Formulation and Evaluation of Giloy Candy

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Abstract

Tinospora cordifolia is an Ayurvedic herb known for its many health benefits. It is a plant that attracts much attention due to its medicinal properties. Tinospora cordifolia is widely used in the Indian system of medicine for its ability to boost immunity and treat fever, inflammation, and liver disease. The candy which is available in the market have many health effects by adding unnecessary nutrients. The research and development of this product ensures that no chemical preservatives are added and the products are effective and safe to eat. These two sweets are often combined with vanilla (giloy) and jaggery with vanilla extract to develop a product that is considered one of the best food products and also contributes to the product ratio for other sweets that can be used with supplementary food today. Desserts are a good source of energy, carbohydrates, protein, fat, fiber, total sugar and vitamin C. The end product is complete control of the food supply. Due to its nutritional value, this product is especially recommended for people with diabetes.

Keywords: Giloy, candy, satva, Stem, ayurvedic

Introduction

Giloy (Tinospora Cordifolia) belongs to the Menispermacaeae family and is known by various names such as giloy, guduchi and amrita in India. It is well known in Ayurveda and traditional medicine for its wonderful therapeutic efficiency.[1] Guduchi is an Indian plant comprising about 70 genera and 450 species found in the lower tropics. It is a famous medicine in Indian Ayurvedic pharmacies. This drug has been the focus of phytochemical, medicinal and medical research for the last two decades.[3] Guduchi is an important element in ayurvedic medicine, and it is used to cure fever, liver and spleen disorders, bleeding sickness, heat burning feeling, aphrodisiac treatment, and oligospermia. Its roots, stems, and leaves have all been utilised medicinally in Ayurvedic tradition for thousands of years. Because of its ability to impart juvenility, liveliness, and long life, it is referred to as "Nectar of Immortality." Tinospora cordifolia, which grows on neem trees (Azadirachta indica), has a high medicinal potential and is known as 'Neem giloy' because of its synergistic impact [4]. Different parts of giloy viz. root, stem, and leaf have been identified to have good amount of crude fiber, minerals, and bioactive phyto-ingredients exerting antioxidant and antimicrobial effects [5]. . The stem is a more widely utilised and beneficial component of the plant than the leaves. [6] and its extract has been shown to be an excellent source of antioxidant for nutraceutical purposes, providing protection against cardiovascular disease, premature ageing, and cancer. [7] Giloy contains a wide range of components from several classe including alkaloids, di-terpenoid lactones, glycosides, steroids, sesquiterpenoid, phenolics, aliphatic chemicals, and polysaccharides, and it has no adverse effects or toxicity when used appropriately[8].The global trend of "Return of Nature" is a transition from to natural. Giloy (Tinospora cordifolia), a valuable common herb and versatile medicinal plant known as "everlasting nectar," is one of nature's blessings.[9]Candy is a popular product consumed by children, young and elderly alike. The major ingredient jaggery makes it an instant source of energy, mostly blended with a variety of flavors and colors for sensory and aesthetic appeal. Flavors such as caramel, chocolate, peppermint, butterscotch, and vanilla are the most popular among many, that comprises of more than 2000 kinds. Although synthetic flavors and colors are predominant, natural sources such as herbs are being increasingly used. Herbal (made from herbs) products have lesser effects, more therapeutic effects, and health benefits. The advantages of herbs used in candy manufacturing are safe, with good efficacy, lower side effect, compatibility with the human body, and wide cultural acceptability.The choice of herb often is influenced based on the target health problem, reduced side

effects, availability, and preferences. Apart from jaggery, these candies are also manufactured using sweetening agents.

