A RESEARCH ON HERBAL COUGH SYRUP

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Abstract:

Colds and the flu, along with associated symptoms like coughing and sore throats, are among the most common issues affecting both adults and children. A common respiratory symptom that can have a major impact on one's quality of life is coughing. Using honey as a base, syrup is a frequent and usually beneficial dosage form for treating colds and coughs. To make the herbal cough syrup, we used medicinal plants that function as natural ingredients, like fennel, clove, tulsi, turmeric, ginger, honey, and more.

The study aims to analyze parameters like turbidity, color, odor, taste, pH, density, and specific gravity in two herbal cough syrups that have been produced. in contrast to modifications in accelerated stability testing. Thus, two formulae (F1 and F2) of herbal cough syrup made from tulsi were produced and evaluated utilizing evaluation criteria.

Key words :- Herbal, cough syrup, medicine, respiratory system, Cough

INTRODUCTION: -

HERBAL MEDICINE: -

In local or regional healing practices, herbal medicine refers to substances produced from naturally occurring plants that are utilized to treat illness [3].

There are very few or no harmful effects from herbal medicine. There are numerous historic alternative medical systems that originated in India. The entire ayurvedic medical tradition of India is centered on nature, especially plants. Because of this, the great ayurveda practitioners such as Charak and Sushruta have written a great deal about identifying and using medicinal herbs. [1]

COUGH: -

Colds and flu, along with associated symptoms including coughing and sore throats, are among the most common issues affecting both adults and children. [2]. Coughing is a quick, repeated activity that helps remove foreign particles and irritating microorganisms from the respiratory tract. The brain detects any obstruction or discomfort in the upper airway or throat and instructs the body to cough in order to get rid of the particles. Coughing is one of the most prevalent issues.

TYPES OF COUGH:-

Cough is classified into two types:

1. Wet Cough
2. Dry Cough

1) **Wet cough:** This causes mucus secretion to be expelled or particles from the respiratory tract to be forged in. A wet cough's primary goal is to clear the respiratory tract of any mucus foreign objects that may be causing the cough [6].

Symptoms:

i. Whizzing
ii. Constricted chest
iii. Breathing difficulties [5].

2) **Dry Cough**: This type of cough is both productive and efficient. Dust or dry smoke irritation is the cause of these dry coughs .

Symptoms:

i. A sensitive throat .
ii. No mucus was released .
iii. Frequent, short, dry cough (5).

Classification of cough :-

1. Acute cough : that goes away after three weeks.
2. Chronic cough : extends for beyond three weeks.
3. Dry Cough: No secretions or mucus.
4. Wet Cough: Contains secretions or mucus.
5. Chest and throat cough: Both productive and unproductive. (R-5)

Herbal Cough Syrup :-

A natural remedy for coughs and other respiratory conditions is herbal cough syrup. The majority of people think that herbal cough syrup is safe and effective. It was made by decocting herbal remedies and utilizing honey as a base. [1]

The flavor and shelf life of bitter medicinal plants have long been improved by the use of herbal syrups. [5]

Because they are easier to swallow and the medication absorbs more quickly, syrups are a common way to give anti-tussive medications. [3]

Types of Herbal Cough Syrup :-

They have 3 Types:-

1) Simple syrup.
2) Medicated Syrup.
3) Flavoured Syrup.

Advantages of herbal cough syrup :-

1) No negative consequences.
2) Easily accessible.
3) The patient can take it without assistance because nursing care is not required.
4) Inexpensive.
5) No prescription is necessary.
6) No harm. (5)

MATERIAL AND METHOD

Sr. No.	Material	Category
1	Tulsi	Anti tussive
2	Clove	Antimicrobial/ Preservatives
3	Fennel	Flavouring agent
4	Turmeric	Anti-inflammatory
5	Ginger	Antioxidant
6	Honey	Base

LIST OF HERBAL INGREDIENTS:-

1) Tulsi :-

Scientific name: ocimum Sanctum

Genus :ocimum.

