

Herbal Syrup

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Abstract: Cough refers to a powerful explosive expiration that clears the tracheobronchial tract of fluids and foreign materials. Given the high frequency of cough in both children and adults, the goal of this review paper was to document the plants used to cure and relieve cough in traditional culture and ethnobotany. The issues arising from the use of traditional opioid antitussive medications, such as codeine and codeine-like compounds, to treat cough in a variety of respiratory disorders. Medicinal plants have the potential to provide compounds with strong antitussive efficacy and little side effects. Specification of active compounds responsible for therapeutic action, as well as their measurement in healing medications, are recent advancements in modern phytotherapy, allowing for treatment rationalisation, particularly dose and monitoring of unwanted effects. The purpose of this formulation is to discuss the current state of the plant that is utilised as a source of food, cough-suppressing antitussives and expectorants, as well as their active components.

Keywords: Adhatoda, Adulsa, phytochemistry, pharmacology, Cough, Antitussive activity

I. INTRODUCTION

Herbal syrup it is a defined as a prepared and combination and concentration decoction adulsa with Honey sugar. We will delve into its definition, traditional use, and explore its historical background, preparation, and ingredients. Join us on this journey to uncover the richness of traditional remedies for cough and respiratory ailments Herbal medicine is also known as phyto-medicine or herbalism it is a medicine that use plants or their crude products for the treatment of diseases. It may include also animal fungi or bacteria product. Since ancient era, herbal or plant-based medicines has been used for the prevention, cure & mitigation of diseases and time to time more and more herbal constituents of these natural sources are get enhanced. Herbal medicine has its origins in ancient cultures. It involves the medicinal use of plants to treat disease and enhance general health and wellbeing. Some herbs have potent (powerful) ingredients and should be taken with the same level of caution as pharmaceutical medications. In fact, many pharmaceutical medications are based on man-made versions of naturally occurring compounds found in plants. For instance, the heart medicine digitalis was derived from the foxglove plant. Herbal medicine aims to return the body to a state of natural balance so that it can heal itself Different herbs act on different systems of the body. Coughs are a common symptom of respiratory tract infections, and Adulsa herbal cough syrup has been used traditionally to relieve coughs and bronchitis. The aim of this review is to compile information on the Adulsa plant and its pharmacological properties so that it can be used effectively in modern medicine. Cough medications is used to not only suppress the cough, but also to relieve the discomfort caused by coughing repeatedly. Extra thoracic symptoms such back pain, headaches, fever, and malaise may warrant symptomatic treatment. Treatment for a productive cough may include correcting the abnormalities that cause sputum production or changing the composition of the secretions to make expectoration simpler. Therapy is required to treat the underlying pathology or reduce the frequency of a non-productive cough. Many patients are particularly interested in the latter, and hence seek out an antitussive that can also help them control their cough. (1)

Cough Types:

The simplest way to comprehend coughs is to categorise them as either wet or dry. Wet coughs are mucus-filled coughs that commonly occur during colds, flu, pneumonia, and other illnesses. It is a method of removing mucus from the respiratory system, and the person feels sticky and wet at the back of their throat. Coughs that do not produce mucus leave a dry, tickling sensation in the throat. They're frequently the Result of inflammation in your digestive tract caused by allergies, croup, asthma, and other conditions. You can choose an appropriate wet cough syrup or a dry cough syrup developed to treat the specific problem depending on the type of cough.

Herbal cough syrup:

A herbal syrup is prepared by combining a concentrated decoction with either honey or sugar, and sometimes alcohol. Herbal plants and formulations are used for the many types of diseases like cough syrup and many more other diseases. The content of herbal cough syrup include: -funnel, clove, tulsi, honey, adulsa.

Types of herbal syrup

- Flavored syrup
- Medicated syrup
- Artificial syrup

Advantages of cough syrup

- No side effect Low cost
- Easily available
- No harmless
- Herbs grow in common place

Disadvantages of cough syrup

- Not suitable in emergency and for unconscious patients.
- Dose precision cannot be achieved unless suspension is packed in unit dosage forms.
- Same microbial contamination take place it preservation not added in accurate proportion.
- Fluctuation in storage temperature may cause crystallization of sucrose from saturated syrup(2).

