



# DEVELOPMENT OF PHYTOCHEMICAL RICH NAMAKPARE & BESAN BHUJIA INCORPORATED WITH GUAVA LEAVES POWDER

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## Abstract

*Psidium guajava* Linn is a small medicinal tree that is native to South America. It is popularly known as guava (*family myrtaceae*) and has been used traditionally as a medicinal plant throughout the world for a number of ailments. It is widely distributed throughout India. It is commonly used not as only as food but also as folk medicine as an **antioxidant, anti-spasmodic, anti-allergy, anti-inflammatory and anti-diabetic** using extracts from the fruit, leaf, bark, or root. Guava leaves powder of this plant have been used as folk medicine and are reported to contain several compounds, such as various **terpenoids, flavonoids and tannins**. Tannins (a chemical), help Cures Diarrhea, Decreases Cholesterol level, Diabetes Type II, Fights allergy, Prevents Hair Loss, Relieves Itchy Skin. This present study is attempts to made food products fortified with Guava leaves powder like Namakpare and Besan Bhujia which are beneficial for health besides this they also introduce our food products. The products were standardized and served as control. Three treatments were given as A, B and C at level of 3, 5 and 7 % for development of Namakpare and Besan Bhujia .All the developed products were evaluated organoleptically using 9 Point Hedonic Scale (B. Srilakshmi, 2007) by a panel of 6 judges of the Development of Food and Nutrition, BPS Institute of higher learning, on the basis of color, appearance, texture, taste, flavour and overall acceptability. The result of sensory analysis was found that the food products like *Namakpare* and *Besan Bhujia* was acceptable in all treatments.

**Keywords:** Psidium guajava Linn, family myrtaceae, Tannins, Namakpare and Besan Bhujia.

## I. Introduction

Guava leaves powder, also known as *Psidium guajava* Linn may be add to herbal soup, tea and medicines and cosmetics products etc. The powder is considered to be of nutritional significance in view of their tannins, flavonoids, phenol compounds, cartenoids composition as well as the fiber and vitamin C. It is commonly used not as only as food but also as folk medicine as an antioxidant, anti-spasmodic, anti-allergy, anti-inflammatory and anti-diabetic using extracts from the fruit, leaf, bark, or roots. Leaves powder of this plant have been used as folk medicine and are reported to contain several compounds, such as various terpenoids, flavonoids and tannins. Guava leaves plant is good for healing and treating wounds and other skin infection. Psidium guajava leaf is an important part of guava tree it is useful in curing many health problems. Phenolic compounds in guava leaves credited with regulating blood-glucose level. Guava leaves tea and some complementary guava products are available in several shops in India as well as online availability as theses for example Guava leaves Tea, Guava leaves Herbal Soup etc. The aqueous extract of guava leaves has been used in treatments of various type of gastrointestinal (GIT) disturbances such as, inhibition of the peristaltic reflex and gastroenteritis. Moreover the whole plant is used as skin tonic and is employed in the treatment of female related disease like dysmenorrhea, miscarriages, uterine bleeding and premature labor. Guava leaves powder is excellent source vitamin A, vitamin C. Guava leaves powder can help in maintaining body's energy levels. 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 hair loss too.