***Family** : Lamiaceae*

Biological name : Holy Basil

Kingdom: Plantae.

Biological Source: The fresh and dried leaves of the ocimum Sanctum Linn.

Chemical Constituents: Eugenol, carvacrol , Linalool, & flavonoids.[2]

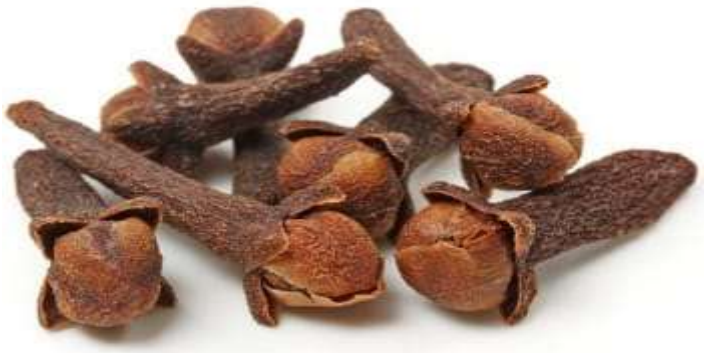
Plant profile :- One mother medicine of nature that cannot be compared is tulsi. The Ayurvedic twist plant, known as the queen of herbs, can reach a height of one meter (3.3 feet). It is a little annual or short-lived perennial shrub with a bitter flavor that has several medicinal uses for its roots, leaves, and seeds.[1]

Use: Antitussive

Health benefits :-

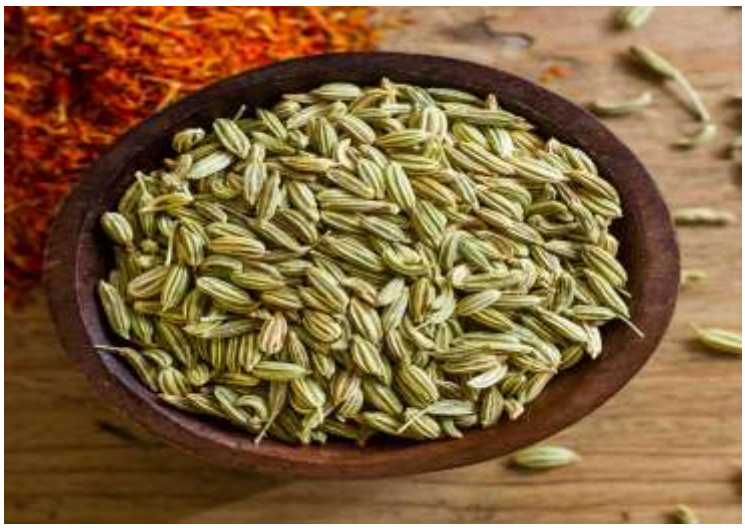
- Enhances the immune system
- Has antibacterial and antitussive qualities
- Treats respiratory conditions.
- Aid in a productive and dry cough.

2)Clove:-



Scientific Name: Syzygium Aromaticum
Family: *myrtaceae*
Genus : Syzygium
Biological Source: It consists of dried flower Buds of Eugenia Caryophyllus.
Kingdom: Plantae
Chemical Constituents: Acetyl eugenil, alpha & beta caryophyllene.

3)Fennel:-



Family: -*umbelliferon*

Biological Source :- fennel consists of the dried ripe fruits of foeniculum vulgare miller.

