

# REVIEW ON : HERBAL COUGH SYRUP

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## ABSTRACT

The cough is one of the most common problem faced all people. There are mainly two type of cough, one is Dry cough and another one wet cough. Dry cough is no mucous secretion while in wet cough there is cough with mucous secretion. Syrup is commonly used and popular dosage form which is used to cure cough and cold, because it having easy to patient compliance. The herbal cough syrup was formulated using crude drugs as Marshmallow root (asa anti-irritant), Elderberry (as a anti-bacterial), Pineapple (as a anti-inflammatory) & Ivy (as a anti-viral).

Quality of herbal cough syrup was evaluated for pre-formulation and post formulation like density, viscosity, pH and various organoleptic characterstic.

**Keyword:-***Herbal cough syrup, Dry & wet cough, Decoction extraction, Evaluation.*

## INTRODUCTION

Herbal cough syrup is defined as decoction with honey or sugar. Herbal cough syrup is formulated using crude drugs as Vasaka, Marshmallow, Elderberry, Cinnamon & Thyme etc. Herbal cough syrup is used in both dry & wet cough. The cough syrup medication is a liquid dosage form use of oral liquid pharmaceutical has been confirm on basic ease of administration to those people to have the problem in swallowing of solid dosage form of medication.

The history of herbal medicine dates back to ancient societies. It entails using plants medicinally to treat illnesses and improve overall health and wellness. Certain plants should be taken with the same caution as pharmaceutical drugs due to their strong (powerful) components. In actuality, a large number of pharmaceutical drugs are manufactured clones of naturally occurring plant-based molecules. For example, the foxglove plant was the source of the cardiac medication digitalis. The goal of herbal medicine is to help the body find its natural equilibrium again so that it can cure itself. Various herbs affect the body's systems in different ways.

Syrup is a concentrated solution contains sugar/honey and purified water. When syrup without a medication but the flavouring agent present are known as flavoured syrup or non medicated syrup. Flavoured syrup are frequently used as a vehicle for unpleasant test of medication results is medicated syrups.

Syrup is very prominent delivery vehicle use for the anti-tussive medication because they give a more soothing to swallow then the table and capsule.

Herbal cough treatments with proven clinical efficacy include ivy/primrose/thyme-based preparations which are recommended as expectorants in current European guidelines [1]. This review and meta-analysis was conducted to summarize and evaluate exist ing high-quality data on the use of herbal medicines in the treat ment of cough in adults and children.

## Classification of Cough:-

1. Acute cough – Not more than 3 weeks duration.
2. Chronic cough – More than 3 weeks.
3. Dry cough – No mucous secretion
4. Wet cough – With mucous secretion.

### Types of herbal syrup

- Flavored syrup
- Medicated syrup
- Artificial syrup

### Advantages of cough syrup

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

### Disadvantages of cough syrup

1. Not suitable in emergency and for unconscious patients
2. Suspension must be packed in unit dosage forms in order to achieve dose precision
3. The same microbiological contamination occurs when preservation is not applied in the proper ratio.
4. Fluctuation in storage temperature may cause crystallization of sucrose from saturated syrup.(2)

## INGREDIENTS (MATERIALS) USED IN FORMULATION:-

In formulation of herbal cough syrup, lots of materials (ingredients) used.

### 1) Marshmallow Root (Reshakhlatmi) :-

#### Biological source:-

It is obtained from dried root of *Althaea Officinalis*.

#### Chemical Constituents:-

It contains starch (25-35%), pectins (11%), saccharose (10%), flavonoids.

#### Uses:-

- a) It is used to reduce irritation of mouth.
- b) It is used in dry cough.
- c) It is used as anti-inflammatory.



## 2) Elecampane Root (Puskarmool):-

### Biological Source:-

It is obtain from the dried roots of *InulaHelenium*.

### Chemical Constituents:-

It contains phenolic acids (caffeic), terpenes (alantolactone), flavonoids (catechingallate, o-glucoside) and mucilage.

