



COMPARISON OF STANDARD COOKIES WITH *SYZYGium CUMINI* (JAMBU) LEAVES INCORPORATED COOKIES

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Abstract

The Jamun fruit tree is a member of the Syzygium genus in the Myrtaceae family. Jambu leaves are rich in vitamins and minerals including manganese, zinc, iron, calcium, salt, and potassium, but have less calories than fruit. A medium-sized Jambu leaf has around 3 to 4 calories. B-vitamin, potassium, and magnesium. Additionally abundant are fiber, carotenoids, and photochemical antioxidants. The ethanol extract of jambu leaves demonstrated antibacterial efficacy against gram-positive and gram-negative pathogens, as well as hypoglycemic properties. One of the most nourishing and healthful cereals is ragi. Ragi's high protein content makes it a crucial element in avoiding malnutrition. Due to its high calcium and vitamin content, ragi is essential for strengthening bones. The high dietary fiber and polyphenol content of ragi has been demonstrated to lower the risk of developing diabetes mellitus when consumed regularly. It lowers the risk of stroke and other heart problems by lowering plaque development and avoiding blood vessel obstruction, which in turn lowers cholesterol levels. It aids in reducing hypertension and high blood pressure. Ragi aids in the battle against oxidative stress and the reduction of free radicals that cause harm. Cookies are one of those foods that provide nutrients to keep you active and healthy. Depending on how they are made and the components they include, cookies have varying nutritional values and flavors. The study intends to employ underused Jamun leaves in food items to get their good effects. It was mixed in a range of cookies in varying percentages, and the most well-liked Jamun leaves incorporated in ragi cookies were assessed for their nutritious content.

Keywords: Antibacterial, Hypoglycemic, Dietary fibers and polyphenols,cookies.