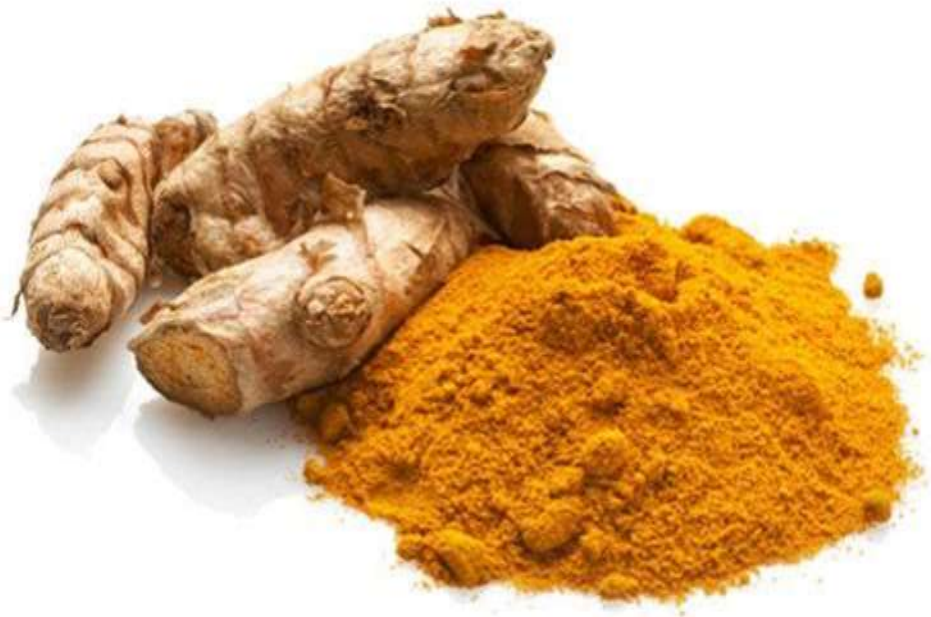
Scientific Name: large fennel, sweet fennel, fennel fruit.

Chemical Constituents:-fennel contains volatile oil (2-6.5%) and fixed oil(12%). The main constituents of the volatile oil are phenolic ether and ketone, fenchone which give the fruit its distinct odour and taste; the other constituents of volatile oil are anisic, aldehyde, anisic acid and phellandrene.

Uses

1. Flavouring agent.
2. It is also used to treat upper respiratory tract infection coughs bronchitis, cholera.

4)Turmeric:-



Scientific name:-Curcuma longa, Curcuma Aromatic.

Genus:- Curcuma **.**

Family:- *Zingiberaceae*

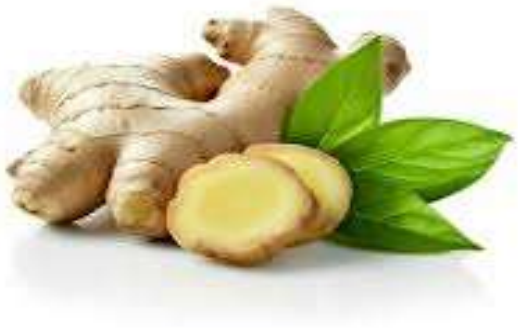
Biological Source: -Turmeric is dried as well as rhizome of plant known as curcuma longa Linn.

Heath benefits of turmeric –

1. Protects cold and cough.
2. Assist with menstruation pain.

3. Assist in lowering respiratory issues and inflammation.
4. Make digestion better.

5)Ginger:-



Scientific Name:- zingiber officinale

Biological source :-It consist of rhizomes of Zingiber officinale & dried in the Sun.

Family:- zingibreceae

Kingdom: -Plantae

Chemical Constituents:- Phenolic and terrine Compounds.

