CASHEW APPLE CHIPS

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ABSTRACT This study aimed to select the most suitable ripeness of cashew apple for processing chips. Data were gathered using the Hedonic Scale for Sensory evaluation utilizing 15 evaluators through physical observation and laboratory tests. The following were the finding revealed in the study: Slightly ripe cashew apple produced dilated, light green, and crunchy chips and strongly like as to appearance, color, texture, aroma, mouthfeel and taste; Ripe cashew apple produced constricted, yellow and less crunchy and strongly like as to color, aroma and taste moderately ripe for mouth feel and slightly like for appearance and texture; Overripe cashew apple produced constricted, golden brown and least crunchy and strongly like for aroma and taste moderately like for color and mouthfeel and slightly like for appearance and texture; and The microorganism has not controlled the fact that the sample submitted for laboratory test was not newly produced due to in availability of cashew apple is from February to May while the last test was last August 8, 2018.

Keywords: Cashew Apple, Chips, sensory evaluation

INTRODUCTION

Background of the Study

The cashew tree, a tropical evergreen, produces a cashew nut and cashew apple. The cashew nut is served as a snack or used in recipes, like other nuts. The cashew apple is the fruit. In Guimaras, cashew is one of the fruit trees widely grown in the province where often only the seeds have the economic value once produced as nuts seeds. After the seeds are detached from the fruit, they are just thrown. If there are those that eat these, only few.

Unfortunately, cashew apples are remarkably perishable. Unless they are frozen or kept at a cool temperature, fresh apples last only for a day or so. Ripe cashew apples, once dropped, are prone to bruising and rotting in the sun. When their colors have fully formed, it is best to gently pluck the fruits from the tree. If ripe, they should come off the tree easily. In warm conditions, cashew apples will continue ripening, but they should only be kept at room temperature for a day.

Populations around the world have extolled the health benefits of cashew apples for centuries which is a good source of iron, calcium and phosphorous and has five times the vitamin C of an orange. Among the cashew fruit's health benefits are lowering the risk of heart attack, controlling blood pressure, dealing with asthma, against cancer, healthy eyes, preventing free radicals, handling anemia (The Earth of India, 2019).

Objective of the Study

This study was conducted to select the most suitable ripeness of cashew apple for vacuum frying.

MATERIALS AND METHODS

Materials

Ripe cashew apple
Knife
Chopping board
Boiling container
Small basin
Weighing scale
Polypropylene bag
Freezer
Vacuum fryer
Sackcloth
Wooden scream cabinet

Methods

The procedure of Cashew Apple Chips

1. Slice the cashew apple into appropriate sizes for chips.
2. Blanch (2 minutes) the pulp in boiling water until the pulp turns soft to touch.

3. Let the blanches cashew apple to cool. Then pack in a polypropylene bag and freeze.
4. The following day, take out the frozen cashew apple. Deep fry (95ºc, 10 minutes, 20 stirring) in frying chamber.
5. Place the fried product inside a clean sackcloth and centrifuge for 7 minutes. After centrifuging, allow to cool and pack in thick polypropylene bags. Store packed products inside a wooden screen cabinet in a cool dry place.
6. Repeat steps 1-5 for replications as indicated below (slightly ripe, ripe and overripe).

RESULTS AND DISCUSSIONS

Table 1 shows that for trial 1 for all kinds of maturity, the process did not proceed to vacuum frying because after slicing the cashew apples were sliced they were placed inside the freezer where they stayed for 2 weeks and when they were taken out from the freezer, it has been found out that they were moldy already. In trial 2, the 5 kgs slightly ripe produced 3 kgs sliced the 7 kgs ripe, 2kgs and the 8 kgs overripe, 1 ½ kgs while for trial 3, the 6 slightly ripe produced 4 kgs sliced, 6 kgs ripe produced 3 kgs and the 8 kgs overripe produced 3 kgs. The reason why there were more chips produced by the slightly ripe because of more wastage in slicing ripe and overripe cashew apples.

Table 1. Mass of Sliced Cashew

Maturity of Cashew Apple	Trial 1		Trial 2		Trial 3	
	Cashew Apple	Sliced Cashew Apple	Cashew Apple	Sliced Cashew Apple	Cashew Apple	Sliced Cashew Apple
Slightly ripe	6 kgs	The sliced cashew apples were not subjected to vacuum frying due to poor quality as a result of long stay at the freezer	5 kgs	3 kgs	6 kgs	4 kgs
Ripe	6 kgs		7 kgs	2 kgs	6 kgs	3 kgs
Overripe	6 kgs		8 kgs	1 ½ kgs	8 kgs	3 kgs

Table 2 shows that out of 4 kgs slightly ripe cashew apple, 524.8 grams of chips produced; the 3 kgs ripe produce 478.32 grams chips and 3 overripe produced 483.6 grams.

Table 2. Mass of Cashew Apple Chips Produced

Maturity of Cashew Apple	Mass of Sliced Cashew Apple	Mass of Cashew Apple Chips
Slightly ripe	4 kgs	524.8 grams
Ripe	3 kgs	478.32 grams
Overripe	3 kgs	483.6 grams

It is shown in table 3 that for physical characteristics of cashew apple chips as to appearance the slightly ripe produced dilated chips while the ripe and overripe the chips were constricted; as to color the chips from slightly ripe were light green, the ripe yellow and the overripe golden brown; as to texture the slightly ripe was crunchy, ripe less crunchy and the overripe least crunchy.

Table 3. Physical Characteristics of Cashew Apple Chips

Maturity of Cashew Apple	Cashew Apple Chips		
	Appearance	Color	Texture
Slightly ripe	Dilated	Light green	Crunchy
Ripe	Constricted	Yellow	Less crunchy
Overripe	Constricted	Golden brown	Least crunchy

In table 4 the sensory evaluation results of cashew apple chips show that those produced from slightly ripe for appearance, color, texture, aroma, mouth feel and taste were strongly like; for the ripe strongly like as to color, aroma and taste moderately ripe for mouth feel and slightly like for appearance and texture and those from overripe were strongly like for aroma and taste moderately like for color and mouth feel and slightly like for appearance and texture.

Table 4. Results of Sensory Evaluation of Cashew Apple Chips

Maturity of Cashew Apple	Cashew Apple Chips					
	Appearance	Color	Texture	Aroma	Mouth Feel	Taste
Slightly ripe	Like strongly	Like strongly	Like strongly	Like strongly	Like strongly	Like strongly
Ripe	Like slightly	Like strongly	Like slightly	Like strongly	Like moderately	Like strongly
Overripe	Like slightly	Like moderately	Like slightly	Like strongly	Like moderately	Like strongly

Table 5 shows micro laboratory test result where the aerobic plate count is <250 cfu/g sample, Escherichia coli count is <1.8 MPN/g sample and the molds and yeast count is <100 cfu/g sample. The microorganism was not controlled the fact that the sample submitted for laboratory test was not newly produced due to in availability of cashew apple is from February to May while the last test was last August 8, 2018.

Table 5. Micro Laboratory Test Results

Sample Description	Parameter	Result
Cashew Apple Chips 90 grams	Aerobic Plate Count	< 250 cfu/g sample
	Escherichia Coli Count	< 1.8 MPN/g sample
	Molds and Yeast Count	100 cfu/g sample

CONCLUSION

The slightly ripe cashew is the most suitable for vacuum frying. The chips produced possessed exact characteristics of chips. Microorganism contamination of the product can be controlled if the sample are newly produced.

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