1. INTRODUCTION

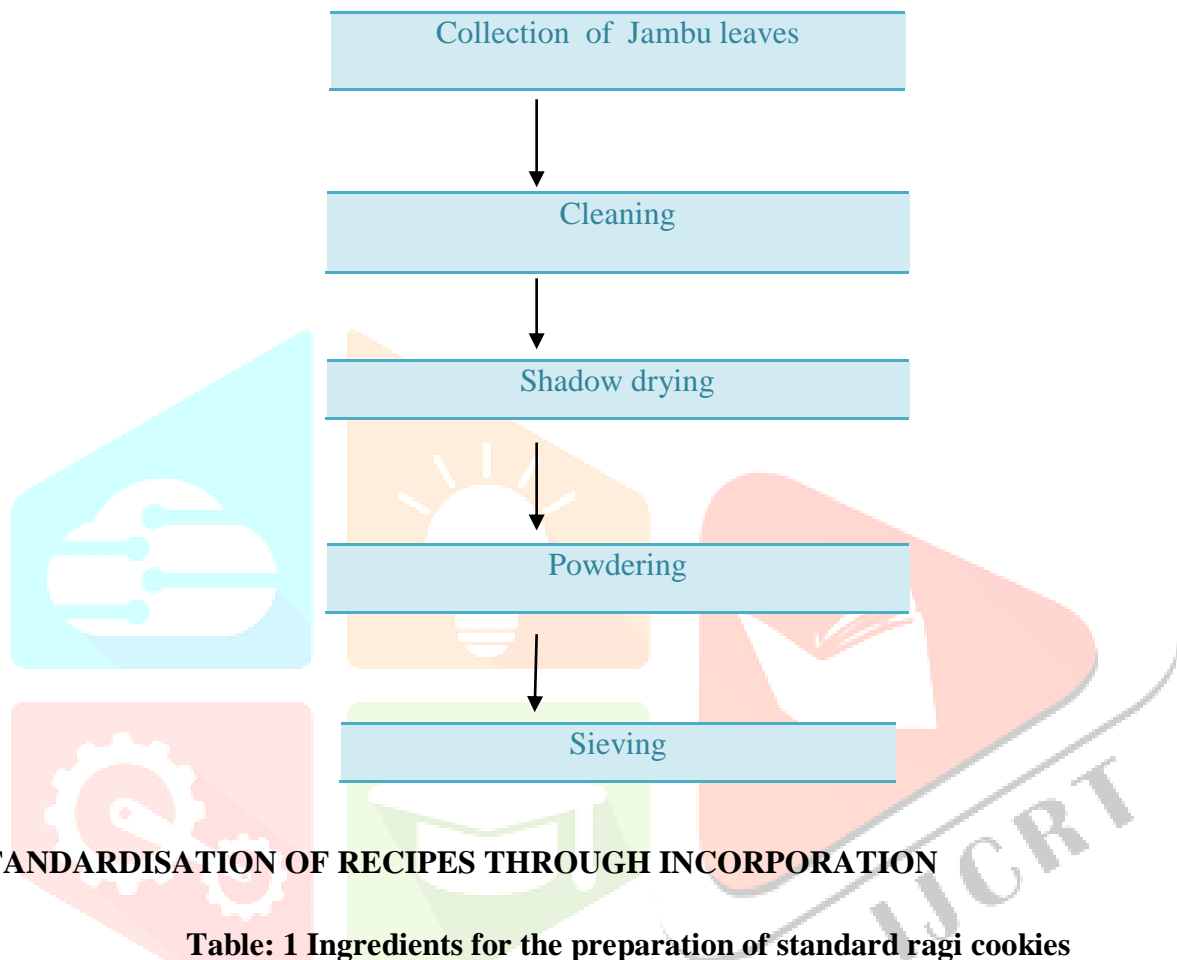
Jambu, often referred to as Jamun or Jambu, is a seasonal fruit that is common throughout Asia. Jambu is a tasty, vitamin- and mineral-rich tropical herb. Jambu fruit is vital for a healthy body and mind since its seeds, bark, and leaves are packed with flavonoids and antioxidants. Jambu is a wonderful fruit with a distinct flavor and color. The jambu tree may be found in backyards, along roadsides, and in forests. As a result of the jambu tree's bioactive and phytochemical content, which is present in its leaves, bark, and seeds, liver disease and cancer risk are reduced. Jambu leaves also have less calories. Ancient people utilized the leaves to treat a variety of illnesses. Cold and cough symptoms can be treated with the juice of jambu fruit leaves. Diabetes can be effectively treated with jambu leaf powder. Leaf extracts decrease blood sugar and glycosuria levels. favorable alterations in sugar levels caused by dried leaves powder. Jambu leaves are efficient at lowering blood sugar levels because they are high in alkaloids, which have hypoglycemic qualities. Jambu leaf possesses helminth-removal abilities. It supports the management of urinary disorders. When water and jambu leaf powder are combined, tapeworm infection can be cured. Numerous polyphenols and anthocyanins found in the leaves help combat cancer cells. Consuming jambu leaf juice before chemotherapy or radiation treatments is advantageous. Jambu contains flavonoids, ellagic acid, and gallic acid to aid in its ability to inhibit the development of cancer in certain organs. Jambu juice is great for bowel movements that occur naturally. Jambu leaves have therapeutic qualities. In certain Asian traditions, the tree's leaves are burned to create ash, which is then used as a natural astringent in mouthwash to combat foul breath and gingivitis (bleeding gums). Strong teeth are aided by this.