6)HONEY

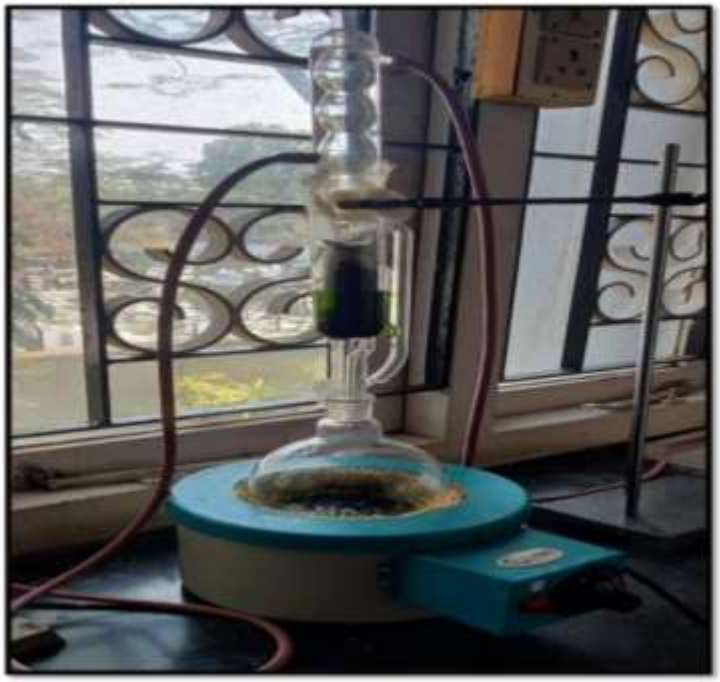
Family :- Apidae

Genus:- APIS

Biological Source = Honey is sugar secretion deposited in honeycomb by the bees, apis mellifera apis dorsata. Honey has been utilized for ages for a variety of uses in addition to sweetening not only does it have a distinct flavour and aroma but it also offers various health benefits. Bees make honey from plant a sweet, thick fluid made from plant hectars, which is often used as a food sweetener. Honey may help reduce coughing which is a possible health advantage (1).