Uses

- Used as expectorant. It is used to treat leprosy blood disorder thirst and vomiting. It is used to treat infertility it also have anti-ulcer activity.
- It Is Employed In The Treatment Of Varied Illness Thanks To Its Ability Of Formation Of Secondary Metabolites Like Tannins, Alkaloid, Saponins, Flvanoids, Reducing Sugar And Anthrax Quinones That Have Capability To Revive Health And Heal Several Illness.
- The Leaves Of Vasaca Are Used To Treat Cough, Asthma, Fever, Tuberculosis, Piles,Jaundice, Bleeding Gum.
- It Is Also Used As An Expectorant.
- It Has Capability Of Bronchodilator.
- Its Decoction Has Capability To Treat Cold And Rheumatism.
- The Excerpt Of Leaves, Dinghy And Flower Is Used To Treat Bronchial, Asthmatic And Pulmonary Affection.
- It Has Property Of Speed Delivery During Parturition.
- It Has Colorful Pharmacological Exertion Similar As Antimicrobial, Haepato protective And Antioxidant Activity.
- It Is Used To Treat Leprosy, Blood Diseases, Heart Troubles, Thirst, Vomiting.
- It Has Property To Treat Loss Of Memory, Leucoderma, Excrescences, Sore- Eye And Gonorrhoea.
- It Has Property Of Sedative, Anti-spasmodic, Anti- Inflammatory, Antidiabetic.

Types of cough :

Wet cough

Productive and effective cough .

It expels secretion mucous or foreign material from respiratory tract.

The main purpose of wet cough is to remove the foreign matter or mucous from respiratory tract by which inspection is caused.

Dry cough:

Non effective and infective cough.

It expels secretion or mucous from lungs.

Dry cough is chronic in nature and it caused by dry irritation, smoke or dust.

A. Classification of cough:

Acute cough: Not more than three week's duration.

Chronic cough: More than three week's .

Dry cough: No mucous or secretion.

Wetcough: With mucous or secretion .

Cough from chest and throat: Productive or non- productive.

Paroxysmal cough: Spasmodic and recurrent.

Bovine cough: Soundless cough due to paralysis or larynx.

Psychogenic cough: Self-conscious activity of the patient to draw attention

Herbal Treatments for cough :

Now a days, herbal remedies are commonly used for the treatment of cough, also the herbal drugs as well as herbal formulations are playing important role in various types of cough. In present days, therapies like cough suppressants are used for cough. The antitussive agent gives only symptomatic relief. There agents are contraindicated in asthma. They also cause different serious adverse effect which includes respiratory depression, vomiting, nausea, sedation and also patients with diminished respiratory reserve. There is recent years, researchers are focusing on the herbal medicine which are having less side effect. (3)

Excipients profiling:

Adulsa:



Synonyms: - Malabar nut, Adhatoda vasica, justicia adhatoda

Biological source: - The biological source of vasaka is dried and fresh leaves of this plant. It belongs to family acanthaceae.

Chemical constituents:- The chemical constituent of vasaka are alkalis tannins flavonoids Serpentsugar and glucoside. The leaves of Osaka contain Vitamin C in large amount. The roots of these plant contain vasicinolone, basil and peganine.

General Information:

Justicia adhatoda commonly known in English as Malabar nut, adulsa, adhatoda, vasa, vasaka, is a medicinal plant native to Asia, widely used in traditional medicine. The leaves of Justicia adhatoda contains phytochemicals such as alkaloids, tannins, saponins, phenolics and flavonoids. The most important is vasicine, a quinazoline alkaloid. The vasicine yield of the herbage has been measured as 0.541 to 1.1% by dry weight. Bromhexine, a serine protease inhibitor with mucolytic properties available over-the-counter in Europe, was originally derived from Justicia adhatoda. Justicia adhatoda is frequently utilized in indigenous medicines by local inhabitants, indicating its significance in traditional healing practices. The plant has been recognized for its potential in drug discovery through ethnopharmacological analysis (Ishtiaq et al., 2021). These findings highlight the importance of Justicia adhatoda in traditional medicine and its potential for further exploration in modern drug development. (4)

Morphology of adulsa leaf



Classification:

