THE INTERNATIONAL JOURNAL OF EDUCATION, MANAGEMENT AND SOCIAL SCIENCES
Volume 1, Issue 1, January - June 2025

PRODUCTION OF BLUE SALT IN ALAMINOS CITY PANGASINAN

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Date of Submission: March 30, 2026
Date of Acceptance: June 24, 2026
Date of Publication: June 30, 2026

ABSTRACT

This study explores the blue salt production process in Alaminos City, Pangasinan, a region well-known for its customs surrounding the production of salt. It seeks to determine the degree of acceptance in terms of texture, appearance, and packaging, as well as the overall satisfaction with the product, when the respondents were categorized based on age, sex, and address. It also attempts to determine the acceptability of blue salt in terms of flavor, aroma, texture, and appearance. A sample of the product was provided by the researcher to the respondents prior to them answering a survey questionnaire used for data gathering. The collected data were collated and subjected to statistical analysis. The experimental research design was used in this study through random sampling among the 100 respondents from different Barangays in Alaminos City. The findings of the study indicate that the manufacture of blue salt might be considered acceptable, as indicated by the respondents' preferences. The results showed that the production of blue salt in Alaminos City Pangasinan as the primary ingredient was feasible and established its marketability.

Keywords: blue ternate, salt, agriculture, production of blue salt

INTRODUCTION

According to Alimentarium (2021), specialty salts such as Himalayan pink salt, Persian blue salt, and Hawaiian black salt are valued for their distinctive colors, flavors, textures, and perceived health benefits. Despite their growing popularity, studies on their chemical composition remain limited. Similarly, NASA (2020) reported that India has become the world's third-largest salt producer, with Gujarat contributing about 75% of the country's total salt production.

In contrast, the Philippines has experienced a significant decline in local salt production despite its extensive coastline, relying on imports for approximately 93% of its salt requirements (Vera Files, 2023). To address this issue, the Philippine government has introduced initiatives such as the Philippine Salt Industry Development Bill and the Department of Agriculture's Development of Salt Industry Project (DSIP), which aim to increase local production through research, technology, infrastructure, and industry modernization (PhilStar, 2023; Viado, 2023).

Challenges affecting the salt industry include climate change, inconsistent weather patterns, limited access to modern technology, inadequate post-harvest facilities, and insufficient capital. The Department of Science and Technology has responded by introducing iodization technologies and improved processing equipment to enhance production efficiency (Arayata, 2018). Despite these efforts, traditional salt-producing areas such as Dasol, Bolinao, Bani, and Alaminos City continue to experience production disruptions due to prolonged rainfall (Legacy Senate, 2022).

Persian blue salt, primarily sourced from Iran, is a rare mineral-rich salt distinguished by its natural blue crystals, crunchy texture, and mild flavor. It is widely used as a finishing salt in gourmet cuisine and is believed to provide health benefits, including improved cardiovascular health, digestion, and blood circulation. Because of its rarity and premium value, blue salt is generally harvested using sustainable small-scale methods, although responsible resource management remains essential due to its finite natural deposits. This study focuses on the production process, characteristics, and potential applications of Persian blue salt.

METHODS

This study employed an experimental research design to evaluate salt production in Alaminos City. The research focused on salt producers ranging from small-scale family-operated businesses to commercial enterprises. Respondents were selected using simple random sampling to ensure equal representation.

Data were collected using a researcher-made structured questionnaire administered by the five researchers, each assigned to a designated group of respondents. The questionnaire consisted of three parts: (1) the respondents' demographic profile (age, gender, and address); (2) the assessment of salt quality based on texture, appearance, and packaging; and (3) the comparison between blue salt and regular salt in terms of their distinguishing characteristics.

The demographic profile variables of the respondents were analyzed using the simple percentage with the following formula:

P= (f x 100)/n
Where:
P= percentage of distribution
F= frequency of responses
N= total number of respondents
100= is given as constant

The Likert scale acts as the framework for interpreting the collected data.