In Asia, jambu leaves are used as traditional medicine. For different therapies, it is used with Ayurveda and Unani. Jambu is well known for enhancing blood quality and preventing liver damage. The finest blood purifier is jambu, and the natural acids found in the leaves help to secrete digestive enzymes. Jambu regularly consumed promotes good liver function. Hemorrhoids that are bleeding and ulcerative colitis can both be effectively treated with jambu leaf juice or powder. The decoction of jambu leaves is a wonderful natural medicine for easing stress and weariness since it includes fragrant herbs. Whooping cough, cuts, bruises, and open wounds are all treated with wine and vinegar prepared from Jambu leaves. As a treatment for gastrointestinal issues as well as a fantastic at-home treatment for bloating, persistent cough, and asthma, jambu fruit seed, bark, and leaves powder are employed. The phytochemicals pinocarvone, terpenes, material, carvone, murolol, maternal, geranyl acetone canine, and pinocarvone are all present in the leaf essential oil. The 3-0-al-L-rhamnopyraside of mearnside has been isolated and identified from two acylated flavonol glycosides and fifteen recognized polyphenols. New tastes come from the leaves. These studies compare cookies made with *Syzygium cumini* (jambu) leaves versus conventional cookies. The method used for the study entitled **“COMPARISION OF STANDARD COOKIES WITH *SYZYGIUM CUMINI* (JAMBU) LEAVES POWDER INCORPORATED COOKIES”** are discussed under the following headings.

2. SELECTION OF SAMPLE

Pamani village is where jambu fruit leaves are harvested. From the neighborhood market in Thiruthuraipoondi, we bought maida flour, ragi flour, sugar, baking powder, egg, butter, cardamom powder, cinnamon powder, vanilla essence, salt, and chocolate powder.

3. DEVELOPMENT OF JAMBU FRUIT LEAVES POWDER



4. STANDARDISATION OF RECIPES THROUGH INCORPORATION

Table: 1 Ingredients for the preparation of standard ragi cookies

S.NO	INGREDIENTS	QUANTITY USED
1	Ragi flour	100 gram
2	Sugar	50 gram
3	Egg	1 Nos
4	Butter	30 gram
5	Baking powder	5 gram
6	Cardamom powder	5 gram
7	Cinnamon powder	5 gram
8	Vanilla essence	2 drop

4.1 Procedure

Combine ragi flour and baking powder, In a bowl, thoroughly combine the egg and powdered sugar. Once it has reached the cream stage, add the salt, vanilla essence, cardamom powder, and cinnamon powder and combine thoroughly. Make a soft dough by gradually adding sifted flour. Butter should be used to grease the pan. Create balls of the same size and space them evenly on the tray, allowing approximately 2 inches between each one. Bake them for 15 minutes in an oven preheated to 60 to 170 degrees Celsius. After 15 minutes, transfer them to a new tray, let them cool to room temperature, and then serve.

Table: 2 Ingredients for the preparation of 1.5 to 6 percent jambu leaves powder incorporated ragi cookies

S.NO	INGREDIENTS	LEVEL OF INCORPORATION			
		1.5%	3%	4.5%	6%
1	Ragi flour	98.5	97g	95.5g	94g
2	Sugar	50 g	50 g	50g	50g
5	Baking powder	5g	5g	5g	5g
6	Butter	20 g	20g	20 g	20 g
7	Egg	1 Nos	1Nos	1Nos	1Nos
8	Cardamom powder	5 g	5 g	5 g	5 g
9	Cinnamon powder	5g	5g	5g	5g

4.2 Procedure

Mix thoroughly three to four times after adding baking powder and ragi flour. Egg and powdered sugar should be combined in a bowl. up until a cream is formed. Add the vanilla essence, salt, and cardamom powders now and combine well. For soft dough, a little shift flour should be added. Add jambu leaf powder in the following amounts: 1.5, 3, 4.5, and 6 percent. Butter should be used to grease the pan. Create balls of the same size and space them evenly on the tray, allowing approximately 2 inches between each one. Bake them for 15 minutes in an oven preheated to 160 to 170 degrees Celsius. After 15 minutes, transfer them to a new tray, let them cool to room temperature, and then serve.