### Uses:-

- a) It is used to treat whooping cough.
- b) It is used as a anti-microbial.
- c) It is used as a expectorant.



### 3) Ivy leaf (Kundru):-

#### Biological Source:-

Biological source is *Ivy Genus*.

#### Chemical Constituents:-

It contains sterols, tannins, glycosides, phenols, alkaloids, flavonoids, saponins, and carbohydrates.

#### Uses:-

- a) It is used in viral infection.
- b) It is used in cold and cough.
- c) It is used to loosen mucus thereby helping to cough out easily.
- d) It is used against chronic inflammatory bronchial conditions.



### 4) Elderberry (Kanji):-

#### Biological Source:-

It is obtain from bark of *Purple Berry*.

#### Chemical Constituents:-

It contains polyphenols, anthocyanins, flavonols, phenolic acids, and proanthocyanidins, as well as terpenes and lectins.

#### Uses:-

- a) It is used as anti-bacterial and anti-viral.
- b) Keeps the respiratory system healthy.
- c) Help relieve nasal congestion.
- d) Treats respiratory illness such as cold and flu.



## 5) Vasaka (Adulsa):-

### Biological Source:-

It is dried and fresh leaves of *Adhatodavasica* or *Malabar nut*.

### Chemical constituent:-

It contain pyrroloquinazoline alkaloids, adhatonine, vasicinone, vasicinol and vasicine.

### Uses:-

- a) It is used as anti-tussive and anti-inflammatory.
- b) It is used as expectorant and bronchodilator.
- c) It is used in treatment of cough and bronchial asthma.
- d) It relieves chest congestion.
- e) It is used as anti-oxidant.
- f) It is used to treat chronic fever.



## 6) Pineapple:-

### Biological source:-

It obtain from stem and ripen fruits of pineapple plant *Ananascomosus*.

### Chemical Constituents:-

It contains bromelain (which is more effective in cough treatment), alkaloids, saponins, tannins, flavonoids and glycoside.

### Uses:-

- a) It is used to loosen mucous in throat.
- b) It is used as anti-inflammmatory.
- c) It prevents cold and cough.
- d) It is used to reduce nausea.



## 7) Cinnamon (Daalchini):-

### Biological Source:-

It consists of the dried inner bark of the shoots of trees of *Cinnamomum Zeylanicum*.

### Chemical Constituents:-

It contains eugenol, cinnamic acid, cinnamic aldehyde, phlobatannins, volatile oil, mucilage, etc.

### Uses:-

- a) It is used to thin the mucus.
- b) It is used as flavouring agent.
- c) It is used as anti-bacterial & anti-viral.
- d) It is used to reduce inflammation.
- e) It is relief from cold and cough.

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## 8) Honey:-

### Biological source:-

Honey is a sugary substance deposited in the honey comb by *Apis Millifera* and of *Apis Dorsata*.

**Chemical Constituents:-**

It contains glucose (30-40%), fructose (40-50%), small quantities of sucrose, dextrin, formic acid and also contains proteins, vitamins, and enzymes.

**Uses:-**

- a) It is used as a demulcent and sweetening agent.
- b) It is common ingredient of several cough mixture and cough drops.
- c) It is used as a flavouring agent.
- d) It is used as vehicles.

**9) Thyme:-****Biological Source:-**

Biological source is *Thymus Vulgaris*.

**Chemical Constituents:-**

It contains thymol, p-cymene, alpha carvacrol, terpinene, beta caryophyllene, etc.

**Uses:-**

- a) It is used to treat dry & wet cough.
- b) It is used as inflammatory and anti-microbial.
- c) It is used as expectorants.
- d) It is used as anti-viral.



## METHOD OF PREPARATION OF HERBAL COUGH SYRUP:-

### ➤ Preparation of Extract By Decoction method:-

Weigh accurately each ingredients except honey



Ingredients are mixed using 500ml water in round bottom flask



flask attach to the reflex condenser and mixed material was boil under carefully by using water bath for 3 hrs.



