

STAR OF THE FRUITS AND RATTAN: NOW AN ECONOMIC STAR



Gerome B. Taguam
QUIRINO STATE UNIVERSITY
Diffun, Quirino Region 2
Philippines



Rationale

Jelly refers to a clear or translucent fruit spread made from sweetened fruit (or vegetable) juice and is set by using its naturally occurring pectin, whereas outside North America jelly refers jelly to a gelatin-based dessert. Additional pectin may be added where the original fruit does not supply enough, for example with grapes. Jelly can also be made from sweet, savoury or hot ingredients (http://en.wikipedia.org/wiki/Fruit_preserves).

Star fruit known is an attractive, exotic, tropical, and shrub-like ornamental tree of the Oxalidaceae family.

The ripe fruits can be eaten fresh or used to produce juice, jelly, or wine (S. Napahde, A. Durve, D. Bharati, and N. Chandra, 2010).

The fruit is also widely used in traditional medicine for the treatment of a wide range of ailments (Payal, G. et. al, 2012). It is also a potential source of pectin (Phatak, A. et. al, 2012).

According to Patil, et.al. (2010), star fruit juice has been shown to contain active constituents such as vitamins, amino acids, ascorbic acid, oxalic acid, tartaric acid, citric acid, carbohydrates, fats, and proteins.

Rattans (Calamusnagbettai) are one of the least-protected groups of flowering plants (Dransfield, 1981). In India, and in all cane-growing countries, rattans are an exhaustible raw material of the evergreen forests.

The exploitation of wild rattans is increasing with the global increase in demand for cane furniture. This resource is, therefore, bound to dry up in the future.

Rattan plantations bring certain socio-economic benefits to people. If properly managed, they safeguard the sustainability of the forests while providing additional income for people who live in the surrounding areas.

Star fruit and Rattan fruit are in the high risk of wastage; however there is high demand for jelly. With the following reasons, this study was conceptualized to evaluate the acceptability of Star fruit and Rattan in processing jelly products.

Objectives

This study aims to develop product made of Star fruit or Balimbing and Rattan Fruit or Lituko.

Specifically it aims to:

- a. produce a jelly product made from Star fruit and Rattan fruit;
- b. compare the overall eating quality of Star fruit and Rattan jelly in terms of consistency, aroma, flavor; and
- c. compare the overall acceptability of Star fruit and Rattan jelly.

Research Methodology

Star Fruit Jelly

Materials:

- 2 cups star fruit juice (480 grams)
- 2 cups white sugar (510 grams)

The
Schematic
Procedures

Selecting quality materials

Washing

Chopping

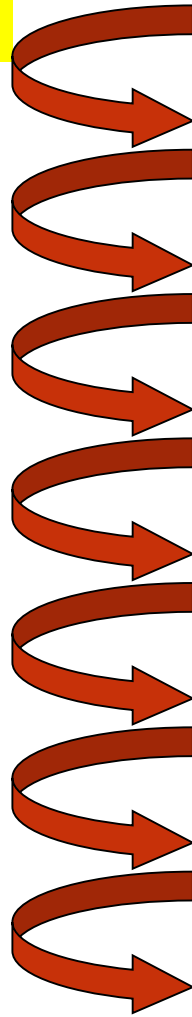
Boiling

Straining

Cooking

Bottling

Pasteurizing



Rattan fruit Jelly

Materials:

- 2 cups Rattan fruit juice (480 grams)
- 3 cups white sugar (715 grams)

The
Schematic
Procedures

Selecting quality materials

Washing

Removing of the fruit coat and seeds

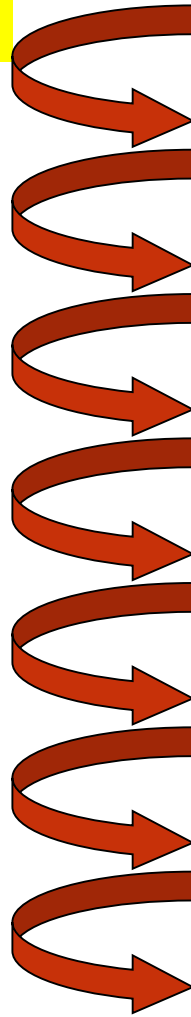
Boiling

Straining

Cooking

Bottling

Pasteurizing



Experimental Design and Layout

This study was laid out in a Complete Randomized Design (CRD) with 3 treatments. The layout is presented below:

I	II	III
T_1	T_2	T_3
T_2	T_3	T_1
T_3	T_1	T_2

The 9 Point Hedonic Scale & 5 Point Organoleptic Scale was used to determine and describe the degree of likeness or dislike of the developed Star fruit and Rattan by product.

Results and Discussion

Table 1. Analysis of Variance on the Flavor/Taste, Aroma and Consistency of Star fruit and Rattan Jelly

Treatments	Flavor/Taste	Description	Aroma	Description	Consistency	Description
T ₀ - Commercial Guava Jelly	4.32	Very Good	4.16	Very Good	4.04	Very Good
T ₁ - Rattan Jelly	3.8	Good	3.64	Good	3.6	Good
T ₂ - Star fruit Jelly	3.28	Good	3.16	Good	3.08	Good

Table 2. Analysis of Variance on the Overall Eating Quality of Star fruit and Rattan Jelly

Treatments	Overall Eating Quality	Description
T ₀ - Commercial Guava Jelly	4.16a	Very Good
T ₁ - Rattan Jelly	3.72	Good
T ₂ - Star fruit Jelly	3.04	Good

Table 3. Analysis of Variance on the Acceptability of Star fruit and Rattan Jelly

Treatments	Acceptability	Description
T ₀ - Commercial Guava Jelly	6.84	Like Very Much
T ₁ - Rattan Jelly	6.6	Like Very Much
T ₂ - Star fruit Jelly	6.08	Like Moderately

Summary

This study aimed to find out the acceptability of Star fruit and Rattan fruit in the preparation of “Jelly”. Specifically, the study aimed to: produce a jelly product made of Star fruit and Rattan fruit; and compare the acceptability and quality of Star fruit and Rattan jelly in terms of consistency, aroma, flavor and overall eating quality.

Three treatments were used in the research as follows:

T_0 - Commercial Guava Jelly

T_1 - Rattan Jelly, and

T_2 - Star fruit Jelly

Sensory Evaluation was done by a group of faculty using the 5 Point Organoleptic Scale while overall acceptability evaluation was done by using 9 Point Hedonic Scale. The Data gathered were subjected to analysis of variance (ANOVA).

The results of the study are as follows:

The (T_0) got the highest mean that is described as “very good” along consistency, aroma, flavor and overall eating quality of the product.

While both (T_1) and (T_2) got the second highest mean that is described as “good”. As to overall acceptability (T_0) and (T_1) got the highest mean that is described as “like very much” along consistency, aroma, flavor and overall eating quality of the product and (T_2) were evaluated as “like moderately”.

No significant differences exist on the different treatments in all the sensory evaluation based on the results.

Conclusion

Based from the findings of the study, it can be concluded that the star fruit and rattan jelly could be potential substitute for guava jelly because it has comparable quality and acceptability.

Recommendation

Based from the initial sensory evaluation of Star fruit and Rattan Jelly, the recommendation is for the future researches to include the shelf-life and the Cost and Return of Investment (ROI) which are very important input for commercialization purposes.



Thank
You!