cream?**

Based on the results of the nutrient analysis, it contains 6% fat, 71 vitamin C, 4% total carbohydrates and dietary fiber, 3%

protein, 2 calcium and iron, and 1% Vitamin A.

**Conclusions**

In the light of the findings, the following conclusions were derived:

1. Ginataang Halo-Halo can be utilized as the main ingredient in the preparation and development of Ice Cream.
2. The developed Ginataang Halo-Halo Ice Cream was Acceptable to the experts and consumer respondents in terms of appearance, aroma, flavor, texture, and overrun.
3. There is no significant difference between the assessment of the experts and consumer respondents in terms of the appearance, aroma, flavor, taste, and texture of the level of acceptability of the developed Ginataang Halo-Halo Ice Cream.
4. The developed ice cream made from ginataang halo-halo is rich in important nutrients of Protein, Fiber, Calcium, Iron, and vitamins A and C.

**Recommendations**

From the conclusions, the following are hereby recommended:

1. Use the most accurate and proportional amount of ingredients to improve its quality characteristics and level of acceptability.
2. Ginataang Halo-Halo Ice Cream is acceptable to the respondents therefore, the researchers must continue to improve its flavor and aroma.
3. The result of the study should be used as a reference for a future related study.
4. The researchers may subject the product to nutritional analysis or related analysis.