Division- Spermatophyta

Subdivision- Angiospermae (Angiosperms)

Class: Dicotyledonae (Dicotyledons) Sub Class- Gamopetalae • Series- Bicarpellate

Colour: Light Green

Size : 10-13 Cm Long

Apex : Acuminate

Shape : Ovate-Lanceolate

Odour: Characteristic

Taste: Bitter

Margin: Slightly Crenate To Entire

Base : Symmetric Texture : Leathery

Venation : Pennate

Median Height Of 3 Meters. Its Branches Square Measure Opposite And Ascending. They Are Pubescent; Light-Weight Inexperienced On Prime And Darker Inexperienced At A Lower Place. The Leaves Grow In An Opposite Formation, And Square Measure

Entirely Simple , And Shortly Petiolate, Tapering Towards Each Apex And Base. The

Leaves Become Dark Brown Inexperienced Once Dry And Style Bitter With A Smell Like Sturdy Tea. Its Stem Is Soft And Makes A Decent Charcoal. The Flowers Square Measure Giant, Dense, Terminal Spikes With Giant, Enticing White Petals, Streaky With Purple On The Lower lip. (5)

Chemical Properties:

Parameters	Percentage
Moistures	15.2
Fat	1.75
Protein	6.12
Carbohydrates	68.25
Ash	2.18
Crude fibre	6.5

Table:1

Funnel:-



Synonyms:

Sweet fennel, fruit fennel, saunf (hindi), fructus foeniculi.

Biological source: Fennel is the dried, ripe fruits of *Foeniculum vulgare* Mill. (Family: Apiaceae).

Chemical constituents: Fennel contains volatile oil (2-6.5%) and fixed oil (12%). The main constituent of the volatile oil are phenolic ether, anethole (50-60%) and the ketone, fenchone (18-20 %) which give the fruit its distinct odour and taste; the other constituents of volatile oil are anisic aldehyde, anisic acid, apinene, dipentene and phellandrene.

Uses:

Fennel is used as stimulant, aromatic, stomachic, carminative, and expectorant. Anethole is used in mouth and dental preparations.

Fennel is used in diseases of the chest, spleen and kidney

Clove:



Synonyms: caryophyllus, clove buds, caryophyllum, laung (hindi) Caryophyllus.

Biological source: - Cloves are the dried flower buds of *Eugenia caryophyllata* Thumb (Syn. *Syzygium aromaticum*. (Family: Myrtaceae).

Chemical Constituents: - Clove contains 14-21% of volatile oil. The other constituents present are the eugenol, acetyl eugenol, gallotannic acid, and two crystalline principles; α - and β - caryophyllenes, methyl furfural, gum, resin, and fiber. Caryophylline is odorless component and appears to be a phytosterol, whereas eugenol is a colorless liquid. Clove oil has 60-90% eugenol, which is the cause of its anesthetic and antiseptic properties.(6)

Used: Used for upset stomach and as an expectorant clove is used for diarrhea hernia and bad breath.

Tulsi



Synonyms:-Sacred basil, Holy basil.

Biological source: Tulsi consists of fresh and dried leaves of *Ocimum sanctum* Linn. (Syn. *Ocimum tenuiflorum*) family Lamiaceae, and contains not less than 0.40 per cent eugenol on dried basis

Geographical Source: - it is herbaceous multi branched annual plant found throughout India. It is considered as sacred by Hindus. The plant is commonly cultivated in garden and also grown near temples. It is propagated by seeds, Currently Tulsi is cultivated commercially for its volatile oil.(7)

Chemical constituents:- It contains approximately 70 per cent eugenol, carvacrol (3%) and eugenol-methyl-ether (20%). It also contains caryophyllin.

Uses:- The oil is antibacterial and insecticidal

- The leaves are used as stimulant, aromatic, anti-catarhal, spasmolytic, and diaphoretic.

-The juice is used as an antiperiodic and anti-inflammatory properties.

Turmeric



Synonyms:-

Curcuma longa, curcuma aromatic, haldi (hindi).

Biological source:- Turmeric is prepared rhizome of *Curcuma longa* Linn.

(Zingiberaceae). It is perennial herb of ginger family, having thick rhizome; native to Southern Asia; extensively cultivated in India, China Indonesia and other tropical countries.

