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REVIEW ON HERBAL COUGH SYRUP

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INTRODUCTION

Coughing is a natural reflex that occurs when there is an obstruction or irritation in the throat or upper respiratory tract. It is a sudden and repetitive process that serves to clear the airways of irritants, secretions, foreign particles, and microorganisms. While coughing is generally considered normal and beneficial in keeping the throat clear, persistent coughing may indicate an underlying health condition. The cough reflex involves three phases, including an inhalation, a forced exhalation against a closed glottis, and a forceful release of air from the lungs, which is often accompanied by a distinct sound.

Frequent coughing can be caused by a variety of factors, including respiratory tract infections like the common cold, flu, acute bronchitis, pneumonia, and pertussis, as well as health issues such as asthma, tuberculosis, and lung cancer. Typically, coughs that persist for under three weeks are associated with the common cold. It's worth noting that pertussis, also known as whooping cough, is becoming more commonly recognized as a cause of prolonged coughing in adults.

- **Types of coughs**

Mainly there are two types of coughs, which are classifies as follows

A. Wet cough

B. Dry cough

- ***Wet cough***

1. Nonproductive cough.

2. It expels secretion mucous or foreign Material from respiratory tract.
3. The main purpose of wet cough is to remove the foreign matter

- ***Dry cough***

1. Productive cough.
2. It expels secretion or mucous from lungs.
3. Dry cough is chronic in nature and it caused by dry irritation

Classification of cough

The most common respiratory ailments are the common cold and cough, followed by whooping cough, asthma, nosebleed, and bronchitis. Medicinal plants can be used to treat these ailments. The treatment of cough in children is based on the underlying cause. In half of the cases, children's cough goes away without treatment within 10 days, and 90% of cases resolve within 25 days. In some cases, antibiotics or inhaled corticosteroids may be prescribed to treat protracted bacterial bronchitis or asthma in children with chronic cough.

Advantages of herbal medicine

1. Safe to use
2. Affordable
3. No known side effects

Disadvantages of herbal medicines

- Adverse Drug Reactions (ADRs) with Prescription Drugs

1. Regular use of antidepressants can cause the adverse effects when combined with herbal medicines.
2. There is low risk of self-dosing with herbs when using them as medicines.

- **Patients**

The Herbal medicines are natural products that may take time to show their effectiveness as they are not optimized in the laboratory.

List of herbal ingredients

1. Tulsi

Tulsi consist fresh and dried leaves of ocimum sanctum Family lamiaceae

Uses

1. They Relieves chest congestion
2. Act as Antimicrobial

2. Turmeric

Turmeric obtain from dried rehizome of curcuma longa Family Zingiberaceae.

USES

1. Anti allergic
2. Anti inflammatory

3. Fennel

Fennel it is obtain from the dried ripe fruit of Foeniculum vulgare Family Umebelliferae.

Fennel contains a mix of antimicrobial components and anti-inflammatory volatile oils, which used alleviate the risk of cold, cough and flu and provides immediate relief.

Uses

1. Is used as carminative, flavoring agent.
2. It is also used for upper respiratory tract infections, coughs, bron

4. Adulsa

Adhatoda vasica has some types of biological activities includes antioxidant, anti-inflammatory, immunomodulating, antispasmodic and antiallergic properties, and used as a cough suppressant. Arabinogalacatan samples extracted from the plant showed 67% cough suppression.[12] vasica is a similar to codeine against coughing produced by irritant aerosols.

Uses

Adulsa cough syrup is non –narcotic formulation that gives instant and safe relief from

1. Bronchitis
2. Chest congestion

5. Clove

Cloves are aromatic flower buds of a tree belonging to the Myrtaceae family, with antibacterial properties. They can help alleviate pain caused by coughing and sore throat.

Uses

1. Cloves are used as an expectorant
2. Relieve itchy feeling during dry cough

Methods of prepartion

Sr. no.	Test	Procedure
1	Moisture content	1. Weigh 2 grams of the sample and placeit in a petri dish. 2. Heat it in a hot air oven at 100°C forone hour. 3. Then allow it to cool and weigh the Sample once again.
2	Determination of ethanol extractive value	1. 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 for18 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]
3	Determination of Water extractive value	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 for24 hours. 2. Shake the mixture frequently for thefirst 6 hours, and then let it stand for 18 hours. 3. Filtrate the mixture and evaporate 25ml of the filtrate to dryness in a flat-bottomed petri dish. 4. Dry the residue at 105°C and weigh it

Evaluation of formulation

Please follow the instructions below for the examination of the syrup

Colour examination

1. Take 1.5ml of the prepared syrup and place it on a watch glass.
2. Put the watch glass against a white background under a white tube light.
3. Observe the colour of the syrup with naked eyes.

Odour examination

1. Take 2ml of the prepared syrup and smell it individually.
2. Wait for 2 minutes before smelling again to nullify any effect of previous smelling.

Taste examination

1. Take a pinch of the final syrup and examine it on your tongue's taste buds. pH Determination:

1. Take 10ml of the prepared syrup and put it in a 100ml volumetric flask.
2. Add distilled water to make the volume up to 100ml.
3. Sonicate the solution for 10 minutes.
4. Measure the pH by using a digital pH meter.

Viscosity determination

1. Determine the viscosity of each formulation using an Ostwalds U-tube Viscometer.

Preparation of liquid oral

The liquid oral is prepared using two methods: Decoction and Maceration

- **Decoction Method of preparation**

1. Take 5-7gm of each herbal ingredient.
2. Mix the herbs with 500ml of water.
3. Attach a reflux condenser and boil the mixture carefully using a water bath for 3 hours.
4. Boil until the total volume reduces to one-fourth of the previous volume.
5. Cool the liquid and filter it.

- **Maceration method of preparation**

1. Take 35ml, 40ml, and 45ml of honey.
2. Mix 1.75gm, 2gm, and 2.25gm of ginger with 35ml, 40ml, and 45ml of honey in a beaker and pack it with aluminum foil.
3. Let the beaker stand at room temperature for 24 hours.
4. After 24 hours, filter the preparation and use the filter as the final oral form.

- **Final herbal cough syrup**

1. To make cough syrup, add 35ml of mash of ginger with honey and mix 25ml of decoction slowly with continuously stirring.
2. Again, mix 40ml and 45ml of macerated ginger with honey and add 15ml and 20ml of

decoction slowly while continuously stirring.

3. The herbal cough syrup is now ready. Check the solubility by observing the clarity of the solution visually. The liquid oral is prepared using two methods: decoction and maceration.

- **Decoction meathod of preparation**

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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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