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FORMULATION AND EVALUATION OF HERBAL CANDY FROM MADHUCA LONGIFOLIA FOR SORE THROAT

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ABSTRACT

The prevalence of throat infection is rising day-by-day due to increasing pollution, bacterial infection. Herbs plays important role for medicinal purposes. THis study aims to formulate and evaluate herbal candy from madhuca longifolia for prevention of sore throat. Hard candy developed from extraction of clove, cinnamon and cardamom with the mahua pulp and sugar is used as sweetener. The results of physico-chemical and sensory characteristics showed that the F2 batch is better than the F1 & F3 due to its hardness Due to the demand of medicinal plant and medicinal plant based products has been increasing.

KEYWORDS:- Herbal Candy, Anti-bacterial, Extraction.

INTRODUCTION

A particular kind of candy called herbal candy is designed specifically to ease sore throats. Herbal candy is made with natural ingredients from medicinal herbs and plants, which are well-known for their calming and restorative qualities, as opposed to ordinary candies. Commonly, people use these candies to treat sore throats, coughs, and other respiratory ailments. By relieving sore throats, and enhancing general comfort, they are intended to offer momentary relief.[1] A combination of herbal extracts, including clove, ginger, honey, and other botanical ingredients with expectorant and anti-inflammatory qualities, are contents of herbal candies. These herbs are thought to help reduce cough symptoms by reducing inflammation, opening up the airways, and relieving congestion. Herbal candies are popular because of their convenient use and delicious flavor in addition to their possible medical advantages.[2] Candies come under the category of sugar confectionary. The sweetening agent

used in thecandy preparation is mainly sugar which is composed of sucrose (99.7% of the total weight). Some candies are made from honey which is a natural sweetener. Honey has high calorific value than sugar. 5 gram of sugar contains 49 calories and 5 gram of honey contains 68 calories.[3]

Candies are mainly classified into two types

1. Crystalline candies.
2. Non-crystalline candies

Rock candy is another name for hard candy. It is a product made only of sugar. It is mainly prepared with water and sugar together. The concept of crystallization serves as the foundation for the production of hard candies. Le Chatelier's principle states that "a system which is shifted away from equilibrium acts to restore the equilibrium by reacting in opposition to the shift" to describe the crystallization process. Maillard browning produces hard candies. The term "Maillard browning" refers to a type of browning that occurs naturally and is caused by an amino acid's amino group reacting with the carbonyl group of free sugar. Because they have the least amount of moisture in the finished product, hard candies are different from all other kinds.[4]

Hard candies known as mishri and nabaat were well-liked in Persia and India. In the initial part of the ninth century, sugar sweets were first produced.[5] Candies are considered to be the instant sources of energy as they provide high calories and are also rich in flavour and palatability. They can be easily prepared, packed, transported and stored.[6]

Around Egypt's Twentieth Dynasty in 1000 BC, candies composed of pure honey and flavoured with the juice of citrus fruits, various herbs, and certain priceless spices were used to relieve the throat. Some doctors in the 19th century used morphine and heroin made from opium, which has antitussive properties. At the time, the most popular formulations were Smith Brothers Cough Drops, which were first advertised in 1850, and Luden's, which were created in 1880. However, later worries about the possibility of opioid dependence and addiction led to the development of alternative medications.

Advantages

1) Herbal candy has better consumer preference due to their great taste, flavour, and elegant appearance with attractive colours.

2) Flavoured and sweetened candies help in masking bitter and unpleasant taste of active drugs substance.
3) It is well-received by patients who struggle with swallowing[7,8]
4) Various herbal candy products available in market.

MATERIALS AND METHOD

Materials: Mahua flowers, Clove, Cinnamon, Cardammon, Honey, Corn syrup, Sugar

Apparatus: Beaker, Funnel, Soxalete apparatus, Water bath, Filter paper, Mould.

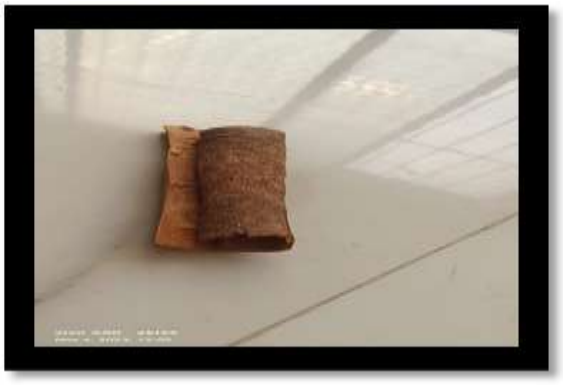
Mahua:

Botanical Name: Madhuca Longifolia.

