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DEVELOPMENT OF PHYTOCHEMICAL RICH CHOCHOLATE BUTTER COOKIES, RICE FLOUR RINGS INCORPORATED WITH GUAVA LEAVES POWDER

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Abstract

The leaves of *psidium guajava (Myrtaceae)* are known to have many medicinal properties. Phenolic compounds in guava leaves credited with regulating blood-glucose level. In tropical and sub-tropical countries these leaves are used to treat many disorders such as diarrhea, cough, gastrointestinal disorders, vomiting, wounds, dysentery, ulcers and toothache as an antiseptic. Guava leaves plant is good for healing and treating wounds and other skin infection. The leaves contains vitamin A, B and C and are exceptionally rich in Tannin superior to that present in the medicine. So the present study was standardized products was carried out to develop i.e. *Chochalate butter cookies*, *Rice flour rings* with incorporation of Guava leaves powder. Apart from control three treatments named A, B, C were given all different dosages. The Organoleptic evaluation of products was done by using score card method (9-Point Hedonic Scale).In result revealed that Guava leaves powder based products, *Chocholate butter cookies* A treatment was best and *Rice flour rings* C treatment was best in all treatments in case of all sensory attributes.

Keywords: Psidium guajava, Gastrointestinal, Wounds, Antiseptic, Chocholate butter cookies, Rice flour rings

I. Introduction

Psidium guajava Linn. (Guava) family *Myrtaceae* is an important dietary plant used traditionally for medicinal purpose is an important dietary plant used traditionally for medicinal purpose around the world. Since each part of the guava tree possess the economic value. Guava leaves powder (Psidium guajava L) found in India Haryana, Punjab Japan, East Asia, Mexico, Central America, Caribbean, Australia etc. guava leaves are incredibly easy to incorporate into your diet. It imparts several beneficial properties to the food

products such as it gives a dried and crushed leaves will have a faint aroma similar to that of the guava fruit. The medicinal use have demonstrated the ability of this plant to exhibit antioxidant, hepatoprotective, antiallergic, antimicrobial, anticancer, cardio protective, antidiabetic, anti cough, antidote properties. Leaves of psidium guajava L. (guava) have been widely used in popular way for prevention and treatment of various disease they have also served as anti-inflammatory and haemostatic agent .Psidium guajava leaves have a diverse phytochemical composition including flavonoids, Phenolic, meroterpenoids and triterpenes responsible for the biological activities of the medicinal parts. In particular, flavonoids glycosides show beneficial effects on the type II diabetes mellitus.

II. Materials and Methods

The Present study was carried out in research laboratory of Food and Nutrition Department, BPS Institute of higher learning.

The research procedures followed:

a) The fresh guava leaves were collected from the guava plants, gardened in the lush green campus of the B.P.S. University.
b) The ingredients which were used in the products formulation were also obtained from the local market of Gohana.
c) Guava leaves were sun dried, so that they can be made in powder form.

Guava leaves powder having good chemicals properties and nutritive values were selected for preparation of value added products like *Chocholate butter cookies* and *Rice flour rings*. The products were standardized and served as Control. Three value addition treatment i.e. incorporation with guava leaves powder at different percentages was referred as A, B and C treatments respectively for development of Chocholate butter cookies and *Rice flour rings*. Wheat flour and Rice flour was incorporated with guava leaves powder and utilized for preparing products. Treatment A was incorporated with guava leaves powder at 3 % level with 97 % main ingredients. Treatment B was incorporated with guava leaves powder at 5 % level with 95 % main ingredients. Treatment C was incorporated of Guava leaves powder at 7 % level with 93 % main ingredients.

Flowchart Showing the Drying Process of Guava leaves Powder

Collection of fresh guava leaves

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Sorting & Grading

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Washing (To remove micro-organism and Dirt)

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Cutting

↓

Air drying at room temperature for 3-5 days

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Packaging

↓

Storage for further applications

Organoleptic evaluation

The developed products were evaluated ogranoleptically using 9 Point Hedonic Scale by a panel of 6 judges of the Department of Food and Nutrition, BPS institute of higher learning, on the basis of Color and Appearance, Texture, Taste, Flavour and Overall acceptability.