Table: 3 Ingredients for the preparation of standard butter cookies

S.NO	INGREDIENTS	QUANTITY
1	Maida	100g
2	Butter	100 g
3	Sugar	50g
4	Egg	1 Nos
5	Vanilla essence	2 drops

4.3 Procedure

Mix sugar and maida flour until well-combined. Currently, beat the egg well into the creamed butter. Mix the dry ingredients gradually to create a soft dough similar to that used to make chapatti. Create little balls and set them on cookie sheets without greasing. 375 degrees F (190 degrees c) preheated oven for 8 to 10 minutes, or until brown. Give the cookie two minutes to stand on the baking pan. At room temperature, let the cookies cool before serving.

Table: 4 Ingredients for the preparation of 1.5 to 6 percent jambu leaves powder incorporated butter cookies

S.NO	INGREDIENTS	LEVEL OF INCORPORATION			
		1.5%	3%	4.5%	6%
1	Maida	98.5gm	97gm	95.5gm	94gm
2	Butter	100 g	100gm	150gm	150gm
3	Sugar	50g	50g	50g	50g
4	Egg	1Nos	1Nos	1Nos	1Nos

4.4 Procedure

Mix together Maida flour, butter, and sugar until well-combined. Beat the egg in thoroughly with the creamed butter. Add powdered jambu leaves at levels of 1.5, 3, 4.5, and 6. Mix the dry ingredients in gradually to create a soft dough similar to that used to make chapattis. Create little dough balls, then put them on ungreased cookie sheets. Bake at 375 degrees F (190 degrees c) for 8 to 10 minutes, or until golden brown. Give the cookie two minutes to stand on the baking pan. At room temperature, let the cookies cool before serving.

Table: 5 Ingredients for the preparation of standard chocolate cookies

S.NO	INGREDIENTS	QUANTITY
1	Maida flour	100g
2	Butter	100 g
3	Chocolate powder	50g
4	Sugar	50 g

4.5 Procedure

Egg in bowl, whisked. When butter and sugar are added, whip or combine the ingredients until a cream forms. Add the egg, and thoroughly combine. After the egg and Maida flour have been thoroughly combined, add the chocolate powder and combine well. Once the mixture is smooth, form it into little balls. Sprinkle powdered sugar on the balls, then arrange them on a parchment-lined baking sheet. With a fork,

mash the balls down. 20 minutes of baking should be allowed after setting the oven to 3650F (1800 C). After cooling off, eat.

Table: 6 Ingredients for the preparation of 1.5 to 6 percent jambu leaves powder incorporated chocolate cookies

S.NO	INGREDIENTS	LEVEL OF INCORPORATION			
		1.5%	3%	4.5%	6%
1	Maida	98.5%	97%	95.5%	94%
2	Butter	100 g	100%	100%	100%
3	Chocolate powder	50g	50g	50g	50g
4	Sugar	50 g	50g	50g	50g

4.6 Procedure

In a bowl, whisk the egg. Beat or combine the butter and sugar after adding them until a cream forms. Once combined, add the egg and the cocoa powder. Add 1.5, 3, 4.5, and 6% of jambu leaves to the powder and thoroughly combine. When the egg is thoroughly combined, add the maida flour, chocolate powder, and form a smooth dough. Roll the dough into small balls. Sprinkle the balls with powdered sugar, then arrange them on a cookie sheet that has been lined with parchment paper. Utilizing a fork, press the balls down. Bake for around 20 minutes after setting the oven to 3650F (1800 C). then proceed to serve. 10 chocolate cookies will be made.

5. ASSESSING THE CONSUMER ACCEPTABILITY OF THE JAMBU LEAVES POWDER INCORPORATED COOKIES

A total of 25 consumers were chosen at random to evaluate the look, color, taste, texture, and flavor of dishes that used jambu leaves powder. Each person received a scorecard with a hedonic rating of five points.

Excellent – 5

Very good – 4

Good – 3

Fair – 2

Poor -1

6. ESTIMATION OF NUTRIENTS CONTENT OF THE MOST ACCEPTABLE JAMBU FRUIT LEAVES POWDER INCORPORATED COOKIES

The standard was used to analyze the nutritional value of the most acceptable jambu fruit leaves powder that was added to the cookies.

