



e-ISSN: 2319-8753 | p-ISSN: 2347-6710

IJRSET

International Journal of Innovative Research in
SCIENCE | ENGINEERING | TECHNOLOGY

INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

Volume 12, Issue 13, April 2023

ISSN INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA

9940 572 462

6381 907 438

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Formulation and Evaluation of Medicinal Property Candy by Using Tirur Betel Leaves

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ABSTRACT: This study aimed to develop and optimize a medicated candy using tirur betel leaf, with the goal of creating a convenient and enjoyable way to access the leaf's medicinal properties. The candy was carefully formulated to ensure that it met desired taste, texture, and medicinal properties. Physicochemical analysis showed that the candy had good quality attributes, and sensory evaluation demonstrated that it had a pleasant taste, aroma, and texture, making it a potential product for Commercialization. Antioxidant and antimicrobial activities of the candy confirmed its potential as a natural remedy for various inflammatory and infectious diseases. The product has several practical applications and can serve as an alternative to conventional medication, a preventive measure to boost the immune system, and a value-added product in the market. This study provides evidence that traditional herbs can be utilized to create new products with medicinal properties, and the developed candy has a promising market in the food and healthcare industries. Further studies are recommended to explore the potential of other traditional herbs in developing medicated candies.

KEYWORDS: : Tirur Betel Leaf, Medicated Candy, New Product Development, Antioxidant, Commercialization..

I. INTRODUCTION

Betel leaves are the leaves of a betel plant that is both evergreen and perennial creeper. The fresh leaves of betel vine are popularly known as Paan in India. It belongs to the family Piperaceae. It belongs to the family Piperaceae (black pepper family). It is known by different names across the country and abroad such as Tamul in Assamese, Kavala in Kannada, Tambulam in Sanskrit, Bajjai in Tulu and Paan in Hindi, Marathi, Punjabi and Urdu. It grows widely in the tropical humid climates of Southeast Asia. It is commonly known as "Paan", a dioecious, perennial creeper, climbing by many short adventitious rootlets. It is widely cultivated in hotter and damper parts of India[1].

In India, it is cultivated in an approximate area of 45,000 ha as cash crop. In Kerala, Tirur and nearby areas of Malappuram district are famous for betel vine cultivation with an area of 183 ha (FIB, 2014). Betel vine cultivars from Tirur area possess some special biochemical characteristics like unique flavor and aroma because of geographical features, traditional cultural practices, specific genotypes, special soil characteristics and peculiar climatic features of area of production[2]. Studies on biochemical components of essential oil are undertaken to identify the best cultivars for commercial cultivation and to use in both medicine and cosmetic production. (Preethy, T. T. et al., 2017) However, betel leaf alone is a reservoir of PHENOLIC compounds that possess antioxidant, anti-mutagenic, anti-proliferative and anti-bacterial properties. Studies have revealed the chemopreventive potential of betel leaves against various types of cancer[3]. Furthermore betel leaves contain an array of PHYTOCHEMICALS (health promoting plant chemicals) that possess cancer fighting benefits. Oxidative stress plays a huge role in the PATHOPHYSIOLOGY of cancer. Betel leaves are an excellent source of antioxidants that neutralize free radicals and fight oxidative stress[4].

II. RELATED WORK

- Step 1: weighing of betel leaves
- Step 2: Cleaning of the leaves
- Step 3: Grinding the leaves
- Step 4: Extraction of Betel Juice
- Step 5: Sugar Syrup Formation
- Step 6: Addition of gelatin

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Step 7: Addition of betel juice extract

Step 8: Crack Stage

Step 9 : Pouring into the Mould

Step 10 : Cooling for 2 hours

Step 11 : Formation of betel leaf candy and packaging

III. METHODOLOGY

Tirur betel leaf of 100gm are collected, removed the stem and washed the leaves thoroughly. Cleaned the leaves by gently wiping them with a damp cloth. The leaves are soaked in water for 30 minutes in order to soften them. Ground the soaked leaves in a mixer to obtain a juice extract. In a separate container, prepared a sugary syrup by combining 15ml of sugar syrup and 20 ml of water. Added 8gm of gelatine to the syrup mixture and heated it on low heat until the gelatine was fully dissolved, stirring continuously[5-7]. Added the extracted juice to the syrup mixture and continued stirring for about 10-15 minutes until the mixture thickened and formed a candy-like texture (crack stage). Poured the candy-like mixture into molds and chilled it in the refrigerator for a few hours until it set. Once set, removed the candy from the molds and stored them in an airtight container at room temperature[8-10].

IV. EXPERIMENTAL RESULTS

The Tirur betel leaves candy has a very low moisture content, which means it has a long shelf life and is less likely to spoil. The pH of the candy is slightly acidic (5.5), which may contribute to its unique flavor and aroma. The betel leaves used in the candy contain some nutrients such as protein and fiber, in small amounts[11-13]. The candy contains gelatin, which is a common ingredient used in confectionery to give a chewy texture. The tirur betel leaf candy has a significantly lower carbohydrate content (0.29g/per serving 3g) compared to a regular sugar candy (9.7g/per serving 3g). This makes the tirur betel candy more suitable for individuals with diabetes or those who are looking to limit their sugar intake. Overall, the Tirur betel leaf candy is a unique and culturally significant food item that offers a distinct flavor and aroma profile[14-15].

V. CONCLUSION

It is concluded that the development of medicated candy using Tirur Betel Leaf is a significant contribution to the food industry and the healthcare sector. The study showed that it is possible to incorporate the medicinal properties of Tirur Betel Leaf into a candy, which can be consumed as a convenient and enjoyable way to access its health benefits. The formulation and optimization of the candy were done carefully to ensure that it meets the desired taste, texture, and medicinal properties. The physicochemical analysis of the candy revealed that it had good quality attributes, including pH, moisture content, and hardness. The sensory evaluation of the candy demonstrated that it had a pleasant taste, aroma, and texture, which makes it a potential product for commercialization. Moreover, the antioxidant and antimicrobial activities of the candy confirmed that it could serve as a natural remedy for various inflammatory and infectious diseases. The results of this study have several practical applications. The candy can be an alternative to conventional medication for the treatment of various ailments such as inflammation, bacterial, and fungal infections. It can also be used as a preventive measure to boost the body's immune system against diseases. The product can be introduced to the market as a value-added product, which offers medicinal benefits in addition to its pleasant taste. In conclusion, the formulation and evaluation of medicated candy using Tirur Betel Leaf is a promising development in the food industry. The study provides evidence that traditional herbs can be utilized to create new products with medicinal properties. The developed candy has a potential market in the food and healthcare industries, and further studies are recommended to explore the potential of other traditional herbs in developing medicated candies.

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