

Acceptability of *Musa balbisiana* (Saba Banana) and *Ipomea batatas* (Sweet Potato) flavored Ice cream

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Abstract:- *Musa balbisiana* (Saba banana) is one of the fruits that is always present in the market because of its year- round yield or productivity. Saba banana is known for its richness in potassium, low sodium, fiber, C. *Ipomea batatas* (Sweet potato) is one of the root crops known to be found anywhere in our backyard as its leaves most commonly used in preparing sinangang and tinola that adds flavor and color to the food thus enhancing satiety value, is nutritious as it has a high content of fiber vitamin A Calcium which is good for the proper development of bones and teeth, vitamin B-6 necessary for the creation of red blood cells , magnesium good for energy production and even protein that allows metabolic reactions to take place and coordinates bodily functions. Based on the mentioned nutrient contents of both saba banana and sweet potato, these can be used as ingredients and can be utilized either as flavoring or main ingredients in making ice cream In response to Republic Act 11293 otherwise known as the “ Philippine Innovation Act “ signed by President Rodrigo R. Duterte on April 17, 2019.(The Philippine Innovation Act and Its Implementing Rule and Regulations , 2010) and because many Filipinos suffer from one or more forms of malnutrition and it is caused by various reasons like poverty, population, politics, pathology and production of food and preservation of food from wastage and loss (Thajer,2009), to introduce the utilization of saba banana and sweet potato in making ice cream to small scale enterprise to engage in this kind of business enterprise where the resources are available, thus engaging in Micro, Small and Medium Enterprises (MSMEs) can be regarded as the most vibrant sector in socioeconomic development in different modes. This can promote improvement of the Quality of Life (QoL) which includes all those factors significant for our living qualitatively (Loucks, 2010) and this will encourage local farmers to cultivate and propagate saba banana and sweet potato to produce and sustain the production of this kind of ice cream

This study was quantitative experimental research. Respondents were the twenty-five (25) trained panelists/ experts in food related discipline who are members of the academe either in public secondary high school and college faculty specialized in food technology. Data gathered were described and analyzed using Special Analysis of Variance. The sensory characteristics of the two treatments were compared with one another using the 9-point Hedonic Scale by the respondents.

Findings revealed that Treatment 1 (cooked) saba banana and sweet potato had yield the best quality puree for best quality puree. This study also showed that the overall acceptability of the two treatments T1 (cooked) and T2 (uncooked) were significantly different in terms of taste, texture and color were T1 is Liked Extremely were in T2, the taste, texture and color were Liked Least. It is then strongly recommended that in preparing ice cream using saba banana and sweet potato using treatment 1 ingredients should be properly cleaned, pared and cooked and should passed several times in a very fine mesh sifter so that saba banana and sweet potato texture will attain its high- quality puree making an excellent, best quality ice cream.

Keywords: *Puree, Satiety, Sensory Characteristics, Texture and Yield.*

I. INTRODUCTION

In response to Republic Act 11293 otherwise known as the “ Philippine Innovation Act “ signed by President Rodrigo R. Duterte on April 17, 2019.(The Philippine Innovation Act and Its Implementing Rule and Regulations , 2010) and because many Filipinos suffer from one or more forms of malnutrition and it is caused by various reasons like poverty, population, politics, pathology and production of food and preservation of food from wastage and loss (Thajer, 2009), to introduce the utilization of saba banana and sweet potato in making ice cream to small scale enterprise to engage in this kind of business enterprise where the resources are available, thus engaging in Micro, Small and Medium Enterprises (MSMEs) can be regarded as the most vibrant sector in socioeconomic development in different modes. This can promote improvement of the Quality of Life (QoL) which includes all those factors significant for our living qualitatively (Loucks, 2010) and this will encourage local farmers to cultivate and propagate saba banana and sweet potato to produce and sustain the production of this kind of ice cream that would not only give enjoyment for its flavor more significantly for its nutritional impact as well. Hence, urgent and bold actions are need to be taken.

Children everywhere are fond of eating ice cream and enjoying its sweet flavor. Eating ice cream should not only benefit for enjoyment but for its nutritional purpose for all ages either young or old. *Musa balbisiana* (Saba banana) is one of the fruits that is always present in the market because of its year- round yield or productivity. Saba banana is

known for its richness in potassium which is good for your heart health and blood pressure, it has low sodium content that blocks the proper circulation of the blood throughout the body, fiber that keeps our digestive system clean and healthy, ease in bowel movement, and flushing cholesterol and harmful carcinogens out of the body and vitamin C that repair tissue and the enzymatic production of certain neurotransmitter while Ipomea batatas (Sweet potato) is one of the root crops known to be found anywhere in our backyard as its leaves most commonly used in preparing sinigang and tinola that adds flavor and color to the food thus enhancing satiety value, is nutritious as it has a high content of fiber vitamin A which is good for eye sight, Calcium which is good for the proper development of bones and teeth, vitamin B-6 necessary for the creation of red blood cells, magnesium good for energy production and even protein that allows metabolic reactions to take place and coordinates bodily functions. Scholars proved that the leaves of sweet potato provide huge portions of protein, having great amino acid score. All parts of sweet potato are abundant in dietary fibre, the leaves in particular are soluble dietary fibre and stems are insoluble dietary fibre, respectively. The mineral content like iron and vitamins such as carotene, vitamin B2, vitamin C and vitamin E are rich in leaves in contrast with other vegetables. Furthermore, leaves has reasonably more polyphenol content (Hiroshi et al. 2000).

