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## Formulation and Evaluation of Herbal cough syrup

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### Abstracts:

The herbal cough syrup is most commonly used and popular dosage form. They are used to cure cough and cold because it has ease of patient compliance. The herbal cough syrup was formulated using crude drugs as fennel clove, adulsa, tulsi and turmeric. All these herbs have antibacterial, cough suppressant, expectorant and anti-inflammatory activity. The formulation and evaluation of herbal cough syrup in future has a very high scope. Herbal cough syrup decreases the side effects and is free from viral infection.

**Keywords :** Herbal Cough syrup, Adulsa, fennel fruit

### INTRODUCTION

Herbal syrup is defined as a prepared combination and concentration decoction. Honey sugar or either some time use alcohol. The base of such syrup is a strong herbal decoction and mixing a decoction with sugar honey help to thicken to preserve the decoction. Herbal plant and their formulation are used for many types of disease like cough syrup and other disease. The cough syrup many types of herbal plant are used as pudina, Tulsi, Cinnamon, honey in that whole plant are used for making herbal medicine the many years. Herbal formulation is most commonly development in developing countries as health care. Syrup are very prominent delivery vehicle use for the anti-tissue medication because they give more soothing to swallow (ingest) than the tablet and capsule. This medication is quickly observed. There are some available synthetic cough preparations they cause several adverse effect. So the present study was show to enlarge and in violet herbal cough syrup carry natural element having no any side effect in general health professionals having difficulties of accessing effectiveness and safety natural treatment (therapy). Number of instance allopathic medication product has not been studied in large scale and generally. Even so the use of complementary medication was sometime helpful and the confirmation is same time helpful and the confirmation the effectiveness of this all medication literature is limited, they frequently sold with the drug store. A successful formulation of liquid, as well as other dosage forms, requires a blend of scientifically and pharmaceutically. Oral liquid medicines are being superseded gradually by tablets and capsule because of deleterious changes take place more readily in solution. Nevertheless there are still a large number of liquid oral preparations are available in the official books. The fact is that the absorption of medicaments in solution from the GI tract into the systemic circulation may be expected to occur more rapidly than other oral dosage forms of the same medicinal agent. Ayurvedic formulations are preferentially administered by oral route, and most of the orally administered Ayurvedic formulations belong to liquid form of drug or drug combination.

### PROFILE

- Scientific Name :- *Justicia adhatoda*
- Synonyms :- Malabar nut, adhatoda, Vasika
- Botanical Source:- Its dried & fresh leaves of adhatoda vasika & Malabar nut.
- Geographical Source :- Most popular & common name of this plant is adulsa (Vasaka) Most Popular in India vasaka is widespread throughout India & tropical regions of South East Asia.
- Chemical Constituents :- The chemical constituents of vasaka are tannins, flavonoids, sugar and glucoside. The leaves of vasaka contain Vitamin C in large amount. The root of this plant contains vasicinone, basil and peganine.
- Description :- It is a thick evergreen shrub with yellowish bark & glabrous branches long, elliptical lanceolate & tapering to the base. Leaves are pubescent dark green in colour & minutely pubescent.
- Macroscopic characterization:- leaf is a pale green, fruit in order, bitter taste, long shape and width

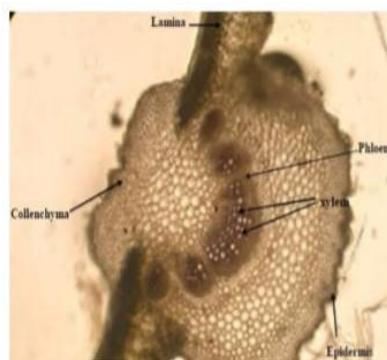


Figure No.1 Macroscopic characterization

- 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.

#### Microscopic Characterization

Transverse section of leaf showed xylem, phloem, Lamina, collenchymas, epidermis, palisade, Spongy, Mesophyll, abaxial surface and prismatic form of calcium Oxalate crystal present in mesophyll for lower surface



Microscopic: T.s of Adulsa leaf

#### Materials And Methods

- Chemicals and collection :-  
**Methyl paraben : Propyl Paraben**

Fennel, Clove, Haldi, Adulsa, Tulsi, liquorice, Lemon grass, sucrose are collected in the institution Kai Yashodhabai Dagdu Saraf Charitable Trust's college of Pharmacy sakegaon Tal Bhusawal Dist Jalgaon in Maharashtra India.

- Formulation
- EXTRACTION PROCESS: -
- Decoction of fennel, Clove and Turmeric and liquorice : -
- 5-7 gm. of each herbal ingredients
- Herbs was mixed using 500ml of water
- Attach reflux condenser and material was boil under carefully by using water bath for 3 hrs.
- Boil until total volume become one forth part of previous
- Then liquid was cooled and filtered. (10)



Figure No.3 Extraction of clove, fennel & haldi, liquorice root

**Preparation of leaf extract of adulsa:-**

Fresh leaves of *A. vasica* were harvested and thoroughly washed in tap water. 50m of leaves were macerated to paste with the help of sterilized mortar and pestle with 50ml tap water and it was filtered through muslin cloth. The filtrate was kept frozen at 4°C and used in subsequent experiments as stock solution.



