

Formulation and Evaluation of Herbal Candy using Ginger and Adulsa

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ABSTRACT

Herbs and spices play an important role for medicinal purposes. candy is a fast and effective delivery system for medications. The development of herbal candy using ginger and Adulsa represents an innovative approach to confectionery that merges traditional herbal remedies with the delightful world of sweet treats. This project focuses on creating a unique herbal candy that not only satisfies taste buds but also offers potential health benefits. Ginger infuses the candy with its distinctive spiciness. Adulsa, a medicinal plant adds a touch of natural bitterness and respiratory health properties. It was to prepare herbal candy by standard method and using adulsa and ginger powder to enhance medicinal value in sugar based candy.

Objective:- This study aimed to formulate and evaluate a novel herbal candy incorporating ginger (*Zingiberofficinale*) and Adulsa (*Adhatodavasica*) to explore its therapeutic potential and sensory attributes.

Purpose:- The purpose is to formulate and evaluate the herbal candy using ginger and Adulsa yielded promising results in terms of sensory acceptability, therapeutic efficacy, and product quality. The potential of herbal candies as natural remedies for throat discomfort and respiratory health support.

Conclusion:- Creating a herbal candy we can conclude that it will be beneficial and as a natural remedy for sore throat and throat discomfort. It should be beneficial because of using Ginger and Adulsa powder and additionally honey.

Keywords : Adulsa, Ginger, Honey, Herbal candy

INTRODUCTION

Medicinal plants (including spices and herbs) are natural, safe, and offer a wide range of cost-effective, preventive and curative therapies which are useful in achieving goals of health for all (WHO;2002). Today, consumers are seeking for food that is healthy, flavorful, fresh, and aromatic. Ginger (*Zingiberofficinale*) and Adulsa (*Adhatodavasica*) have emerged as popular choices due to their diverse medicinal properties and long-standing use in traditional medicine systems.

Malabar nut or Vasaka, is a medicinal plant native to South Asia and has been used for centuries in Ayurvedic and traditional medicine. It contains phytochemicals such as vasicine and vasicinone, which exhibit expectorant, bronchodilator, and anti-inflammatory properties.



Sore throat:-

A sore throat is pain, scratchiness or irritation of the throat that often worsens when you swallow. The most common cause of a sore throat (pharyngitis) is a viral infection, such as a cold or the flu. A sore throat caused by a virus resolves on its own.



Symptoms:-

Symptoms of a sore throat can vary depending on the cause. Signs and symptoms might include:

- Pain or a scratchy sensation in the throat
- Pain that worsens with swallowing or talking
- Difficulty swallowing
- Sore, swollen glands in your neck or jaw
- Swollen, red tonsils

Prevention

The best way to prevent sore throats is to avoid the germs that cause them and practice good hygiene. Follow these tips and teach your child to do the same:

- Wash your hands
- Avoid touching your face.
- Avoid touching your eyes, nose or mouth.
- Avoid sharing food, drinking glasses or utensils.
- Cough or sneeze into a tissue and throw it away, and then wash your hands. When necessary, sneeze into your elbow.

Types of candy

1. Hard Candy: Hard candies have a firm and solid texture, typically made from boiled sugar syrup. They come in various shapes, colors, and flavors and often include ingredients like fruit extracts, essential oils, or flavorings.
2. Soft Candy: Soft candies have a chewy or gummy texture, achieved by cooking sugar syrup to a specific temperature and adding ingredients like gelatin or pectin to create a gel-like consistency.

BENEFITS:-

- Relieves sore throat
- Relieves congestion
- Relieves cough and cold
- Relieves headache
- Cures loss of appetite
- Aids digestion

PLANT PROFILE:-

1) Adulsa

- **Common name :-** Adulsa, Malabar nut
- **Biological name :-** *Justicia adhatoda* L.
- **Kingdom:-** Plantae
- **Order:-** Lamiales

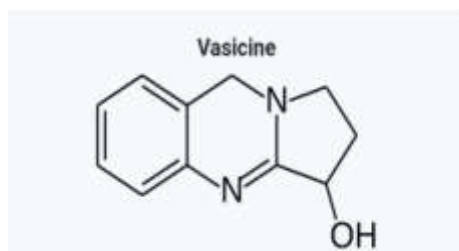


Fig.1 - Adulsa

- **Genus:-** Justica
- **Species:-** J.adhatoda
- **Family:-** Acanthaceae
- **Phytochemicals:-** Alkaloids, tannins, alkaloids like vasicine, quinazoline

- **Morphology:-** Lance shaped leaves, bitter taste, flowers are white
- **Uses :-** used to treat cough, asthma, fever, expectorant, bronchodilator etc.