## II. Materials and Methods

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

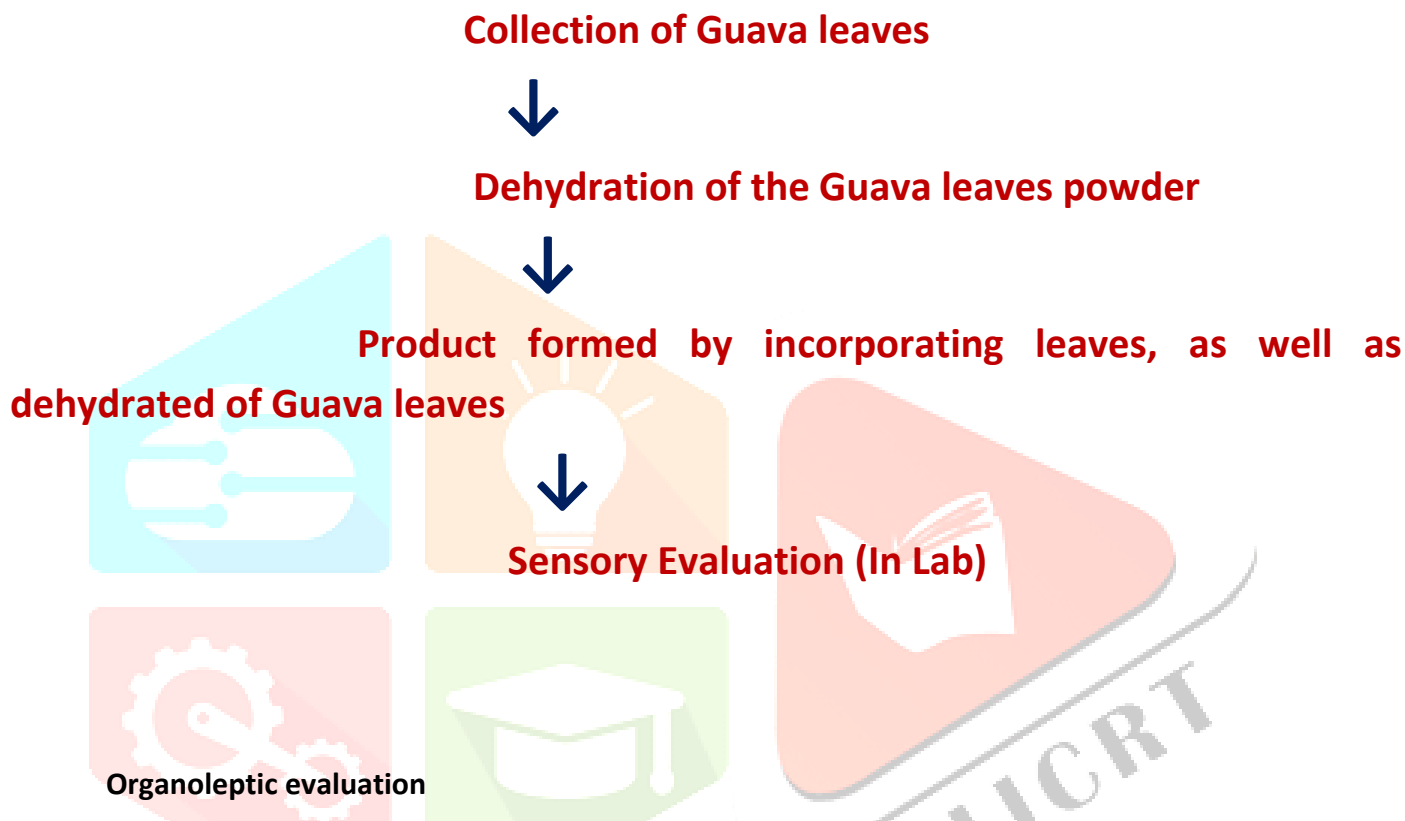
### The research procedures followed:

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

Guava leaves powder having good chemicals properties and nutritive value were selected for preparation of value added products like *Namakpare* and *Besan Bhujia*. The recipes 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 *Namakpare* and *Besan Bhujia*. Refined flour and Gram 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 with Guava leaves powder at 7 % level with 93 % main ingredients.

The steps underlined below, shows the food product formulations and evaluation.



The developed products were evaluated organoleptically 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
<b>Control</b>	7.9±0.31	7.9±0.31	8.1±0.31	7.9±0.31	7.9±51	8.1±0.31
<b>A</b>	8.1±0.56	8.4±0.51	8.3±0.48	8.3±0.41	8.3±0.67	8.4±0.69
<b>B</b>	8.1±0.73	8.0±0.81	7.9±0.87	7.8±0.51	7.8±0.55	7.9±0.66
<b>C</b>	7.9±0.87	7.8±0.51	7.8±0.78	7.7±0.51	7.7±0.82	7.8±0.84

