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INNOVATION: SAMANEA SAMAN (JACQ.) MERR. (AKASYA) AS POLVORON

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Abstract

The study investigates the reactions through open ended questions. The acacia tree is a multi-purpose tree, the local and traditional knowledge related to the tree varies from different areas. The study aims to effectiveness of polvoron made of acacia tree. It includes a total of fifty seven (57) GAS and TVL students are the respondents participated in this study from grade 11 Gold and Silver. Purposive sampling method was used in selecting the respondents. The result is the researcher substantiated that polvoron made of akasya Acacia is a tree that offers many advantages. It has also benefits such as decoction of inner bark used for diarrhea, colds, and intestinal ailments, leaf infusion used for treating blood pressure. Therefore, it is highly recommended for us, local knowledge related to akasya should be originated, documented and transmitted among the coming generations to guarantee protection and conservation in Cabatuan, Isabela, Philippines. Thus, it is necessary to invent new things.

Keywords: Akasya, Sampling, Investigation, 2017-2018, umbraculiform tree, etc.

INTRODUCTION

SHS Department is composed of ninety eight (98) students and five (5) teachers the Inquiries, Investigation and Immersion subject come up with the project leader and its member during 2017-2018. They focus in Akasya because in other countries as cited by Bautista (2010) like Pakistan the infusion of leaves used as laxative.

Decoction of inner bark used for diarrhea, colds, and intestinal ailments. In Jamaica leaf infusion used for treating blood pressure. In Tropical Africa seeds are chewed for treating gum and throat inflammations. In Venezuela rain tree is a traditional remedy for colds, diarrhea, headache, intestinal ailments and stomach ache. Root decoction used in hot baths for stomach cancer. In the West Indies, the leaf infusion is used as a laxative and seeds chewed for sore throat. The alcoholic extract of leaves used for tuberculosis. In Columbia, the fruit decoction is used as a sedative.

“Polvo” is the Spanish word for dust or powder, and “polvoron” is a popular Philippine dessert in fully-packed powder form with these ingredients: all-purpose flour, powdered milk, sugar, butter, and vanilla extract. Akasya is a name shared by many species of Philippine plants, both scientific and common names: (1) Akasya concinna, akasya, a prickly shrub found in La Union, Benguet, and Ilocos Sur provinces of northern Luzon; (2) Albizzia lebbect, acaci, langil, mimosa; (3) Samanea saman, rain tree, akasya, for Akasya concinna; (4) Akasya farnesiana, aroma; (5) Akasya glauca, ipil-ipil; (6) Akasya niopo, kupang; (7) Akasya crassicarpa. Akasya is a large umbraculiform tree growing to a height of 20 to 25 meters. Bark is rough and furrowed. Branches are widespread. Leaves are evenly bipinnate and hairy underneath. Pinnae are 8 to 12 and 15 centimeters long or less. Leaflets are 12 to 16 in the upper pinnae, 6 to 10 in the lower ones, decreasing in size downward, hairy beneath, with the mid-nerve diagonal, and oblong-rhomboid, 1.5 to 4 centimeters long. Flowers are pink, borne in dense, peduncled, axillary, solitary, fascicled heads. Fruits are pods, straight, somewhat fleshy, indehiscent, 15 to 20 centimeters long, 2 centimeters wide, with a pulpy sweet mesocarp.

1. Objectives

The study aims to develop and determine the acceptability of INNOVATION: SAMANEA SAMAN (JACQ.) MERR. (AKASYA) AS POLVORON specifically to determine the:

a. proximate composition terms of:

- a.1 Total Solids
- a.1 Total sugar
- a.2 Specific Gravity
- a.3 Moisture content
- a.4 Crude protein
- a.5 Protein
- a.6. Percent of Benefits Pods.

b. Determine the economical impact of INNOVATION: SAMANEA SAMAN (JACQ.) MERR. (AKASYA) AS POLVORON from the following;

- a. Eco-Friendly
 - b. Budget-Friendly
 - c. Effectivity
2. Significance of the Study
1. An alternative solution to eat a polvoron made of akasya pods in a dessert.
 2. Ready for technology transfer and entrepreneurship to the adapted barangay as well as the SHS Department.