Family: Spoteaceae.

Discription: Sugars found in mahua flowers give them their sweet taste. It has vitamin C, which is the active ingredient in antioxidants. Additionally, it contains vitamin A. Mahua flowers are low in fats and proteins and high in a variety of minerals, including calcium and phosphorus. The madhuca flower's medicinal Activities include wound healing, antibacterial, antioxidant, anti-inflammatory, analgesic, antipyretic, and anti-ulcer properties.[7,9,10]

- **Cinnamon:** Also, known as Cinnamon bark, Kalmi, Dalchini, Taj, Ceylon cinnamon. The known properties of cinnamon are astringent, stomachic and carminative. It has anti-inflammatory properties. Iis anti-microbial so inhibiting the growth o fbacteria.



- **Clove:** Synonyms are Caryophyllum, Clove flower, Clove buds and Laung. Clove is used as carminative, stimulant, flavoring agent and as an anti-antiseptic. Clove is also used as Dentalanalgesic in toothache. It is also used as a spice in culinary purpose for flavoring The food dishes, pickles.

- **Cardamom:** Also known as Cardamom fruit, Cardamom seeds. Cardamom is used as carminative and Stimulant. In India, green Cardamom is broadly used to treat in teeth.

- **Honey:** Synonyms are Madhu, Honey purified, Mel and Madh. Honey is known for its anti-microbial and wound healing properties. It is commonly used as a home remedies in case of throat infection.

Experimantation

Formulation table for mahua candy

Sr. No.	Ingredients	Quantity taken (1 tbsp.= 14.7 ml) (1 tsp.= 4.2 gm) F1	F2	F3
1	Mahua pulp	2 tbsp	2 tbps	1 tbps
2	Clove	1.5 tsp	1 tsp	1 tsp
3	Cardamom	1 tsp	1 tsp	1 tsp
4	Cinnamon	1 tsp	1 tsp	1 tsp
5	Honey	1 tbsp	2 tbsp	2 tbsp
6	Sugar syrup	1 tbsp	1 tbsp	1 tbsp
7	Corn syrup	1 tbsp	1 tbsp	1 tbsp
8	Lemon juice	Q. S.	Q. S	Q. S

- **For mahua pulp**

1. The dried flowers of madhuca longifolia were taken
2. The flowers were washed and cleaned to remove the foreign particles.
3. The cleaned flower was taken and soak them for 24 hrs.
4. The soaked flower were ground in the mixture and paste was prepared.