III. Result and Discussion

Treatment	Colour	Appearance	Flavour	Texture	Taste	Overall Acceptability
Control	8.3±0.67	7.9±0.53	7.7±0.15	7.5±0.12	8.5±0.26	8.6±0.58
A	8.1±0.81	7.9±0.99	7.5±0.18	8.2±0.63	8.8±0.57	8.9±0.78
B	8.0±0.81	7.4±0.10	7.6±0.96	7.4±0.44	7.5±0.22	7..8±0.31
C	7.0±0.41	7.1±0.17	7.3±0.67	7.3±0.67	7.3±0.42	7.2±0.73

Table 1: Organoleptic acceptability of ***Chocholate butter cookies*** incorporated with guava leaves powder.

Control: 100% Wheat Flour

Treatment (A): 97% Wheat flour + 3% Guava leaves powder

Treatment (B): 95% Wheat flour + 5% Guava leaves powder

Treatment (C): 93% Wheat flour + 7% Guava leaves powder

So, it can be concluded from the result that in term of overall acceptability of Chocholate butter cookies the Control without incorporation of guava leaves powder at treatment A at 3 % with incorporated of guava leaves powder were desirable and after that incorporated of Guava leaves powder were liked slightly desirable by all the panel members.

CONTROL

A

B

C

Treatment	Colour	Appearance	Flavour	Texture	Taste	Overall Acceptability
Control	8.1±0.37	7.8±0.69	7.1±0.11	6.8±0.45	7.0±0.22	7.7±0.52
A	8.5±0.13	7.5±0.78	7.5±0.55	7.5±0.97	7.8±0.69	7.6±0.51
B	7.4±0.44	7.5±0.78	8.0±0.57	7.3±0.57	8.1±0.19	7.9±0.51
C	8.7±0.95	8.7±0.75	8.3±0.78	7.2±0.61	8.7±0.97	8.6±0.43

Table 1: Organoleptic acceptability of ***Rice flour rings*** incorporated with Guava leaves powder.

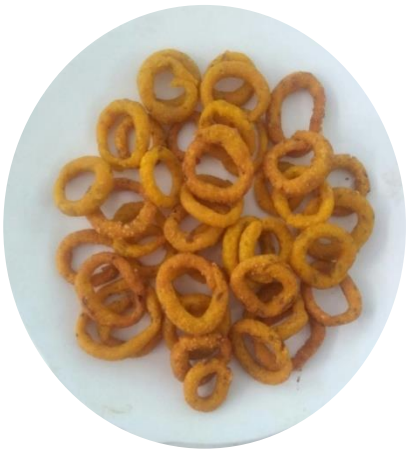
Control: 100% Rice Flour

Treatment A: 97% Rice flour + 3% Guava leaves powder

Treatment B: 95% Rice flour + 5% Guava leaves powder

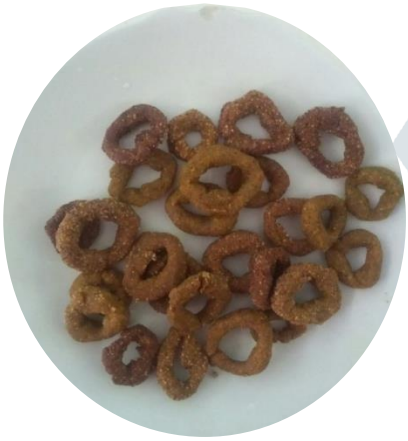
Treatment C: 93% Rice flour + 7% Guava leaves powder

It is quite obvious from the results that *Rice flour rings was* most acceptable at 7 % level (C). It was *Rice flour rings* ahead from all other treatments including control.



CONTROL

A



B

C

IV. Conclusion:

Main aim of this study is to bring the use of such an important and neglected herb, in the daily food habits of general people. Nutritious products (*Chocholate butter cookies and Rice flour rings)* were successfully prepared with incorporation guava leaves powder in wheat flour and Rice flour. Sensory evaluation of the prepared products indicated that Control was liked more than others (A, B, C) but all three treatments were never tasteless in color, appearance, flavour, texture, taste, overall acceptability incorporation with guava leaves powder at 3 % level with 97% main ingredients (Wheat flour) was liked desirable. A incorporated of guava leaves powder at 7 % level with 93 % main ingredients (Rice flour) was liked desirable. *Chocholate butter cookies* and *Rice flour rings* were acceptable the other treatments were also acceptable. Formulation of simple home based food products, by incorporating the leaves Powder of plant Psidium guajava at 3%, 5%, and 7%. These are the rich sources of chemicals Tannin, flavonoids .Guava leaves powder can help in maintaining body's energy level. These are rich sources of fiber but poor sources of protein. Guava leaves may improve certain blood pressure, which should lower the risk of heart disease and type II diabetes. These prevent itchy skin, cure acne and control the hair loss.

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