**Table 1:** Organoleptic acceptability of *Namakpare* incorporated with guava leaves powder.

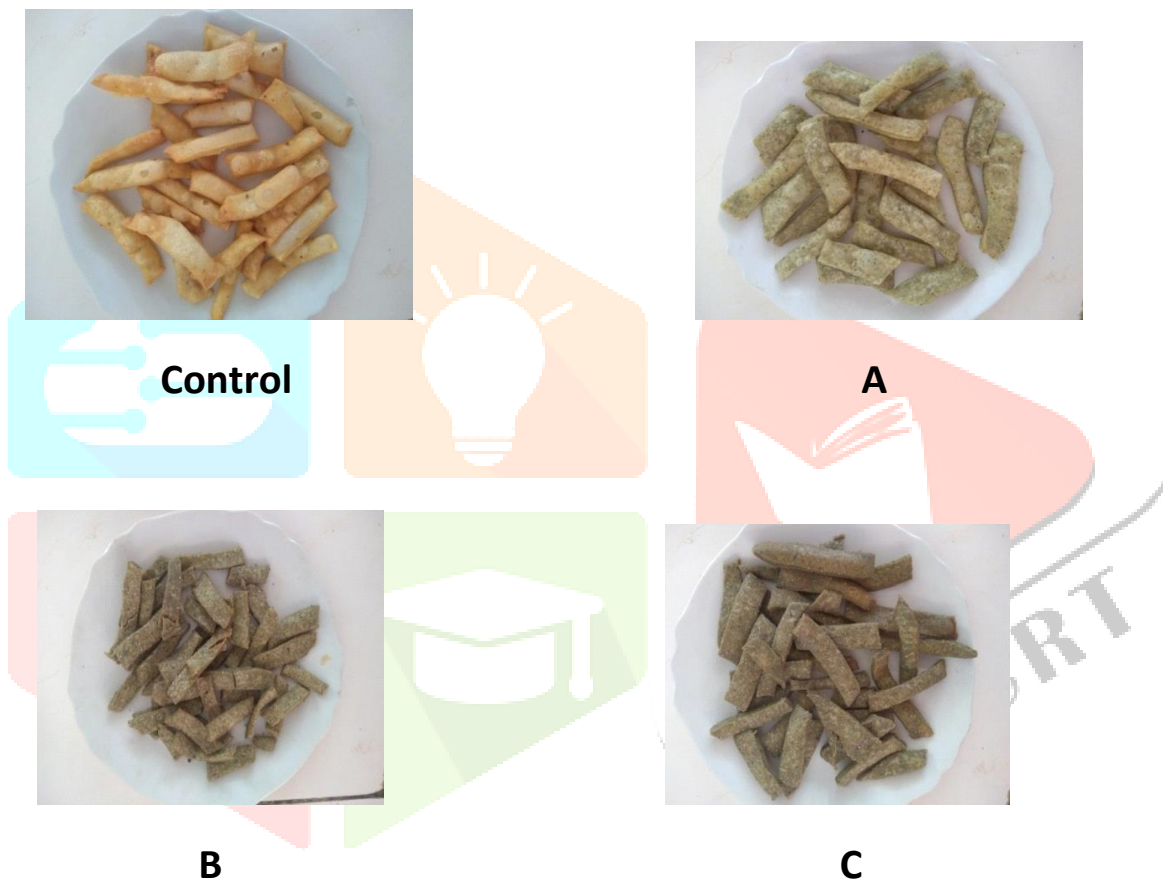
Control: 100% Refined flour

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

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

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

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



Treatment	Colour	Appearance	Flavour	Texture	Taste	Overall Acceptability
Control	8.2±0.67	8.1±0.60	8.2±0.73	8.1±0.52	8.2±0.22	8.1±0.71
A	8.7±0.50	8.7±0.63	8.1±0.65	8.7±0.62	8.8±0.55	8.7±0.84
B	8.8±0.72	8.9±0.68	8.8±0.78	8.8±0.72	8.9±0.75	8.8±0.93
C	8.3±0.18	7.5±0.64	8.3±0.12	8.7±0.55	8.7±0.78	8.5±0.57

**Table 2:** Organoleptic acceptability of *Besan Bhujia* incorporated with guava leaves powder.

Control: 100% Gram flour.

Treatment (A): 97% Gram flour + 3 % guava leaves powder

Treatment (B) : 95% Gram flour+ 5% guava leaves powder

Treatment(C): 93% Gram flour + 7% guava leaves powder

It is quite obvious from the results that Besan Bhujia was most acceptable at 5 % level (B). It was Besan Bhujia ahead from all other treatments including control.



**CONTROL**



**A**



**B**



**C**

#### **IV. Conclusion**

Nutritious recipes (*Namakpare and Besan Bhujia*) were successfully prepared incorporated with guava leaves powder in refined flour and gram 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 (Refined flour) was liked desirable. A incorporated of guava leaves powder at 5 % level with 95 % main ingredients (Gram flour) was liked desirable. *Namakpare* and *Besan Bhujia* were also acceptable. Treat the disorders like Cures diarrhea or DM II, for which *Psidium guajava* has been proved worthy. *Psidium guajava* is known for its antioxidant, analgesic & anti-inflammatory, antispasmodic, hepatoprotective, anti-diabetic, anti-cancer activity an antimicrobial properties. Cosmetics are applied on skin to enhance the personality, beauty, color, complexity, tone, texture etc. Maintaining a healthy skin is important for a healthy body used guava leaves. Guava leaves were used to treat diarrhea

and stomach. The leaves were used in USA as an antibiotic in the form of poultice or decoction for wounds, ulcers, and toothache.

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