

Utilization of Taro for Innovative Flavored Chips Product

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Abstract:- This paper aimed to describe the utilization of taro for innovative flavored chip products. This study was conducted at the Entrepreneurship Workroom2, College of Business and Accountancy, Tarlac State University, during the first semester of Academic Year 2019-2020. Four treatments were utilized in the study. Data were gathered from two hundred panelists comprising forty College of Business and Accountancy faculty members, fifty College of Business and Accountancy students and one hundred and ten randomly selected TSU students who serve as evaluators of the taro in terms of appearance, odor, texture, taste, and general acceptability. Results revealed that all treatments of taro were evaluated as slightly appealing to moderately appealing appearance, absence of odor to very discernible flavor odor, moderately crunchy texture, not delicious to moderately delicious taste, not liked much to like very much ranges of acceptability.

Keywords:- taro; innovative chips; utilization; flavored chips; entrepreneurship.

I. INTRODUCTION

Colocasia esculenta (L.) Schott is referred to as taro. The name for tannia is a variant of the word taro used in different regions of the nation. Another name for this plant in English is taro or gabi. Although it ranks third among the root crops grown in the Philippines in terms of productivity and planted area, this plant is grown all year long in a range of soils. The tubers of the gabi plant are useful sources of protein and carbs, providing twice as much of each as sweet potatoes and four times as much as cassava. The entire gabi plant is edible. The leaves are rich in calcium, potassium, vitamins A and C, and protein (Magpili and Tangonan, 2018).

An herbaceous plant with a height of 1-2 meters, taro. The plant is made up of a core corm that lies just below the soil's surface and from which leaves, roots, cornels, daughter corms, and runners all grow. (<http://www.fao.org/world/regional/RAP/index.asp/en/>)

A type of processed snack food manufactured from various crops, chips. Some include both cereal and grains. Many are deep-fried or dried before being sprinkled with sugar or seasoned salt and served. Although they can be made of any food that can be flavorfully thinned and crisped, these are typically made of grains. In the realm of entrepreneurship, the taro industry supplies good employment opportunities predominantly in rural areas. Where taro business occurs, then the facilities for cleaning,

sorting, packing, and shipping the taro supply more avenues for poverty alleviation and employment generation.

It is therefore within this premise that taro reaches its greatest importance, particularly in considering alternative resources available for the innovative product.

This study was limited to the utilization of taro in the production and quality evaluation of flavored taro chips. Sensory evaluation was used in the parameters of appearance, texture, odor, taste, and general acceptability. The taro used was bought at the Tarlac City Public Market, Tarlac.

II. STATEMENT OF THE OBJECTIVES

The study was conducted at the Entrepreneurship Workroom-2, College of Business and Accountancy, Tarlac State University, Tarlac City. This study was conducted in October 2019.

This study aimed to utilize taro for producing innovative flavored chips. Specifically, this sought to have:

- Evaluated the sensory quality of flavored taro chips in terms of appearance, texture, odor, taste, and general acceptability.
- Identified the most acceptable number of flavorings used in formulating taro chips in terms of general acceptability.

III. METHODOLOGY

A. Preparation of ingredients

The ingredients were accurately measured according to treatments.

Ingredients	Portion
Mashed Taro (Gabi)	200 grams
Flour	3 cups/325 grams
Egg	1 pc
Flavoring (cheese, barbeque, sour cream)	Add as desired based on the most acceptable taste
Salt	1 gram
Corn Starch	20 grams

Table 1: Apportionment of Ingredients

B. Preparation of equipment and utensil

All the equipment and utensils were cleaned and arranged in the Entrep Workroom-2 located at CBA Building, Tarlac State University. The food preparation table area for use with their corresponding costs.

Equipment/Utensil	Unit	Description	Amount/Cost
Noodle Maker	1	Kitchen device that helps knead and shape pasta dough into many different varieties of fresh pasta	P6,200.00
Double Burner Stove	1	Apparatus in which electricity or a fuel is used to furnish heat, as for cooking or warmth.	P500.00
Gas Tank	1	A tank for holding gas or gasoline.	P500.00
Chopping boards	1	A wooden board where meats or vegetables can be cut.	P100.00
Cooking Knives	3	A cutting instrument consisting of a sharp blade attached to a handle.	P100.00
Mixing Bowls and plates	3	A shallow flat receptacle with a raised edge or rim, used for carrying, holding, or displaying articles	P300.00
Ladle	2	A deep-bowled long-handled spoon used especially for dipping up and conveying liquids.	P80.00
Wire whisk	1	A tool used to mix ingredients, cooking and combining the white part of the egg with the yolk.	P15.00
Frying Pan	1	A tool used to fry the chips.	P500.00