Qualitative Interpretation	Qualitative Interpretation	Limit of Index
5	Acceptable	4.21-5.00
4	Slightly Acceptable	3.41-4.20
3	Undecided	2.61-3.40
2	Slightly Unacceptable	1.81-2.60
1	Unacceptable	1.00-1.80

This is utilized to determine significant differences was present between and among the one formulation with the three varieties (iodize, table, and rock salt) of salt in terms of sensory attributes. The formula is:

RESULTS

PART 1. PROFILE OF THE RESPONDENTS

The following tables show the profile of respondents, including their age, sex, and address.

Table 1.1

Age of the Respondents

Parameters	Frequency n = 100	Percentage %
18 years old and below	25	25
19-30 years old	54	54
31-40 years old	13	13
41-50 years old	5	5
51 years old and above	3	3

As shown in Table 1, most of the respondents 54 (54%) belonged to the age group of 19-30 years old, 25 (25%) belonged to 18 years old and below, 13 (13%) 31-40 years old, 5 (5%) to 41-50 years old, and 3 (3%) belonged to 51 years old and above.

Table 1.2

Sex of the Respondents

Parameters	Frequency n = 100	Percentage %
Male	56	56
Female	44	44

Table 1.2 shows the sex of the respondents. 56 (56%) were male, and 44 (44%) were female.

Table 1.3

Address of the Respondents

Parameters	Frequency n = 100	Percentage %
Alos	5	5
Amandiego	2	2
Amangbangan	2	2
Balangobong	2	2
Balayang	2	2
Baleyadaan	3	3
Bisocol	2	2
Bolaney	6	6
Bued	3	3
Cayucay	2	2
Cabatuan	2	2
Dulacac	4	4
Inerangan	5	5
Lucap	3	3
Linmansangan	3	3
Landoc	3	3
Maawi	3	3
Macatiw	5	5
Magsaysay	3	3
Mona	3	3
Palamis	4	4
Pandan	2	2
Pangapisan	2	2
Poblacion	6	6
Pocalpocal	2	2
Pogo	1	1
Polo	1	1
Quibuar	2	2
Sabangan	1	1
San Antonio	1	1
San Jose	1	1
San Roque	3	3
Santa Maria	1	1
San Vicente	1	1
Tanaytay	3	3
Tangcarang	1	1
Tawintawin	2	2
Telbang	2	2
Victoria	1	1

As shown in Table 1.3, most of the respondents, 6 (6%), were from Bolaney and Poblacion, 5 (5%) were from Alos, Inerangan, and Macatiw, 4 (4%) were from Dulacac and Palamis, 3 (3%) were from Baleyadaan, Bued, Lucap, Linmansangan, Landoc, Maawi, Magsaysay, Mona, San Roque and Tanaytay, 2 (2%) were from Amandiego, Amangbangan, Balangobong, Balayang, Bisocol, Cayucay, Cabatuan, Pandan, Pangapisan, Pocalpocal, Quibuar, Tawintawin and Telbang, and 1 (1%) were from Pogo, Polo, Sabangan, San Antonio, San Jose, Santa Maria, San Vicente, Tangcarang and Victoria.

PART 2. The Degree of Acceptance of Production of Blue Salt in Alaminos City, Pangasinan

Table 2.1, Table 2.2, and Table 2.3 present the production of blue salt in Alaminos City, Pangasinan, of the respondents.

Table 2.1
Production of Blue Salt in Alaminos City, Pangasinan
Formulation 1 (Iodized Salt)

Indicator	AWM	DR
A. Texture		
a. The texture of blue salt is fine.	4.42	A
b. The texture of blue salt is medium.	4.14	A
c. The texture of blue salt is coarse.	3.85	SA
Total	**4.14**	
B. Appearance		
a. The appearance of blue salt is bluish white.	4.34	A
b. The appearance of blue salt is light blue.	4.16	SA
c. The appearance of blue salt is dark blue.	3.56	SA
Total	**4.02**	
C. Packaging		
a. The packaging of blue salt is presentable.	4.6	SA
b. The packaging of blue salt is safe from spoilage.	4.42	A
c. The packaging of blue salt emphasizes the color of the salt.	4.41	A
Total	**4.48**	
Overall Average Weighted Mean	**4.21**	A

1.00-1.80 (Unacceptable); 1.81-2.60 (Slightly Unacceptable); 2.61-3.40 (Undecided); 3.41-4.20 (Slightly Acceptable); 4.21-5.00 (Acceptable)