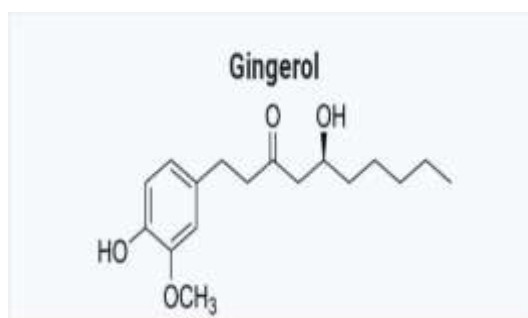


Fig.2 - Ginger

2) Ginger root or ginger

- **Common name :-** Ginger root or Ginger
- **Biological name :-** Zingiber officinale
- **Kingdom:-** Plantae
- **Order:-** Zingiberales
- **Family:-** zingiberaceae
- **Genus:-** Zingiber
- **Species:-** Z. officinale
- **Chemical constituents:-** 1to2%volatile oil,gingerol,alpha-zingiberol,gingerone, shogaol

- **Morphology:-** a monocotyledon plant. The underground stemmodification forms into a rhizome.
- **Uses :-** Used as flavouring agent, used in remedies of cold, cough and asthma



MATERIALS AND METHODS:-

- Sugar and honey purchased from the market
- Ginger powder and Adulsa powder purchased from the market
- Candy mould purchased from the online platform

Instruments:-

- Hardness tester

- Friability tester
- Weighing balance

Apparatus :-

- Water bath
- Stirrer



Fig.3 - Ingredients

Chemicals:-

- Dragandroffs reagent
- Lead acetate

Formulation table:-

Ingredient	F1	F2	Functions
Sugar	40gm	40gm	Used to texture and structure and sweetner
Water	20ml	20ml	To dissolve sugar
Honey	5ml	3ml	Used as binding agent
Ginger powder	6gm	4gm	It gives spicy flavour and properties to relieve pain
Adulsa powder	5gm	1gm	Common remedy for cough and respiratory diseases

PROCEDURE AND PREPARATION :-

- Step1:- Add Sugar to water bath
- Step2:- Add water to dissolve sugar
- Step3:- Heat it up to its boils
- Step 4 :- Check end point by cold water test by dropping mix into cold water
- Step 5 :- Check upto when its get hard into water
- Step 6 :- Mix the ingredients (Ginger powder, Adulsa powder)
- Step7:- Then stir it
- Step8:- Pour the mix in candy mould
- Step9:- Hold it for cooling
- Step10:- Herbal candy



Fig 6 – Preparation



Fig 7 – Candy mould



Fig 8 – Herbal Candy

IDENTIFICATION TEST:-

1) Dragandroffs test:-

Test for presence of alkaloid :

- Prepare a sample solution of adulsa powder with water
- Small amount of solution in a test tube
- Add few drops of reagent to the test tube containing solution

Observation:- Red colour obtained

2) Lead acetate:-

- Add a few drops of lead acetate solution to the sample
- Formation of a precipitate indicate the presence of

phenolic compound

Observation:-

Precipitate formation



Fig.9 – Dragandroffs test



Fig 10 - Lead acetate test

EVALUATION TEST:-

- **Sensory Evaluation :-**
Color is dark brown, Taste is slightly bitter, Odour is characteristic, Shape is square
- **Average weight**
The average weight of herbal candies was found to be 7.6 gm.
- **Hardness testing**
The hardness of six candies in kg/cm^2 was tested and average hardness was recorded which is equal to 10 kg/cm^2 .
- **Friability testing**
Friability testing is another factor which decides the strength of candies
- **Weight variation**
Weigh each individual candy using a precision balance or scale. Calculate the mean (average) weight of the candies in the sample. The range of weights observed among the candies is 7.00 – 7.6



Fig 11 – Friability



Fig 12 – Hardness tester.



Fig 13 – Average weigh

RESULT

Ginger, renowned for its warming and spicy flavour and digestive properties, used in cold and cough. Adulsa has beneficial for respiratory diseases, cough, bronchitis and asthma.

The sensory evaluation results indicate that the herbal candies formulated with ginger and Adulsa offer a unique combination of flavor, aroma, and therapeutic benefits suitable for alleviating symptoms of sore throat and promoting throat comfort.

Sensory Evaluation :-

SUMMARY

The project focused on developing a novel herbal candy incorporating ginger (*Zingiberofficinale*) and Adulsa (*Adhatodavasica*) to explore its therapeutic potential and sensory attributes. The formulation process involved selecting appropriate proportions of ginger and Adulsa extracts, sugar, honey, and water to achieve the desired taste, texture, and medicinal efficacy. Standard candy-making techniques were employed, including cooking, molding, and cooling.

Sr.no.	Title	Observation
1	Color	dark brown
2	Taste	slightly bitter
3	Odour	characteristic
4	Shape	square

CONCLUSION

Creating a herbal candy using ginger and adulsa powder holds for a unique confectionary product with potential health benefits. Ginger offers a spicy flavour and anti-inflammatory properties. Adulsa provides respiratory health.

Combining these could offer a unique herbal candy with potential advantages. But the recipe and formulation need to be refined for successful development.



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