Carbohydrate	An throne method
Protein	Lowry's method
Fat	Sordhum associated of official chemisty
Calcium	Ethylene dicrmine tetra acetate
Iron	Ethylene dicrmine tetra acetate
Vitamin –A	Spectro photometer method

7.SHELF LIFE OF STANDARD AND JAMBU FRUIT LEAVES POWDER INCORPORATED COOKIES

The full generated mixture was packaged in polythene bags and kept in an airtight container at room temperature in order to determine its shelf life. The recipe's qualitative characteristics, including appearance, color, flavor, texture, and taste, were examined daily. Standard ragi, butter, chocolate, and cookies with 1.5 to 6% Jambu leaves included have a shelf life.

8. RESULT AND DISCUSSION

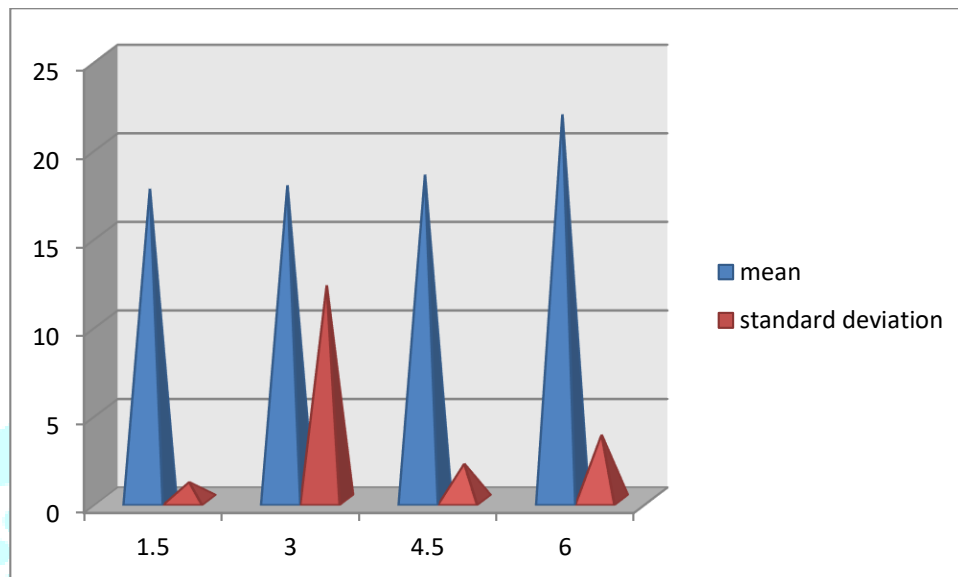
The findings of the current study, "Comparison of Regular Cookies with Cookies Incorporated with Jambu Fruit Leaves," Three types of cookies, including ragi, butter, and chocolate cookies, all contained jambu leaf powder. In comparison to other cookies, Ragi cookies performed well. Ragi cookies with Jambu leaves in them had a higher nutritional value than Ragi cookies without Jambu leaves.

Table: 7 Steps involved in the preparation of jambu leaves powder incorporated cookie varieties

S.No	Name of the Recipes	Method Preparation of	Time in Minutes
1	Jambu leaves Powder incorporated ragi cookies	Mixing Baking	30 minutes
2	Jambu leaves Powder incorporated butter cookies	Mixing Baking	30 minutes
3	Jambu leaves Powder incorporated chocolate cookies	Mixing Baking	30 minutes

Table: 8 Overall consumer acceptability of jambu fruit leaves powder incorporated cookies