REVIEW OF RELATED LITERATURE

In the study of Bautista and Ramos (2010) it was attested also by the DOST they proved that acacia leaves and fruits has a essential role in they also try bioactivity analysis assays on hexane (HE) and methanol (ME) extract of leaves showed: (1) Both had moderate bacterial activity against *P. aeruginosa* (2) HE antifungal activity against *Fusarium solani*, ME against *Trichophyton longifusus* (3) Cytotoxicity in brine shrimp lethality assay (4) HE Insecticidal activity against *R. dominica* and *T. granarium* and A methanol extract from leaves showed a highly significant antibacterial activity in vitro for *Xanthomonas pathovars* and for human pathogenic bacteria.

Results on the research of Dorm (1991) of analysis showed that *Acacia senegal* is multi-purpose tree. The local and traditional knowledge related to the tree varies from area to another across the gum arabic belt. In this study 58 uses were recorded. The uses of each part of the tree or its product depend on how much knowledge the people had. It also depends on how and how often do people practice and use. *Acacia senegal* has medicinal, nutritional, folkloric, heritage and agricultural uses. The gum powder and gum runny are used in traditional ink preparation (mixture of gum and charcoal); it is widely and preferably used in teaching all over Holly Quran Traditional Schools (HQTSS) which is locally known "Kalwa". Gum arabic is also added to juice to get soft texture and as an emulsifier and a suspension agent in the local house-made juices. Dusty gum and impurity gum are usually mixed with animal waste, mud and water and left for a week to be fermented. Afterwards the product is used for painting house which is constructed by to prevent from heavy rain effects. Gum arabic is also used in traditional paints. School children mixed gum with sugar to make glue for sticking their smashed and shattered books, shattered papery currency and book notes. Nutritionally, Fresh wet gum is directly eaten by people as foodstuff; it does not have any side effect or stomach disorders. People reported that it is edible and easily digested. The tree bark, flowers and pods as used as fodder for goats. Medicinally, gum arabic used for stomach disorders and kidney pains. The bark is used for injury healing and cure. Leafs are also used as fodder. Agriculturally, *Acacia senegal* is practiced as a

basic component of Agro forestry in North Kordofan not only in ancient time but even today. There are many valuable poems and wisdoms said by rural people related to Acacia Senegal. Poems, wisdoms and says related to Acacia senegal play effective role in protection and conservation of the trees. It contributed to conservation of large areas of Hashab gardens.

Method

Respondents

A total of fifty seven (57) GAS and TVL students respondents participated in this study from grade 11 Gold and Silver. Purposive sampling method was used in selecting the respondents. The akasya is cooked through roost.

Design

The study may be described as following a correlation design where the students were surveyed about their taste in local polvoron and akasya polvoron with an aim of looking at how different variables affect each other.

Each item on the questionnaire can either be a negative or positive statement, where the respondents have the options to agree or disagree. A Likert-scale of 0-5 is used to indicate the degree by which the respondent agrees or disagrees with the given statement.

Procedure

Gathered data were encoded using statistical software (SPSS). Using the same software, data were statistically treated. Frequencies and percentages were computed for the survey questionnaire.

Responses in the questionnaires for the desirability of the akasya polvoron in terms of Hedonic Scale that range from 1-9 and using the Likert scale and the new range of scores will be as follows:

RANGE	RATE
1.00- 1.49	Dislike Extremely
1.50-2.49	Dislike Very Much
2.50-3.49	Dislike Moderately
3.50-4.49	Dislike Slightly
4.50-5.49	Neither Dislike nor Like
5.50-6.49	Like Slightly
6.50-7.49	Like Moderately
7.50-8.49	Like Very Much
8.50-9.00	Like Extremely

Results

This part of the paper details the findings of the study.

1.1.1 Process of Making Akasya Polvoron

Ingredients:

½ coffee size of akasya 1-1/2 cups all-purpose flour 1/2 cup sugar 1 cup powdered milk 1 cup unsalted butter, melted polvoron molds, to form cellophane, for wrapping

1. Boiled the seed of akasya (1 hour).
2. Removed and peeling the outside layer of the akasya, get the inner pods of the akasya.
3. The flour, powdered milk, sugar and starmargarine are prepared.
4. The inner bark of the akasya is chopped into small and tin pieces.
5. Through roasted cooking flour and sugar are mixed for (10 minutes)
6. Add the chopped pods.
7. Combine toasted flour, sugar, powdered milk and melted butter in a bowl; mix well. If the mixture is too dry (or loose), add more butter.
8. ½ Cup of powdered milk.
9. Add starmargarine (original) stirred very well.
10. Mixed all the ingredients until it become powdered polvoron.
11. Transfer the mixture into a plate; press the mold onto the mixture. If not using a mold, scoop tsp. of the mixture; press together into a compact form.
12. Wrap each cookie in cellophane (use variety of colors); twist the ends as you would in a candy.