Table 2: Equipment and Utensils

C. Preparation of the taro flavored chips

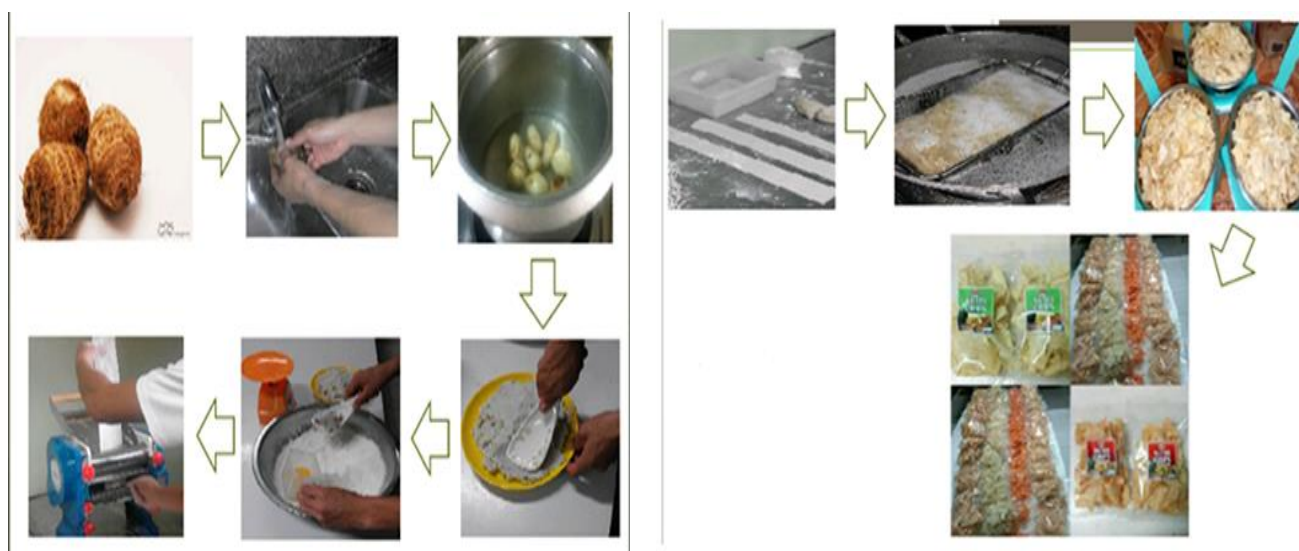


Fig. 1: Steps of Flavored Taro Chips Production

D. Treatments and proportion of ingredients

There were four treatments in making flavored taro chips. Different amounts of flavoring powder were used as follows:

Ingredients	T1 (Control)	T2	T3	T4
Taro	550g	550g	550g	550g
Flavoring Powder	0%	3%	5%	7%
Cooking Oil	½ gal	½ gal	½ gal	½ gal

Table 2: Treatments of the Flavored Taro Chips

E. Sensory evaluation

The samples were put on individual plates for evaluation of two hundred tasters comprising forty College of Business and Accountancy faculty members, fifty College of Business and Accountancy students coming from five departments (10 students from each department of Accountancy, Entrepreneurship, Financial Management, Hospitality Management and Marketing Management) and one hundred and ten randomly selected TSU students serve as evaluators of the taro in terms of appearance, odor, texture, taste, and

general acceptability. The taster has given an evaluation sheet for the ratings and scores of the product.

F. Statistical analysis

One-way analysis of variance was used in analyzing the differences in the sensory evaluation of different treatments. Comparison of means was conducted using Scheffe’s Test to determine which means were significantly different at 0.05 level.

The following Likert scales were utilized to describe the objectives of the study:

Scale	Description	Weighted Mean
1	Unappealing	1.00-1.44
2	Slightly Unappealing	1.45-2.44
3	Slightly Appealing	2.45-3.44
4	Moderately Appealing	3.45-4.44
5	Very appealing	4.45-5.00

IV. RESULT AND DISCUSSION

A. Appearance

Table 3 presents the data appearance of taro chips.