Based on the mentioned nutrient contents of both saba banana and sweet potato, these ingredients can be utilized either as flavoring or main ingredients in making ice cream such that not only young once could enjoy eating ice cream but also the old one contributing to their health and wellness as well. This study will also introduce the utilization of saba banana and sweet potato in making ice cream to small scale enterprise to engage in this kind of business where the resources are available and this will encourage local farmer to cultivate and propagate saba banana and sweet potato to produce and sustain the production of this kind of ice cream, thus will augment their income and can improve their quality of life.

II. OBJECTIVES

Generally, the study determined the level of acceptability of Saba banana and Sweet potato puree in two treatments in making ice cream in terms of their quality attributes. Specifically, it described the level of acceptability of saba banana and sweet potato flavored ice cream yielded from the two processing methods of preparing puree.

III. METHODOLOGY

This study was quantitative experimental research. Respondents were the twenty-five (25) trained panelists/experts in food related discipline who are members of the academe either in public secondary high school and college faculty specialized in food technology. Data gathered were described and analyzed using Special Analysis of Variance. The sensory characteristics of the two treatments were

compared with one another using the 9-point Hedonic Scale by the respondents.

Materials and steps:

Processing of Saba Banana and Camote Puree

- Raw materials: ripe banana fruit, camote, evaporated milk
- Tools and equipment: plastic hand gloves, knife, chopping board, trays, mixing bowls, 50 and 70 mesh strainer, electric blender
- Procedure

Approximately 1 kilograms of saba banana and 1 kilograms camote were washed peeled, banana seeds were removed cut into halves. Chopped into smaller pieces and blended with evaporated milk to produce puree. Two processes were conducted to produce a good quality puree. First processing method (Treatment 1) was cooking the puree using a double sauce pan under medium heat fire for 1 minute at 60 degree Celsius. The second process (treatment 2) is uncooked method, the puree has not been subjected to any heat treatment procedure. To avoid clumps, using a fine mesh will do.

Preparation of the Saba Banana and Camote Ice cream

- Raw materials: Processed Saba Banana and camote puree (T1 and T2), All purpose cream, milk boy powder and condensed milk.
- Tools and Equipment: Mixing bowls, rubber scraper, electric mixer, 80 mesh sifter, ladle, ice cream cups and freezer
- Procedure:

Nestle cream a certain brand of all purpose cream was chilled overnight and blended with condensed milk to make the cream mixture. Saba banana and camote puree in two treatments were then mixed with the cream mixture and subjected to high speed mixing with the use of electric mixer.

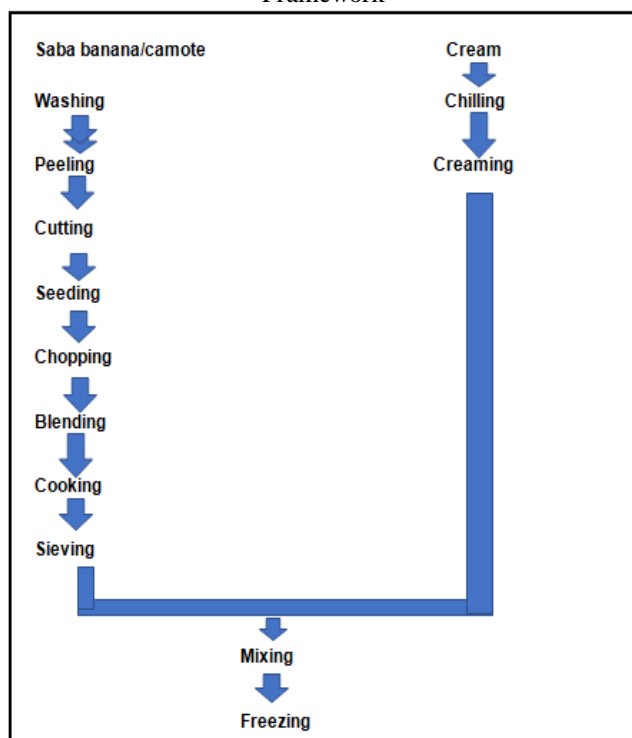
The processed cream, saba banana puree and camote puree were passes through a fine mesh sifter to eliminate extra clumps and subjected to overnight freezing.

Saba banana and camote ice cream made from the two processing methods in preparing ice cream made to determine the acceptability the product in terms of their quality attributes. According to Lepore, Sensory evaluation is the process of using our senses (taste, smell, touch sight) and applying them to determine the acceptability of foods. To ensure that it will be assess on the basis of its looks, smells and taste.