Chemical Constituents:- Turmeric contains 3-7% orange-yellow colored volatile oil which is mainly composed of turmerone (60%), α , β -atlantone and zingiberene (25%) with minor amounts of 1,8 cineole, aphellandrene, d sabinene and borneol. Others than above it contains yellow coloring matter including 0.3-5.4%.(8)

Uses:- It is used as an antioxidant in capsules tablets and flavouring tea.

It is recommended as a food supplement to treat liver problems menstrual difficulties hi marej test pain etc.

Honey



Synonyms: Madhu, madh .

Biological source: Honey is viscid and sweet secretion stored in the honey comb by various species of bees.

Chemical constituents:(9)

Fibers test for artificial invert sugar.

Reduction of feelings solution.

Limit test

Uses:(10)

Laxative, bactericidal.

Sedative, alkaline characters.

It is use in food cold.

It is use in flavoring agent.

It is use in medium in preservative of cornea.

Sweetening agent.

Extraction process:-

Leaf extract of adulsa:- fresh leaves of adhatoda vasica were harvested and washed in tap water. Then 50g of leaves macerated to paste with the help of mortar and pestle with 50 ml of tap water. And later filtered by muslin cloth.(11)

Decoction of fennel, turmeric, clove:

use 5 to 7 gram of each herbal ingredients. All herbs are mixed using 500 ml of water. then attach reflex condenser and boil the mixture by using water bath for 3 hours. When total volume of mixture becomes one fourth of the previous. Then liquid was cooled and filtered.

Extraction of tulsi :- leaves of ocimum sanctum l. or tulsi were harvested and washed with sterile water. Then 50g of tulsi along with 50 ml of water and 50 ml of ethanol were placed in a soxhlet apparatus.(12)

Methods of preparation of cough syrup:-

To prepare final herbal cough syrup firstly.

40 ml of extraction of adulsa leaves were added in the 60 ml of macerated clove, fennel, turmeric decoction with continue stirring.

Then 30 ml of tulsi extract were added in the mixture along with continue stirring.

Then 50% of honey is added side by side continue stirring. Herbal cough syrup was prepared.(13)

Formulation Table:

Sr. no.	Ingredients	Quantity	Use
1	Adulsa	40ml	Antitussive
2	Fennel	7gm	Flavouring agent
3	Clove	5gm	Expectorant
4	Turmeric	5gm	Antitussive
5	Tulsi	30ml	Antitussive
6	Honey	30gm	Preservative, viscosity, modifier

Table :2

Evaluation Test:

Colour examination :

2ml of syrup was taken on a watch glass.

Watch glass was placed against white background under white tube light

Colour was observed.

odour examination:

2ml of prepared syrup was taken and smelled by an individual.

The time interval between two smelling was 2min to nullify effect of previous smelling.

taste examination :

Small amount of final cough syrup was taken and was examined on the test buds of the tongue.

pH determination :

10 ml of prepared syrup taken in 100 ml of volumetric flask.

Make up volume to 100 ml with distilled water iii. Sonicate for 10 min iv. pH was measured by using digital pH meter.(14)

Viscosity Determination

The viscosity of each formulation was determined by using Ostwalds U-tube Viscometer. (15)

Result:

Sr. no.	Parameter	Observation / Value
1	Colour	Yellowish brown
2	Odour	Aromatic
3	Taste	Slightly pungent
4	Ph	6
5	Viscosity	1.51

II. CONCLUSION

The aim of this project was to formulate Adulsa and honey based herbal cough syrup. An ancient time peoples use various plant, roots, and leaves for treatment various disease.

Herbal cough syrup is an Ayurveda medicine which is useful in many chronic health problem such as cough, cold, fever, respiratory infection and disorders among human. As a combination of herbs, it is safe, can be made at home, has a low production cost, and can be easily available in any area. Herbal syrup including natural herbs, like tulsi, clove, fennel, turmeric and adulsa which have various action and effect on reducing acute or chronic cough and cold and act as cough suppressant having expectorant and antitussive property. I conclude about herbal cough syrup that, herbal cough syrups is a safest herbal medicine which is use for treatment of cough and cold

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