Treatments	Mean	Description
1	2.5	Slightly Appealing
2	4.0	Moderately Appealing
3	4.1	Moderately Appealing
4	4.3	Moderately appealing

Table 3: Appearance of Taro Chips

It can be gleaned from the table that Treatments 2, 3, and 4 were all evaluated as moderately appealing with mean ratings of 4.0, 4.1, and 4.3 respectively. Meanwhile, treatment 1 was rated as slightly appealing with a mean rating of 2.5.

In sense, the addition of flavorings to taro improved the overall appearance of the resulting taro chips.

Statistical analysis using Scheffe’s test indicated significant difference on appearance (Magilid, M. and Tangonan, 2008). Treatments 2, 3, and 4 had registered significantly higher mean ratings than Treatment 1 (control) which had no flavorings at all.

B. Texture

The data for texture of taro chips shown in Table 4.

Treatments	Mean	Description
1	4.2	Moderately Crunchy
2	3.8	Moderately Crunchy
3	3.5	Moderately Crunchy
4	4.3	Moderately Crunchy

Table 4: Texture of Taro Chips

As presented in Table 2, the panelists consistently rated “Moderately crunchy” on treatments 1, 2, 3 and 4 respectively. This consistency emphasized on product and process innovations of the taro as far as texture is concerned.

Treatment 4 rated the panelists as the highest mean with 4.2, while the lowest is the treatment 3 with a mean of 3.5.

C. Odor

As presented in Table 5, T4 had the highest mean of 4.3 which is extremely near to T3 which falls with the same description moderately discernible flavor odor.

Treatments	Mean	Description
1	1.2	Absence of odor
2	2.1	Slightly discernible flavor odor
3	4.1	Moderately discernible flavor odor
4	4.3	Moderately discernible flavor odor

Table 5: Odor of Taro Chips

Majority of the tasters described the product to have slightly discernible flavor odor for T2 which had a mean score of 2.1. Obviously, T1 (control) registered the lowest mean of 1.2 because of no flavors added.

Furthermore, this revealed that as the more flavoring powder is added, the mean score likewise increased as manifested in the table in terms of odor.

D. Taste

Table 6 summarizes the result on the taste of the taro chips.

Treatments	Mean	Description
1	1.2	Not delicious
2	2.0	Slightly delicious
3	4.2	Moderately delicious
4	4.2	Moderately delicious

Table 6: Taste of Taro Chips

Treatment 1 was rated a mean score of 1.2 and with verbal description of not delicious. This explains how important the flavor is for the product. Meanwhile, Treatments 4 and 3 were rated both 4.2 with verbal description of moderately delicious. This signifies that the amount of powder for flavorings in the taro is moderately appropriate to the panelists’ tastes.

E. General Acceptability

Table 7 shows the general acceptability of taro chips by the panelists. The table discloses that the use of different percent of flavoring significantly affected the taro chips. Notably, Treatment 4 registered the highest mean score of 4.6 which was noted by the panelists as liked very much. Not like very much was registered to Treatment 1 with mean score of 1.4. This implies with the first statement that flavorings had something to do with taro chips as far as general acceptability is concerned. Meanwhile, panelists tend not to be so satisfied with treatments 2 and 3 with mean scores of 2.0 and 4.2, respectively.

Treatments	Mean	Description
1	1.4	Not like very much
2	2.0	Not like much
3	4.2	Moderately like much
4	4.6	Like very much

Table 7: General Acceptability of Taro chips

The general acceptability of the product was susceptible affected by the sensory parameters by the panelists.

V. SUMMARY, CONCLUSION AND RECOMMENDATIONS

This study aimed to describe the utilization of taro for innovative flavored chips product. This study was conducted at the Entrep Workroom2, College of Business and Accountancy, Tarlac State University, during first semester Academic Year 2019-2020. Four treatments were utilized in the study. Treatments 1, 2, 3 and 4 with corresponding 0% (control), 3%, 5% and 7% amount of flavorings.

Data were gathered from two hundred panelists comprising forty College of Business and Accountancy faculty members, fifty College of Business and Accountancy students and one hundred and ten randomly selected TSU students serve as evaluators of the taro in terms of appearance, odor, texture, taste, and general acceptability. Results revealed that all treatments of taro were evaluated as slightly appealing to moderately appealing appearance, absence of odor to very discernible flavor odor, moderately crunchy texture, not delicious to moderately delicious taste, not liked much to liked very much ranges of acceptability.

The findings in this paper provide some indications of the most acceptable standard for the product. It is recommended to future researchers that costing vis-a-vis flavors of taro chips should be taken into considerations for competitive advantage.

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