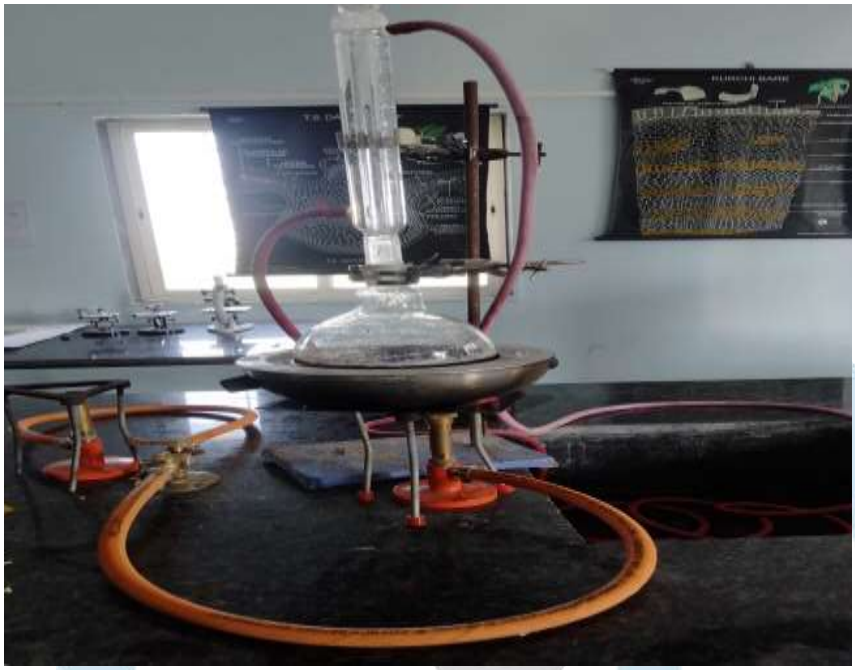
Extract preparation:-

1) Extraction of Tulsi



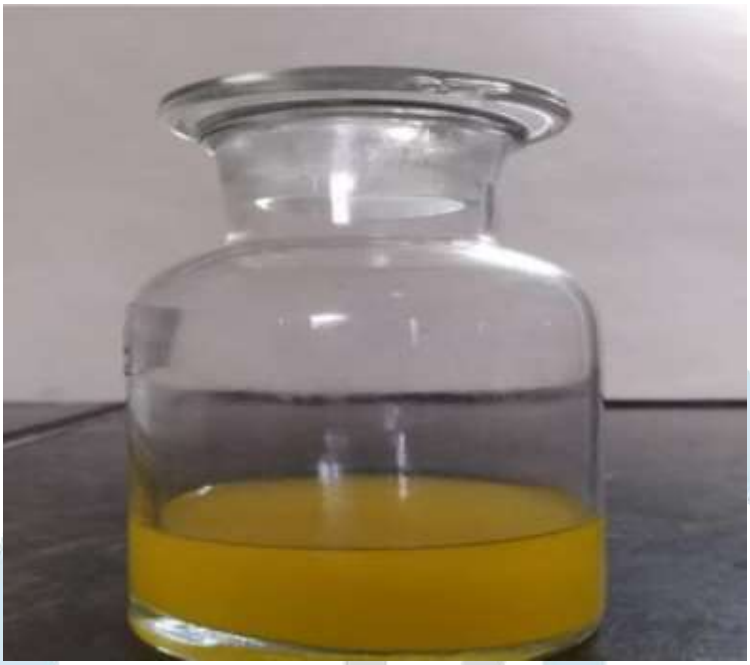
1. The Soxhlet extraction thimble was filled with 25g of weighted leaves.
2. Pour 50 ml of water and 50 ml of ethanol, measured with a measuring cylinder, into the Soxhlet extractor.
3. A condenser unit was connected to an above-water tank to collect rising solvent vapor once the device was coupled.
4. A heating mantle set to 80°C served as the heat source.
5. The solvent condensed in the condenser unit of the Soxhlet extractor after evaporating in the expansion adapter, thimble, and distillation path.
6. As liquid droplets, the condensed vapor returned to the thimble and touched the sample within extract for a whole day (24 hrs).
7. Following extraction, the extract was collected and the extractor was taken out.
8. In order to separate the solvent from the oil extract, the liquid was released into a condenser after extraction.
9. To ensure the Tulsi oil extract was completely solvent-free, the mixture was distilled at 80°C. (5)

2) Extraction of Clove , turmeric, and funnel



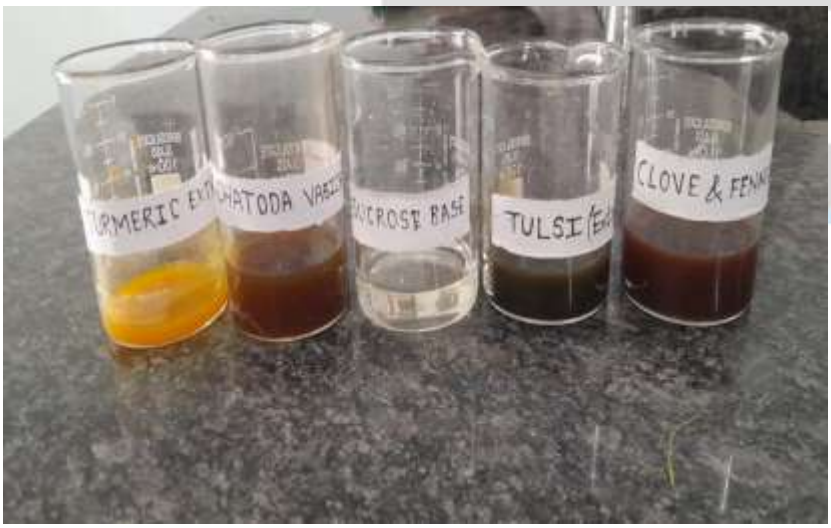
1. Weigh 5–7 grams of each herbal component.
2. Herbs were combined with 500mL of water.
3. Attach the reflux condenser and carefully boil the material in a water bath for three hours.
4. Boil until the entire volume equals one-fourth of the preceeding.
5. The liquid was chilled and filtered. (6)

3) Ginger:-



1. The ingredients were cooked in 100 ml of water for 1 hour.
2. Cold extracts were filtered and used in the creation of herbal cough syrup, extracting all ingredients.