In order to measure the acceptability of the saba banana and camote ice cream, evaluators used the 9- point Hedonic scale. They rated the two samples from 1-9 where 1 corresponds the “dislike extremely” which means the least accepted and 9 corresponds to “liked extremely “which means the most accepted product. To compare the significant differences between the two banana and camote

ice cream in terms of their sensory characteristics, t-test was used.

Fig. 1 Saba Banana and Camote Ice Cream Processing Framework



IV. RESULTS AND DISCUSSIONS

Table 1. Mean acceptability of the quality of banana and camote ice cream yielded from the two processing methods.

Banana/Camote Ice Cream				
Quality Attributes	T1-Cooked banana/camote		T2-Uncooked banana/camote	
	Mean	Description	Mean	Description
Taste	8.9	Liked extremely	7.03	Liked moderately
Texture	8.75	Liked extremely	6.97	Liked moderately
Color	8.34	Liked much	6.88	Liked Moderately
Over all Mean	8.68	Liked extremely	6.93	Liked moderately

Table 1 shows the computed mean scores for taste, texture and color in the two processing methods in preparing saba banana and camote ice cream.

It can be noted that the mean score of treatment 1 with regard to taste and texture 8.6 and 8.6, respectively described as liked extremely, while the color was rated liked very much as reflected by its mean score of 8.3

The overall mean score of 8.6 in terms of taste, texture, and color implies that the cooked saba banana and camote puree as ingredient in making ice cream was liked extremely by the panelists. According to studies, cooking

makes some foods safer. The cooking process kills some bacteria, and harmful compounds in food. (Brazier, 2020).

This support the studies conducted by Charles Sims and Robert Bates in 1994 as cited by De Castro entitled Challenges to tropical fruit juices: Banana or puree effectively inhibited browning of color and the blanched puree (30 seconds at -90° C with rapid cooling) can be frozen in bulk, with better retention of volatiles. While the mean score of treatment2 with regard to taste, texture and color were rated 7.03, 6.97, 6.88, respectively described as liked moderately by the panelists. The overall mean score of 6.93 in terms of taste texture and color implies that the uncooked saba banana and camote puree e as ingredients in making ice cream was liked moderately by the panelists as confirmed by Philippine medicinal Plants (1999) “the effect of aqueous extract of sweet potato on food intake in male Wistar rats, showed reduction by reducing appetite.” Scholars proved that some foods are not safe to eat uncooked. The cooking process breaks down toxic chemicals in some food, others carry a risk of food poisoning. (Warwick, 2020). People can also get food poisoning from raw fruits and vegetables. (Brazier, 2020)

Table 2 Test of difference of treatment 1 treatment 2

Variables	t	sig. (2 tailed)	Interpretation
Taste	23.163	.000	significant
Texture	20.528	.000	significant
Color	16.387	.000	significant

Table 2 reflected the difference of making banana and camote ice cream using two treatments: t1 cooked t2 uncooked. As shown by the result, it can be interpreted that treatment1 has significant difference between t2 in making banana and camote ice cream in terms of taste, texture, and color reaching t-test such as 23.163, 20.528, 16.387 with sig. of .000 respectively. The foregoing result implies that the overall acceptability of the two treatments were significantly difference as shown in table 2. The taste, texture and color in treatment n1 is liked extremely. In treatment2 the taste, texture and color are liked least.

V. CONCLUSION

Based on the findings in preparing banana and camote ice cream, it should be noted that preparing banana and camote ice cream using treatment 1 which involved cooking of the ingredients to yield a quality puree is the best and the most acceptable method than making ice cream out of banana and camote puree which is uncooked.

RECOMMENDATIONS

Based on the findings and conclusions the researchers propose the following;

It is then strongly recommended that in preparing ice cream using saba banana and sweet potato using treatment 1 ingredients should be properly cleaned, pared and cooked and should passed several times in a very fine mesh sifter so

that saba banana and sweet potato texture will attain its high- quality puree making an excellent, best quality ice cream. It is also recommended for further study on the shelf-life of this processed saba banana and sweet potato ice cream as well as its profitability and marketability. The UEPL Campus through its cafeteria should be utilized in commercialization and in the marketability of the processed saba banana and sweet potato flavored ice cream. In addition, this research should be utilized in the extension program of the College of Industrial Technology University of Eastern Philippines Laoang Campus Laoang, Northern Samar.

ACKNOWLEDGEMENT

It is with deep appreciation that I acknowledge the following for the realization of this research:

Dr. Luisito P. Muncada – Campus Director

Dr. Ma. Asuncion G. Desales- Assistant. Director for Academic Affairs

Dr. Teody M. Corachea – Former UEPL Research Coordinator

Inst. Mary Ann A. Bantilo – Assistant Director for Research and Extension

Dr. Jocelyn P. Igdon, Inst. Alejandro L. Giray , Inst. Ma. Rachelle O. Galit, Inst. Nilo D. Giray and Mr. Marvin I. Acebuche

The UEP Laoang Campus Family and food experts from LNTHS

Conflict of Interest

None

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