- **For mahua candy**

1. Add 2 tbsp. Corn syrup, 3 tbsp. Sugar syrup and mahua flower pulp in pan and heat it on mediumFlame.
2. Add 2 tbsp. Honey, ½ tsp clove, cardamom. Lemon juice
3. Boil the mixture with continuous stirring for 15-20 min. On a medium flameuntil desired consistency is Obtained.
4. Pour the hot thick mixture of mahua paste in the candy Mould and allow it to cool at room temperatureAnd refrigerate for 30 min.
5. Demould the candies and coat them with fructose sugar if needed.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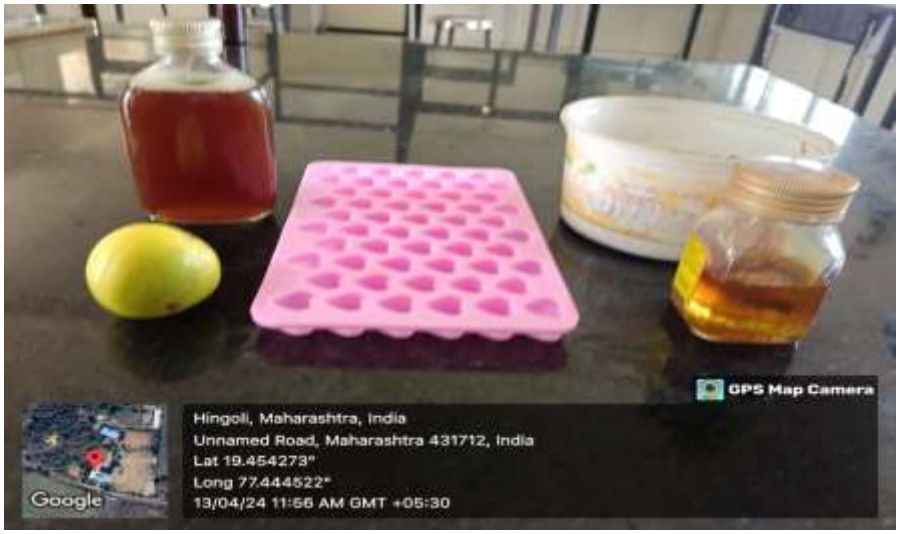
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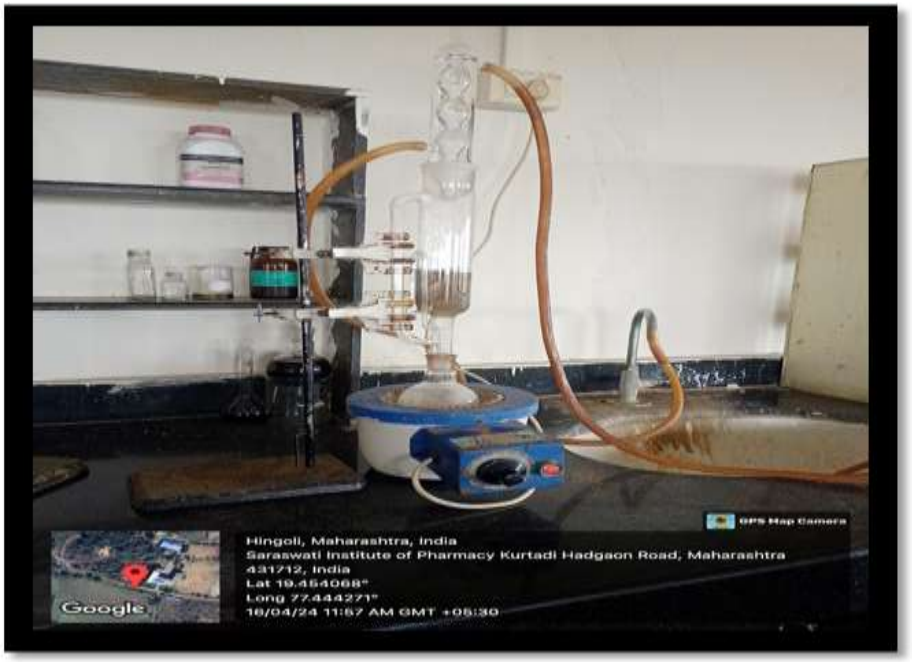
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Evaluation parameters for mahua candy

1. Sensory evaluation

The hard cough candy were examined in terms of the different organoleptic characteristics i.e., color, appearance, taste, texture, flavour, mouth feel and overall acceptability.[11,12]

2. pH measurement

The acidity or alkalinity of a candy was indicated by using lab pH meter, a scale from 1 to 14. 1%w/v solution of candy was prepared by dissolving 1 gm candy in 100ml distilled water and its pH was recorded.[8]

3. Ash value

Weigh accurately about 3gm of the powdered drug in silica crucible. Place the powdered drug in Muffle furnace until the sample is turned into ash. and allow it to cool. Weigh the ash and calculate the % of the total ash in contrast to the air dried sample.[13]

4. Shelf life study

Shelf-life study was started from the 2nd day of making the product. Mahua candy was stored under the refrigerated condition for 4 weeks in its packaging materials. The product was observed at frequent intervals for any change in appropriate color, odour, texture, taste and moisture.[9]

RESULT AND DISCUSSION

Table:- Evaluation parameters.

Physiochemical parameters	F1	F2	F3
colour	Yellowish brown	Dark brown	Yellowish brown
odour	Pungant	Aromatic	Pungant

taste	Bitter	Sweet	sweet
Ph	5.9	4.5	3.9
Ash value	1.85	2.16 gm	1.95gm
Shelf life study	Stable	Stable	Unstable

The present investigation showed the drug show antibacterial activity. The technique for making candy is quick and simple. Mahua is one of the many herbal medications that can be utilized to make herbal candy that are hard candies. The herbal candies were developed and evaluated for chemical, physical, organoleptic and microbial parameters. In Ayurveda, mahua is widely used as an Antibacterial, Antioxidant, Anti-inflammatory, Analgesic, Antipyretic, Anti-ulcer, wound healing activities.

CONCLUSION

From the above result we have concluded that F2 batch is optimized due to its hardness is better than F1 & F3. Herbal candy is a remedy of choice in case of cough, sore throat.This research will also draw a roadmap for the future of herbal candy amongst today's health-wary consumers.

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