Table 1.1.1 Treatment Used Percentage and Analysis through different control

a. Treatment proximate composition terms of:	Control A	Control B	Control C	Control D
a.1 Total solids	5	5	5	5
a.2 Total sugar	7 tbsp	5 tbsp	4 tbsp	2 tbsp
a.3 Specific Gravity	0.00	0.00	0.00	0.00
a.4 Moisture content	5.2001	6.2020	5. 5800	3.2500
a. Protein	22.211	20.056	17.231	12.533
a.7 Fiber and Carbohydrates	12.672	14.877	17.771	12.630

The treatment composition of polvoron made of akasya conclude the proximate analyses where percentage of the total solids of 5 and the control D for total sugar of 2 tbsp and the fiber. The researcher also proved that the treatment composition is well organized and good from control A-D.

Table1. Proximate analyses of akasya content in treatment process.

1.1.2 Eco-Friendly

Materials	Innovative Used	Distribution	Properties
Rain Tree is Accessible in Surroundings	Can make Polvoron	- Throughout the Philippines in waste places along roads and trails in fallow, rice paddies, etc.	- Slightly acidic tasting, cooling. - Antipyretic, antimicrobial, stomachic, astringent, antidermatoses, laxative, antimalarial, sedative.
Easy to Prepare	Candy	- Now pantropic in cultivation - Widely planted as a shade tree.	

The researcher proved that akasya polvoron is eco-friendly it is easy to prepare and rain tree is accessible from the surroundings hence the pods or fruits is annually bear.

1.1.2 Budget-Friendly

Total Expenses	Test 1/Per Pieces	Test 2/Per Pieces	Test 3/Per Pieces
68	20	29	35
53	20	32	37
49	18	32	38

The total expense that is the lowest recorded by the researcher is 49 pesos and it was produced with 38 pieces of polvoron.

1.1.3 Effectivity

Research Statement	MEAN	DESCRIPTIVE RATING
1. I would like to eat polvoron.	7.51	Like Very Much

2. I love exploring in ingestion of akasya polvoron because it mak	7.60	Like Very Much
3. I want to cooked polvoron make of akasya.	8.03	Like Very Much
4. I would like to have a taste-test of the polvoron make of akasya.	8.48	Like Very Much
5. I want to operative in polvoron because it makes my dessert complete.	8.23	Like Very Much
6. I want to consume more in force of polvoron of akasya because astringent and antidermatoses help my body.	8.39	Like Very Much
7. When I see a polvoron the actual taste is sound good.	8.85	Like Extremely
8. I love eating local polvon after lunch because it makes me healthy.	8.32	Like Very Much
9. I value the real essence of polvoron whether local or akasya made.	7.82	Like Very Much
10. I want to eat polvoron because it is a fruit and sweetish like.	8.10	Like Very Much

The researcher verified that grand mean of the Effectivity of the akasya polvoron is 7.34 and statistically interpreted as Like moderately.

SUMMARY, CONCLUSION AND RECOMMENDATION

The researcher substantiated that polvoron made of akasya Acacia is a tree that offers many advantages. It nourishes the soil by capturing basic nitrogen which restores fertility; it offers shelter and shade to farmlands; it produces the gum making this tree profitable for the economy. It also supplies fodder for stock and food for local collectivities. Acacia is a sustainable resource because we don't destroy trees as we would do for wood and makes candy and polvoron and the treatment composition of polvoron made of akasya conclude the proximate analyses where percentage of the total solids of 5 and the control D for total sugar of 2 tbsp and the fiber. The researcher also proved that the treatment composition is well organized and good from control A-D. The akasya polvoron proved also that it is budget-friendly, eco-friendly and effective as a dessert among cabatuanenses.

CONCLUSION

To sum up, *akasya as Polvoron* of SHS Department of Diamantina National High School is the valuable tree due to its wide range of benefits and uses. Through polvoron it can study that the pods extracts and roasted showed good antioxidant and cytotoxic potential of chloroform and hexane soluble fractions and antimicrobial activity of carbon

tetrachloride fraction. The researcher proved that akasya polvoron is eco-friendly, budget friendly and effective it is easy to prepare and rain tree is accessible from the surroundings hence the pods or fruits is annually bear.

RECOMMENDATION

1. It is recommended that, local knowledge related to *akasya* should be originated, documented and transmitted among the coming generations to guarantee protection and conservation in Cabatuan, Isabela, Philippines;

2. DOST and FNRI must allocate a funds for further reference and study;

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