Figure No.4 Extraction of Adulsa

**Extraction of Tulsi:-**

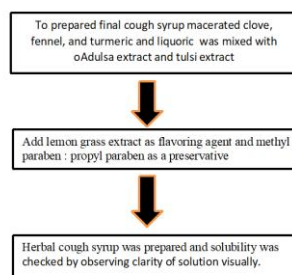
Leaves of *Ocimum sanctum* L. tulsi were collected from different sites washed with sterile water and 50g of tulsi was placed in the thimble of soxhlet apparatus with 50ml of water and 50 ml of ethanol over 24hr



Figure No.5 Extraction of Tulsi

**Physiological investigation :-**

- a) Extractive value  
Calculate extractive value  
Extractive value (%) = (weight of extract/volume of solvent ) \*100
- b) **Phytochemical investigation**
  - General test for alkaloids
  - Tests for carbohydrates
  - Test for reducing sugar
  - Test for tannins
  - Test for flavonoids
  - Test for phenolic compounds
  -

**METHOD OF PREPRATION OF COUGH SYRUP:-**

**Formulation Table :-**

Sr.no	Ingredient	Quantity	Use
1	Fennel	3 ml	Aromatic, flavoring agent
2	Clove	3 ml	Expectorant
3	Haldi	3 ml	Antitussive
4	Adulsa	10 ml	Antitussive
5	Tulsi	3 ml	Antitussive
6	Methyl paraben: propyl paraben	2:1	Preservative
7	Lemon grass	Q.S	Flavoring agent
8	Liquorice root	5ml	Cough suppressants
8	Sucrose	25 ml	Base

**Benefits of herbal cough syrup**

## 1. Lesser side effect :

All cough syrup covered here are made with natural ingredients . Ancient indiaayurveda from the basis of almost all the formulation with tulsi, ginger powder , honey munkaa, yastimadhu, banapasha, and vasa talishpatrashathaldi,pippali etc. being the ingredient in the formulation. The use of natural ingredients means minimal side effect.

## 2. No drowsiness :

The use of natural ingredients also translate to the absence of drowsiness. You are free to function normally while using these cough syrup without any fear of dozing off or being in two mind for driving.

## 3. Multi purpose products : each of natural ingredient these ayurvedic formulations of india have multifarious functionality an ingredient soothing the throat is also helping in digestion another while diluting the phlegm may also be acting to improve liver function

## 4. Immunity booster : by virtue of the natural ingredients known to ayurveda for ages many of these syrups have the inherent immunity boosting capability with every teaspoon of these cough syrup you are not only fighting out your cough but also building immunity to fight against attacks from allergens infection etc .

Organoleptic character

Formulations	Colour	Odour	Taste
A	Yellowishbrown	Aromatic	Slightly pungent
B	Yellowishbrown	Aromatic	Slightly pungent
C	Yellowishbrown	Aromatic	Slightly pungent

**B) pHpaper.**

Sr. No.	Parameter	A	B	C
1.	PH	6	6.2	6.1
2.	Viscosity	0.01323	0.0492	0.03989

**Procedure for glass electrode:**

1. Prepare 30ml buffer of each pH. The volume of the stock solution to be taken. Prepare the buffer by mixing appropriate volume.
2. Allow the solution for 15 minutes to establish equilibrium.
3. Measure the pH of solution using a pH meter

**Solutions :** Stock solution: Acetic acid 0.2 molar: Dissolve 1.2 ml of glacial acetic acid in 100 ml of distilled water in a volumetric flask. Molecular weight of glacial acetic acid is 60.05; weight per ml is 1.050. Buffer solution: Dissolve 10.21 gram potassium hydrogen phthalate in sufficient Carbon dioxide free water to produce 1000ml

**Viscosity:**

Thoroughly clean the Ostwald viscometer with warm chromic acid and if necessary used

1. An organic solvents such as acetone.
2. Mount viscometer in vertical position on a suitable stand.
3. Fill water in dry viscometer up to mark G.
4. Count time required, in second for water to flow from mark A to mark B.
5. Repeat step 3 at least 3 times to obtain accurate reading.
6. Rinse viscometer with test liquid and then fill it up to mark A, find out the time required for liquid to flow to mark B.
7. Determination of densities of liquid as mentioned in density determination experiment.

**Formula for viscosity:**

Density of test liquid  $\times$  Time required to flow test liquid Viscosity =  $\times$  Viscosity of water Density of water  $\times$  Time required to flow water (24).

**Viscosity:**

The viscosity of formulation was found to be 0.0492 poise for the range of 0.0492- 0.03989 poise for all these formulation.

**Stability Testing:**

Stability Testing of the prepared herbal syrup was performed on keeping the sample at accelerated temperature conditions. Nine portions of the final herbal syrup A, B and C were taken kept at accelerated temperature at 4c .Room temperature and 47 c respectively. The sample were tested for all the physicochemical parameters , turbidity and homogeneity at the interval of 24hr 48hr and 72hr to observe an change.

**RESULTS AND DISCUSSION:**

The results obtained in this study suggest that the herbal formulations prepared possesses Antitussive activity. The component of the herbal cough syrup formulation was selected due to their reported action that plays a preventative and curative role in prevention of cough. Syrup prepared passes all the physical parameters and shows the significant Antitussive activity.

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1: Whole plant



2- Fresh leaves



3- Dried leaves