Extraction of all ingredients:



Method of preparation:-

1. Add 15ml of honey to a beaker.
2. Combine 20 mL tulsi extract, 5 mL clove, 5 mL fennel, 2 mL turmeric, 3 mL ginger, and 15 mL honey.
3. Mix softly and consistently, stirring side by side.
4. After the syrup is done, pour it into an amber-colored bottle, label it, and keep it somewhere cool.
5. The final herbal cough syrup was prepared and submitted for evaluation.

Formulation table:-

Ingredients	F1	F2
Tulsi	20ml	20
Clove	3ml	5
Fennel	5ml	5
Turmeric	2ml	2
Ginger	3ml	3
Honey	15ml	15

Evaluation parameter:

1) **pH value:-**
   In a 100ml volumetric flask, place an exactly calculated amount of finished syrup (10ml) and fill with distilled water to make a volume of 100ml. The solution was sonicated for approximately 10 minutes. A digital pH meter was used to measure the pH.

2) **Density**

1. I cleaned the specific gravity bottle.
2. The bottle was cleaned at least twice with distilled water.
3. Weighed the empty dry bottle syrup with stopper (w1).
4. Fill the bottle with the last syrup and place the stopper. Wipe off any surplus syrup from the outside of the tube.
5. Determine the weight of syrup in grams (w2).
6. Calculate the syrup weight in grams (w3).
7. Formula for density: Density of liquid under test (syrup) = weight of syrup under test divided by volume of final syrup being tested equals W3/V.

3) gravity

1. Thoroughly clean the specific gravity bottle with chromic or nitric acid.

2. Rinse the bottle 2-3 times with pure water.
3. Rinse the bottle with an organic solvent, such as acetone, and dry.
4. Measure the weight of an empty dry bottle with a capillary tube stopper.
5. Pour the bottle with distilled water and place the stopper. Wipe extra liquid from the side tube with tissue paper (w2).
6. Using an analytical balance, weigh a bottle with cork and water (w2).
7. Repeat steps 4–6 for the liquid under test, refilling the water after emptying and drying.
8. Use an analytical balance (w3) to weigh the bottle, stopper, and liquid being tested. Formula for Specific Gravity: The specific gravity of the liquid under test (syrup) is calculated as the weight of the liquid divided by the weight of water, or w5/w4.

Organoleptic Properties

1) Colour

The findings for the color of designed syrup batches. The color of the formulation was discovered to be greenish brown for the optimized batch. The colour of the formulation ranges from greenish brown to dark brown for F1 and F2 batches, respectively.

2) Odour:

The results derived from the odor of produced batches of syrup. The odour of formulation was aromatic for F1,F2 batches respectively.

3) Taste:

The results derived from taste of produced batches of syrup. The taste of formulation was slightly Pungent for F1, F2 batches respectively.

RESULT:-

Parameter	F1	F2
pH value	6	6.2
Density	1.57gm/ml	1.95gm/ml
Specific gravity	1.131,kg/m3	1.121kg/m3
Organoleptic Properties		
Colour	Greenish Brown	Greenish Brown
Odour	Aromatic	Aromatic
Taste	Slightly pungent	Slightly pungent
Apperance	Turbid	Turbid

Conclusion:-

In the past, people used a variety of plants, roots, and leaves to treat a range of illnesses. An ayurvedic remedy called herbal cough syrup helps people with a variety of chronic illnesses, including respiratory infections, fevers, colds, and coughs.

A particular conclusion was drawn from the preparation and examination of herbal cough syrup in the current research investigation. The lab-made herbal syrup used as an antitussive. It can be given in the form of a liquid dosage.

Herbal syrup including natural herbs with expectorant and anti-tussive qualities, such as Tulsi, clove, fennel, turmeric, ginger, and honey, has a variety of activities and effects on treating colds and coughs, whether they are acute or chronic. Comparing herbal medicine to synthetic cough syrup, the former is exhibiting less adverse effects. I draw the conclusion that the safest herbal remedy for treating colds and coughs is herbal cough syrup.

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