Histrological Background

Vedic and Ayurvedic scriptures describe the use of this medicinal herb. The plant is called Guduchi or Amrita in Sanskrit, indicating the rejuvenating, youth-preserving and longevity properties of the plant in the consumer. So, Fountain of Life is a suitable name for this medicinal plant. " Charaka Samhita ", "Sushruta Samhita ", " Bela Samitha "," Kashyapa Samhita "and " Ashatanghrdayam" are some of the famous works that give detailed information about medicinal plants in the spiritual and health response of biological systems. [9] influence of Persian, Arabic, folk medicine and Vedic and Ayurvedic practices on people's lives, as well as scientific knowledge at the molecular level about plants and their biochemical and phytochemical components, has a positive impact on family life. These plant compounds have contributed greatly to the understanding of plants. Traditional Medicine and folk medicine, which do not have a scientific basis, have supported the use of modern medicinal plants in food or supplements. This happens through observation of knowledge and information conveyed by divine beings to sages and sages by gurus (teachers). General Agency. The theabundance of medicinal plants and Vedic scriptures indicating beneficial uses of these plants attracted the attention of scientific organizations and led to further research on plants. Studies have apparently revealed that modern medicine has demonstrated the same phenomenon since ancient times. Always share this.

Botanical description: It is high, deciduous, extensively-spreading, climbing shrub with various elongated twining branches. The leaves are alternate, simple and exstipulate with long petioles having 15 cm (6 in) long which are roundish and pulvinate, both at the base and apex with the basal one longer and twisted partially and half way around. It gets its name heart-leaved moonseed by its heart-shaped leaves and its reddish fruit. Lamina are broadly ovate or ovate cordate, 10-20 cm (4–8 in) long or 8–15 cm (3–6 in)broad, seven nerved and deeply cordate at base, Membranous, pubescent above, whitish tomentose with a prominent reticulum beneath. This Plant flower is having a unisexual, small on separate plants and appearing when the plant is Leafless, greenish-yellow on axillary and terminal racemes while male flowers are clustered,But female flowers are usually solitary. The plant having a six sepals in two series of three Each. The outer ones are smaller than the inner. While it having a six petals which are smaller Than sepals, obovate, and membranous. The fruits aggregate in clusters of 1-3. They having a Ovoid smooth drupelets on thick stalks with sub terminal style scars, scarlet or orange in Colored.[10]

Morphology of Plant: It is a tall, deciduous, large climbing tree with many parallel, spiral branches. Leaves are alternate, simple, without stipules, long-stalked, up to 15 cm (6 in) long, rounded, powdery, with two bases and pieces, base long and half-bent. It is also known as Heart-Shaped Sunflower Seed because of its heart-shaped leaves and red fruits. The leaves are broadly oval or ovoid-chordate, It is 10-20 cm (4-8 in) long or 8-

15 cm (3-6 in) wide, deeply heart-shaped, with seven veins at the base . short. Covered with velvety, white fluffy hair, with a protruding web-like bottom. The flowers of this plant are asexual, small on the plant and appear when there are no leaves, axillary and terminal particles are yellow-green, male flowers are in clusters, female flowers are usually found singly. The plant has six sepals divided into two series of three. The outer ones are smaller than the inner ones. It has six petals, which are smaller than the sepals, boaters and membranous. Fruits are collected in groups of 1-3. They have oval, smooth drupes with red or orange sub-terminal style scars on thick stems.[11]

Taxonomical classification

- **Kingdom:** Plantae Division: Magnoliophyta
- **Class:** Magnoliopsida,
- **Order:** Ranunculaceae
- **Family:** Menispermeaceae.
- **Genus:** Tinospora