As gleaned in Table 2.1, the overall average weighed mean of production of blue salt in Alaminos City, Pangasinan Formulation 1 (Iodized Salt) was 4.21, which is interpreted as "Acceptable". Among the indicators of Formulation 1 (Iodized Salt), indicator A, "The texture of blue salt is fine.” under texture, obtained the highest mean, which was 4.42 "Acceptable", followed by indicator B "The packaging of blue salt is safe for spoilage." under appearance which obtained 4.42 "Acceptable". Among the other indicators, Indicator C, "The texture of blue salt is coarse." Under texture obtained the lowest mean of 3.85 "Slightly Acceptable", followed by Indicator C “The appearance of blue salt is dark blue.” Under appearance obtained the second to the lowest mean of 3.56 “Slightly Acceptable”.

SUMMARY OF THE PRODUCTION OF BLUE SALT

INDICATOR	Average Weighted Mean
Texture	4.14
Appearance	4.02
Packaging	4.48

Table 2.2
Production of Blue Salt in Alaminos City, Pangasinan
Formulation 2 (Table Salt)

Indicator		AWM	DR
A. Texture			
a. The texture of blue salt is fine.		4.4	SA
b. The texture of blue salt is medium.		4.27	A
c. The texture of blue salt is coarse.		4.1	SA
	Total	**4.26**	
B. Appearance			
a. The appearance of blue salt is bluish white.		4.48	A
b. The appearance of blue salt is light blue.		4.31	A
c. The appearance of blue salt is dark blue.		3.63	SA
	Total	**4.14**	
C. Packaging			
a. The packaging of blue salt is presentable.		4.62	A
b. The packaging of blue salt is safe from spoilage.		4.45	A
c. The packaging of blue salt emphasizes the color of the salt.		4.5	SA
	Total	**4.52**	
	Overall Average Weighted Mean	**4.31**	A

1.00-1.80 (Unacceptable); 1.81-2.60 (Slightly Unacceptable); 2.61-3.40 (Undecided); 3.41-4.20 (Slightly Acceptable); 4.21-5.00 (Acceptable)

As gleaned in Table 2.2, the overall average weighted mean of production of blue salt in Alaminos City, Pangasinan Formulation 2 (Table Salt) was 4.31, which is interpreted as “Acceptable”. Among the indicators of Formulation, 2 (Table Salt) indicator A, "The packaging of blue salt is presentable.” Under packaging obtained the highest mean, which was 4.62 "Acceptable", followed by indicator A "The appearance of blue salt is bluish white." under appearance which obtained second to the highest mean of 4.48 "Acceptable". Among the other indicators, Indicator C, "The texture of blue salt is coarse." Under texture which obtained the lowest mean of 4.1 "Slightly Acceptable", followed by Indicator C” The appearance of blue salt is dark blue." Under appearance, which obtained the second to the lowest mean of 3.63 "Slightly Acceptable".

SUMMARY OF THE PRODUCTION OF BLUE SALT

INDICATOR	Average Weighted Mean
Texture	4.26
Appearance	4.14
Packaging	4.52

Table 2.3
Production of Blue Salt in Alaminos City, Pangasinan
Formulation 3 (Rock Salt)

Indicator		AWM	DR
A. Texture			
a. The texture of blue salt is fine.		3.91	SA
b. The texture of blue salt is medium.		4.3	SA
c. The texture of blue salt is coarse.		4.37	A
	Total	**4.19**	
B. Appearance			
a. The appearance of blue salt is bluish white.		4.46	A
b. The appearance of blue salt is light blue.		4.31	A
c. The appearance of blue salt is dark blue.		3.69	SA
	Total	**4.15**	
C. Packaging			
a. The packaging of blue salt is presentable.		4.62	A
b. The packaging of blue salt is safe from spoilage.		4.62	A
c. The packaging of blue salt emphasizes the color of the salt.		4.57	A
	Total	**4.60**	
	Overall Average Weighted Mean	**4.31**	A

1.00-1.80 (Unacceptable); 1.81-2.60 (Slightly Unacceptable); 2.61-3.40 (Undecided); 3.41-4.20 (Slightly Acceptable); 4.21-5.00 (Acceptable)