S.No	Recipes	Overall Acceptability			
		1.5percent	3percent	4.5percent	6percent
1	Ragi Cookies	17.6 ±1.02	17.8±12.15	18.4±2.06	21.8±3.7
2	Butter Cookies	16.6±0.6940	14.52±12.15	16.7±0.9410	20.6±1.105
3.	Chocolate Cookies	15.19±0.354	12.11±0.434	11.32±0.380	19.12±0.5960

**Figure: 1 Nutrient content of the standard and most acceptable jambu leaves powder incorporated ragi cookies****Table: 8 Nutrient content of the standard ragi cookies**

S.No	Nutrients	Standard Ragi cookies	Jambu leaves incorporated Ragi cookies			
			1.5%	3%	4.5%	6%
1	Carbohydrate (Gm)	15.91	56	60	72	75
2	Protein (Gm)	1.8	1.5	2	3	3.87
3	Fat(Gm)	4.2	45.2	49.6	51.3	63.5
4	Calcium (mg)	350	10	15.6	20	23.5
5	Iron (mg)	3.9	11	12	17	18
6	Vitamin – A (mg)	42	0.23	0.32	0.39	0.45

Table: 9 Shelf life of standard cookies and jambu leaves powder incorporated ragi cookies

S.no	Criteria	No of Days in room Temperature
1	Standard Ragi cookies	20 Days
2	Incorporated Ragi cookies	35 Days

9. CONCLUSION

Ragi cookies included 1.5% of jambu leaf powder in them. 56 g of carbohydrates, 1.5 g of protein, 45.2 g of fat, 10.0 milligrams of calcium, 0.23 mg of vitamin A, and 2.2 mg of vitamin C make up this serving. Ragi biscuits with 3% of jambu leaf powder added. The nutritional breakdown is as follows: 60 g of carbohydrates, 2 g of protein, 49.6 g of fat, 15.6 milligrams of calcium, 0.32 mg of vitamin A, and 2.5 mg of vitamin C.

Jambu leaf powder was 4.5% included into the ragi biscuits. 72 g of carbohydrates, 3 g of protein, 51.3 g of fat, 20.0 milligrams of calcium, 0.39 mg of vitamin A, and 2.9 mg of vitamin C make up this serving. Ragi biscuits with 6% of jambu leaf powder added. 75 g of carbohydrates, 3.87 g of protein, 63.5 g of fat, 23.5 mg of calcium, 0.45 mg of vitamin A, and 5.8 mg of vitamin C make up this serving. The current study shows that cookies with Jambu fruit leaves powder added are liked by people of all ages. The amount of jambu leaf powder in the ragi cookies was 4.5%. This meal contains 20.0 milligrams of calcium, 72 grams of carbs, 3 grams of protein, 51.3 grams of fat, 0.39 milligrams of vitamin A, and 2.9 milligrams of vitamin C. biscuits made with ragi and 6% jambu leaf powder. This meal contains 23.5 mg of calcium, 0.45 mg of vitamin A, 6.35 g of fat, 75 g of carbs, 3.87 g of protein, and 5.8 mg of vitamin C. The results of the current study demonstrate that individuals of all ages enjoy cookies that have powdered Jambu fruit leaves added.

Jambu fruit leaves powder is said to have an antibacterial and anti-inflammatory impact on our digestive system since it includes a high grade polyphenolic component and flavonoid. The powder from jambu fruit leaves is used to manage diabetic problems. Powder made from jambu fruit leaves has antibacterial qualities and aids in the eradication of intestinal parasites. Heart disease, diabetes mellitus, and obesity can all be prevented by the powdered leaves of the jambu fruit. Jambu fruit leaf powder is used to cure a number of illnesses, including arthritis, cancer, atherosclerosis, and constipation. in particular, manage diarrhea.

10. FUTURE RECOMMENDATION:

To increase the nutritional status, a novel value-added product made from powdered jambu fruit leaves is created. The powdered leaves of the jambu fruit can be utilized in a variety of culinary preparations. The nutritious value of powdered Jambu fruit leaves may be promoted through an awareness campaign among the local population.

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