Materials and methods

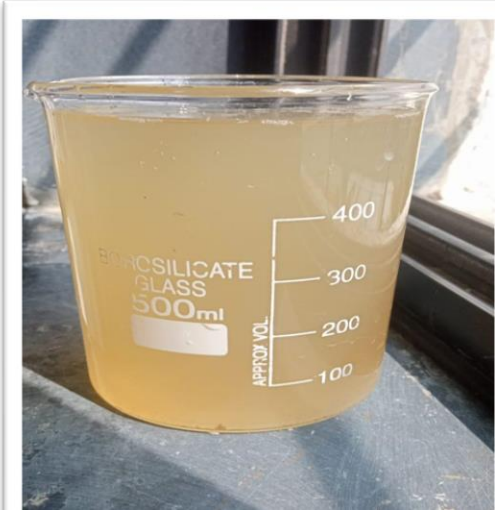
Chemicals: Ethanol, Distilled Water,Molish reagent,Mayers reagent ,Sulphuric acid were procured from the laboratory . Jaggery and vanilla essence were purchased from the local market.

Plant Materials: The fresh thumb sized stems of fresh giloy plant were collected from the garden.

Preparation of Giloy Satva

Giloy Satva used for the preparation of candies was obtained following the procedure described in Ayurvedic literature.[11] The Process is as follows:

Carefully collect the new giloy stems and wash them thoroughly to remove foreign matter. The stems are dried and weighed for further processing. Select about 5 kilograms of new giloy stems with a thickness of 1.6-2.0 cm. The stems are cut into pieces about 2-3 inches long. Grind the chopped giloy stem pieces thoroughly to a thick paste-like consistency. Transfer the slime to a stainless steel container and let it rest for 12 hours, overnight. During the soaking process, four timeless volumes of drinking water (weight / volume) should be added to the Giloy paste. The next morning, soak the paste by hand in water for about 1 hour, making sure to stir. Then gently strain the mixture through a clean cloth to separate the liquid. Allow the'filtered water to sit for 4 hours for the rainwater to settle. The supernatant is then carefully aspirated, leaving a white and smooth starch precipitate at the bottom. Transfer the collected Giloy Satva-rich ingredients in a stainless steel bowl. Allow to air dry under a fan until completely dry. Finally, dried Giloy Satva is stored in dry, closed containers under sterile conditions to preserve its quality and potency. [12]



Formulation Table

Sr.no.	Ingredients	F1
1	Giloy satva	300 mg
2	Jaggery	50 g
3	Water	25 mL
4	Vanilla essence	2-3 drops

Preparation of Giloy Candies

Giloy Candies were prepared by varying the amount of giloy satva using following Procedure:

1. In a deep bottom saucepan or bowl, water and sugar were combined and mixed thoroughly. The mixture was heated over medium heat until it reached a boiling point.To ensure proper Blending, the mixture was continuously stirred using a wooden Spoon or spatula.
2. Giloy Satva was added to the boiling water-jaggery mixture. With constant stirring, the Giloy Satva was slowly and evenly incorporated into the mixture.
3. The stirring process helped to ensure a homogeneous distribution of Giloy Satva within the candy mixture.
4. Vanilla essence was added as a flavoring agent. The mixture was continuously stirred to ensure proper integration of the flavoring agent with the other ingredients.
5. The Prepared candy mixture was promptly poured into candy molds That had been sprayed with vegetable oil to prevent sticking. The Molds were filled with the mixture, ensuring that each cavity was adequately filled.
6. The filled molds were then allowed to cool by placing them on cooling racks or trays. During the cooling Process, the candies gradually solidified and took on their desired Shape.
7. Once completely cooled and solidified, the giloy candies Were carefully removed from the molds
8. The candies were Stored properly in suitable air tight containers in a cool and dry environment.[13]

1. Organoleptic Evaluation: The preliminary organoleptic evaluation of prepared candies was Done by using parameters like Color, Taste, Flavor, Consistency, and shape.

2. Sensory evaluation: The presence of bioactive principles like carbohydrate and Alkaloids in Giloy satva candy were detected by chemical tests Like the Molisch Test (for carbohydrates) and Saponin test (for glycoside)Mayer's Test (for alkaloids) respectively.[14]

A. Mayer's test

Equal amount of extract and 1% HCl were added and Heated gently. Mayer's and Wagner's reagent were added to the mixture. Turbidity of the resulting precipitate was taken as evidence for the presence of alkaloids.

