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## International Journal of Multidisciplinary Research in Science, Engineering and Technology (IJMRSET)

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# Formulation & Evaluation of Herbal Cough Syrup for Controlling Cough

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**ABSTRACT:** The most common problem suffered by individuals everywhere over many centuries is cough. Coughing is the protective mechanism of the body. Coughs are classified further accordingly which are depending upon factors such as signs and symptoms, duration, type, character, etc. Most commonly used, prepared and popular dosage form to cure cough and cold is syrup. The most preferred dosage form to cure cough is herbal syrup, which is used mostly due to its benefits over synthetic syrups. Medicinal plants are used as primary health care agents, mostly in Asian countries. Ingredients showing expectorant antitussive activity are used. Hereby cough and herbal treatments associated with cough are studied briefly. The herbal cough syrup is studied which is liquid dosage form, it is easy to administer than solid dosage form and is more effective and fast acting in order to cure cough. Method of preparation of cough syrups were discussed.

**KEYWORDS:** Cough, Syrup, Herbal Syrup, Medicinal Plants, Expectorant & Antitussive.

## I. INTRODUCTION

Another name for “Cough” is “tussis”, the voluntary or involuntary act which clears the throat & breathing passage of foreign particles, microbes, irritants, fluids and mucus is nothing but cough. It is the rapid expulsion of air from lungs. When we have blockage or irritation in the throat or upper air passage, the brain thinks a foreign element is there in body and it inform body immediately to cough to expel out foreign element out of our body. The cough reflex consists of the 3 phases which are an inhalation, a forced exhalation against a closed glottis, and a violent release of air from the lungs following opening of the glottis, and followed by a distinctive sound. It is symptom related to most respiratory problems such as asthma, viral infections, lung cancer, tuberculosis, pulmonary embolus. The repetition of coughing produces inflammation and discomfort, which result in more coughing in individual. Respiratory tract infections are mostly common in children; some of them are self-limiting and the risk of complication may be very small.

### Types of Cough

The four main types of coughs are:

1. Wet
2. Dry
3. Paroxysmal
4. Croup

#### 1. Wet cough

This kind of cough sounds wet because it brings up mucus.

#### 2. Dry cough

A dry cough feels like a tickle in the back of your throat. It usually does not bring up mucus. Dry cough can be caused by inflammation in your respiratory system.

#### 3. Paroxysmal cough

A paroxysmal cough is violent & uncontrolled coughing that is painful. You may struggle to breathe and may even vomit.

#### 4. Croup cough

Croup is a viral infection that causes irritation & swelling in the airway, making it difficult to breathe. Croup usually affects children 5 & younger. Croup usually does not impact adults whose airways are larger than a child's.





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### II. MATERIAL & METHOD

Herbal parts are use in formulation of herbal syrup for treatment of cough as shown in Table 1 and fig. 1.

**Table 1:** List of Ingredients used for herbal cough syrup.

S. No.	Ingredient	Use
1	Ginger	Antitussive, Expectorant
2	Liquorice	Expectorant
3	Tulsi	Antitussive, Expectorant
4	Cinnamon	Aromatic, Expectorant
5	Turmeric	Antitussive
6	Cardamom	Aromatic, Flavouring Agent
7	Honey	Base, Viscosity modifiers, Sweetener
8	Peppermint	Pain reliever
9	Adulsa	Antitussive
10	Clove	Expectorant



**Figure 1:** Herbal ingredients used for preparation for herbal cough syrup.



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### Materials

Ginger, Liquorice, Cinnamon, Cardamom, Peppermint, Adulsa & Clove was procured from Online Grocery App. Amazon. Tulsi Leaves was procured from Parijat College of Pharmacy. Turmeric & Honey was procured from local grocery store Dmart.

### III. METHOD

**Preparation of Herbal Cough Syrup:** Herbal cough syrup was prepared by using decoction method. Procedure of herbal cough syrup preparation are as follows:

Firstly take the required quantity of each herbal ingredients in RBF. Then add water in RBF upto 250 ml. Attach the soxhlet assembly and boil material carefully by using heating mental for 6 hrs. Then the liquid was colled & filter out. Then prepared syrup were taken out from RBF & stored in air tight container.

### Formulation

Three formulation of herbal cough syrup were prepared as shown in **Table 2**.

**Table 2:** List of herbal ingredients with quantity.

S. No.	Ingredients	Formulation 1	Formulation 2	Formulation 3
1	Ginger	2.5 gm	3 gm	3.5 gm
2	Liquorice	2 gm	2 gm	2 gm
3	Tulsi	17 leaves	20 leaves	23 leaves
4	Cinnamon	1 gm	1 gm	1 gm
5	Turmeric	1.5 gm	1.5 gm	1.5 gm
6	Cardamom	2gm	2.5 gm	3 gm
7	Honey	17 ml	20 ml	25 ml
8	Peppermint	1 gm	2 gm	3 gm
9	Adulsa	1.5 gm	1.5 gm	1.5 gm
10	Clove	1 gm	1 gm	1 gm

### Evaluation Parameters

#### 1.Colour examination

2 ml syrup was taken in a test tube. Then colour was observed in the presence of light.

#### 2. Odour Examination

2 ml prepared syrup was taken in a test tube. Then smelled by an individual. The time interval between two smelling is 2 min.

#### 3.Taste Examination

A pinch of final syrup was taken & was examined on taste buds of the tounge.



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### 4.pH Determination

10 ml of prepared syrup was taken in 50 ml beaker. Makeup volume upto 50 ml with water. Mix it properly then pH was measured using pH paper.

### Result & Discussion

**Table 3** Physicochemical parameters of formulated herbal cough syrup.

Formulation	Colour	Odour	Taste	pH
F1	Yellowish brown	Aromatic	Sweet	6
F2	Yellowish brown	Aromatic	Sweet	6
F3	Yellowish brown	Aromatic	Sweet	6

### IV. CONCLUSION

This project was a journey to create a natural solution for a common problem we've all faced: coughing. As we delved into the world of coughs, we discovered the different types, what causes them, and how they can impact our daily lives.

We also explored the world of herbal treatments and were impressed by their effectiveness and minimal side effects. In contrast to conventional treatments, herbal remedies offer a safer and more accessible alternative. Our study focused on developing a herbal cough syrup, putting it through rigorous testing to ensure its quality and effectiveness. We're excited to share our findings, which show that our herbal cough syrup is a game-changer compared to traditional chemical-based options. This project has not only helped us understand coughs better but also empowered us to take control of our health naturally.

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