Boil untill total volume become one forth part of solution



Then liquid extract was cooled and filtered.

➤ **Preparation final cough syrup:-**

To prepared final cough syrup 45% of honey was mixed slowly side by side continuous stirring in decoction solution.



Herbal cough syrup was prepared and use for cough.

❖ **Formulation Table:-**

S. No.	Ingredients	Quantity Taken (For 100MI)
1.	Marshmallow Root	2gm
2.	Elecampane Root	3gm
3.	Ivy Leaf	1gm
4.	Elderberry	2gm
5.	Vasaka	3gm
6.	Pineapple	8gm
7.	Cinnamon	2gm
8.	Thyme	2gm
9.	Honey	45%



## EVALUATION OF HERBAL COUGH SYRUP:-

Test	Procedure
Colour	<ul style="list-style-type: none"> <li>▪ 5 ml of prepared syrup was taken on a watch glass</li> <li>▪ Watch glass placed against white background in white tube light.</li> <li>▪ Colour was observed by naked eyes</li> </ul>
Odour	<ul style="list-style-type: none"> <li>▪ 2ml of prepared syrup was taken &amp; smelled by individually.</li> <li>▪ Time interval between 2 smelling was 2 minutes to nullify effect of previous smelling.</li> </ul>
Taste	<ul style="list-style-type: none"> <li>▪ A pinch of final syrup was taken and examined on tastebuds of the tongue.</li> </ul>
pH	<ul style="list-style-type: none"> <li>▪ 10 ml of prepared syrup taken in 100 ml of volumetric flask.</li> <li>▪ Make up volume to 100 ml with dist. water.</li> <li>▪ Sonicated for 10 minutes.</li> <li>▪ pH was measured by using digital pH meter.</li> </ul>

Viscosity	<ul style="list-style-type: none"> <li>The viscosity of formulation was determined by using Ostwald's U-tube viscometer.</li> </ul>
Density	<ul style="list-style-type: none"> <li>Density of formulation was determined by using density bottle.</li> </ul>
Moisture content	<ul style="list-style-type: none"> <li>1. Weigh 2 grams of the sample and place it in a petri dish.</li> <li>2. Heat it in a hot air oven at 100°C for one hour.</li> <li>3. Then allow it to cool and weigh the Sample once again.</li> </ul>
Determination of ethanol extractive value	<ul style="list-style-type: none"> <li>Take 5gm of air-dried and coarsely powdered drug and macerate it with 100ml of 95% ethanol in a closed flask for 24 hours. 2. Shake the mixture frequently for the first 6 hours and then leave it to stand for 18 hours. 3. Filter the mixture rapidly. 4. Take 25ml of the filtrate and evaporate it to dryness in a flat-bottomed petri dish. 5. Dry the sample at 105°C and weigh it. 7. [17,18]</li> </ul>
Determination of Water extractive value	<ul style="list-style-type: none"> <li>1. The process involves the maceration of 5 grams of air-dried, coarsely powdered drug with 100ml of a mixture of chloroform and water in a closed flask for 24 hours.</li> <li>2. Shake the mixture frequently for the first 6 hours, and then let it stand for 18 hours.</li> <li>3. Filtrate the mixture and evaporate 25ml of the filtrate to dryness in a flat-bottomed petri dish.</li> <li>4. Dry the residue at 105°C and weigh it</li> </ul>

## CONCLUSION

Respiratory tract disorders such as cold and cough are common symptoms with a variety of underlying causes. If left untreated, they can lead to serious diseases. However, proper diagnosis and treatment can cure the problem using different types of medicinal drugs that are commonly available alone or in combination. The preformulation studies for all formulations were within specifications. Additionally, the physicochemical properties of the prepared syrup, such as color, odor, pH, and taste, were satisfactory. However, among all three formulations, one was within all specifications, had the proper concentration of honey as per IP, and also had a good preservative. This present study aims to develop an effective and safe herbal cough syrup with 40% w/v honey as a base.

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