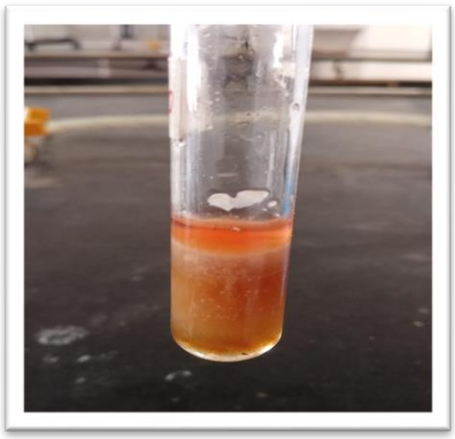
B. Test for Saponin

2 g of dried sample were taken in different test tubes, then add 20ml of distilled water and boil it For 2 min in water bath at 100 °C. The solution was filtered through Whatman No. 1 filter paper and 10ml of filtrate was Taken in another test tube. Add 5 ml of distilled water and Shake vigorously. The presence of persistent froth was taken as positive result.

C. Test for carbohydrate

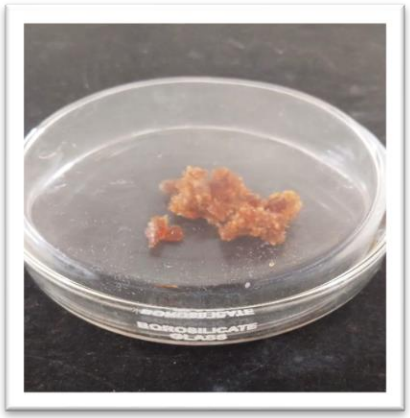
2 ml of sample is taken in a test tube,then 2 drops of molish reagent are added to the mixture and mix it.Now add slowly concentrated sulphuric acid to the test tube by its sides without mixing vigorously so that it will take time to react and form a layer. A purple ring appears at the interface between the acid and test layer which confirms the presence of carbohydrate.

3. Measurement of pH: The acidity or alkalinity of a lozenges was indicated by using lab pH meter, a scale from 1.0 To 14.0. 1% W/Solution was prepared by dissolving 1 g candy in 100 ml distilled water and its pH was recorded.



4. Determination of moisture: This test is used to determine the water content of a material by drying a sample to constant Mass at a specified temperature. By the gravimetric method, 1 g sample was weighed and Placed in an oven at 100-120°C for 3hrs.Cool to room temperature. Repeat until constant Weight observed. Percentage friability is given by the equation.

% F = (Initial Weight−Final weight/Initial weight) ×100.



5. Hardness: Hardness indicates the ability of a tablet to withstand mechanical shocks while handling. The Hardness of the tablets was determined using Monsanto hardness tester. It is expressed in kg/cm2.Three tablets were randomly picked and hardness of the tablets was determined.[15]

Conclusion

In conclusion, the incorporation of Giloy satva in candies holds promise for enhancing immunity. Giloy satva acts as an Antioxidant, combating free radicals and supporting the body's Defense mechanisms against infections. The utilization of Herbal candies as a positive immunomodulator is a noteworthy Recommendation. The development of herbal candies containing Giloy satva not only provides a convenient and enjoyable means Of consumption but also opens up avenues for incorporating Traditional remedies into daily life. Further research and studies Are warranted to elucidate the precise mechanisms of action, Optimal dosages, and long-term effects of Giloy satva in candy Formulations. This will contribute to a better understanding of Its immunomodulatory properties and its potential as a valuable Addition to healthcare practices. Overall, the utilization of Giloy satva in candies represents an exciting area of research And innovation, offering a natural and palatable approach to Immunomodulation. It also highlights the broader

potential of botanicals in the development of novel therapeutics with Enhanced efficacy and reduced side effects.

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