As gleaned in Table 2.3, the overall average weighed mean of production of blue salt in Alaminos City, Pangasinan Formulation 3 (Rock Salt) was 4.31, which is interpreted as "Acceptable". Among Formulation 3 (Rock Salt), indicator A, "The packaging of blue salt is presentable." Under packaging, obtained the highest mean, which was 4.62 "Acceptable", followed by indicator B “The packaging of blue salt is safe for spoilage.” under packaging which obtained 4.62 "Acceptable". Among the other indicators, Indicator A, "The texture of blue salt is fine." Under texture, which obtained the lowest mean of 3.91 "Slightly Acceptable", followed by Indicator C “The appearance of blue salt is dark blue.” Under appearance obtained second to the lowest mean of 3.69 “Slightly Acceptable”.

SUMMARY OF THE PRODUCTION OF BLUE SALT

INDICATOR	Average Weighted Mean
Texture	4.19
Appearance	4.15
Packaging	4.60

Table 3
Significant Differences among the Different Formulations

Groups	*N*	*Average*	*F - Value*	P-value
Formulation 1	100	4.21	1.825	.163
Formulation 2	100	4.31		
Formulation 3	100	4.31		

Analysis of Variance was utilized to determine whether a significant difference exists among the different formulations of Blue Salt. Results showed that there is no significant difference ($F = 1.825$, $P > 0.05$). Thus, it is determined that the different formulations of Blue Salt are statistically the same.

CONCLUSIONS AND RECOMMENDATIONS

From the result of the study that was conducted, the researchers concluded the following:

1. Most of the respondents are in the 19-30 age bracket and are female.
2. The overall consumer sensory evaluation of the production of salt in Alaminos City, Pangasinan, in terms of texture, appearance, and packaging results was acceptable.
3. Based on the respondent's survey results, the second and third formulations are acceptable for the production of blue salt.
4. Most consumers gave the product an excellent verbal interpretation for the general satisfaction of the product. The results showed that the production of blue salt in Alaminos City Pangasinan as the primary ingredient was feasible and established its marketability.

Based on the findings and conclusions, the researchers presented the following recommendations and suggestions:

1. Housewives- They may use this study if they want to start a business because, apart from the small amount of capital you can use, it is easy to do. They may use their social media to sell it online. They are just at home, but they earn money every day.
2. Parents – This is a great help to parents, especially those who have difficulty making their children's snacks. They can get ideas here for making healthy snacks for their children.

3. Hospitality Management Student- This study is a great start for them to discover other Innovative blue salt products. Aside from being easy to make, it is also budget-friendly for students.
4. Entrepreneurs—It will greatly contribute to the business industry, especially for healthy snacks entrepreneurs with large businesses. This study will be their guide in making delicious snacks that use healthy ingredients and are very resourceful. It can also be a way to expand their knowledge of making different types of snacks.
5. Salt Vendor – This study will recommend to the salt vendor to innovate their product.
6. Salt Maker—This study will give salt makers an idea that salt can have colors, which will help them produce more salt.
7. Future Researchers—The researchers recommend this research as a reference and as a basis for their future research plans.

ACKNOWLEDGMENT

The researchers sincerely express their heartfelt gratitude to all those who contributed to the successful completion of this study.

Special appreciation is extended to Mr. Mark Harley V. Bristol, Research Adviser, for his invaluable guidance, expertise, constructive suggestions, and unwavering support throughout the conduct of this research. The researchers also extend their sincere thanks to their research panels and friends for their encouragement, understanding, and continuous support during the preparation of this study.

Above all, the researchers offer their deepest gratitude to Almighty God for His endless blessings, wisdom, strength, and guidance, which made the completion of this research possible.

DECLARATION ON THE USE OF AI TOOLS

In the conduct of the research titled "*Production of Blue Salt in Alaminos City*", artificial intelligence (AI) tools were utilized in a limited yet supportive capacity to enhance grammar, clarity, coherence, and APA formatting. They also aided in citation generation and preliminary literature scanning. All sources were manually verified, and no AI was used to generate original data or conduct analysis. Final interpretations and conclusions were independently developed by the authors, who maintained full oversight and accountability in accordance with ethical research standards.

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