IJNRD.ORG ISSN : 2456-4184
INTERNATIONAL JOURNAL OF NOVEL RESEARCH AND DEVELOPMENT (IJNRD) | IJNRD.ORG
An International Open Access, Peer-reviewed, Refereed Journal

Review On Herbal Cough Syrup

[1]Saloni singh, [2]Himanshu sharma, [3]Dr.(prof) Kshitij Agrawal
[1]Student, [2]Assistant Professor, [3]Director
[1]Pharmacy Department
[1]Hari college of Pharmacy, Saharanpur, India

ABSTRACT:

Coughing, a natural reflex to expel irritants from the respiratory tract, is often a symptom of a wide range of conditions such as respiratory infections, asthma, and allergies. While acute coughs usually resolve with minimal treatment, persistent or chronic coughs can significantly impair the quality of life, prompting individuals to seek effective remedies. Despite the widespread use of synthetic drugs for treating cough, concerns about side effects and long- term use have led to increased interest in alternative, natural treatments. Herbal cough syrups, derived from plants with well-established therapeutic properties, offer a promising alternative to chemical-based medications. This study focuses on the development, formulation, and evaluation of a herbal cough syrup, integrating medicinal plants known for their cough-relieving and respiratory health benefits. In this research, several plant species with proven efficacy in treating coughs were selected, including Ocimum sanctum (Holy Basil), Adhatoda vasica (Malabar Nut), Zingiber officinale (Ginger), Glycyrrhiza glabra (Licorice), and Piper longum (Indian Long Pepper). These plants are traditionally used in various systems of medicine for their expectorant, anti- inflammatory, antimicrobial, and soothing properties, making them ideal candidates for the development of an effective herbal formulation. The combination of these herbs is expected to provide a synergistic effect, enhancing therapeutic outcomes by addressing multiple aspects of cough and respiratory discomfort. The study further evaluated the microbiological quality of the syrup through rigorous testing to ensure the formulation was free from pathogenic microorganisms. Microbial safety was a key concern in the development of herbal products, and the syrup was tested for contamination risks. The syrup was also well-tolerated with no observed side effects, indicating a high level of safety for consumption.

Keywords: Herbal Cough Syrup, Medicinal Plants, Expectorants, Holy Basil.

INTRODUCTION:

Coughing is a natural protective reflex that occurs in response to irritation or blockage within the throat or upper respiratory tract. This sudden and often repetitive action helps to expel mucus, irritants, foreign particles, or pathogens from the airways, thereby maintaining respiratory hygiene. Although coughing is typically a normal and helpful response, persistent or chronic coughing can be symptomatic of an underlying medical condition that requires attention. The mechanism of the cough reflex is comprised of three distinct phases: a deep inhalation, a forced exhalation against a closed glottis, and the sudden release of air through the lungs, which often produces a recognizable sound. Coughing may be triggered by several causes, most commonly respiratory infections such as the common cold, influenza, acute bronchitis, pneumonia, and pertussis (whooping cough).

- **Types of Cough**

Coughs are primarily categorized into two types based on their characteristics:

a. productive (Wet) Cough

b. Non-Productive (Dry) Cough

a. Productive (Wet) Cough:

1. This type of cough involves the expulsion of mucus or phlegm from the respiratory tract, helping to clear the lungs and airways. It is often seen in cases of infections or conditions where mucus production is elevated.

2. Wet cough assists in the elimination of mucus, secretions, or foreign particles from the respiratory tract.

3. Its primary function is to clear the airways by expelling accumulated substances or irritants.

b. Non-Productive (Dry) Cough

1. Unlike wet cough, a dry cough does not produce mucus or phlegm.

2. It typically arises from irritation in the throat or lungs rather than the presence of excess secretions.

3. Dry coughs are often persistent and may be associated with chronic conditions or exposure to environmental irritanant

Classification of Cough

Among respiratory disorders, the most frequently observed conditions include the common cold, persistent cough, asthma, whooping cough, nosebleeds, and bronchitis. Many of these conditions can be effectively managed using medicinal plants with therapeutic properties. In pediatric cases, the approach to cough treatment depends on the root cause. Research indicates that approximately 50% of children experience spontaneous relief from cough within 10 days, and about 90% recover within 25 days without requiring specific treatment. However, in cases of prolonged cough due to bacterial bronchitis or asthma, healthcare providers may recommend antibiotics or inhaled corticosteroids.

Benefits of Herbal Medicine:

1. Generally safe for regular use.

2. Cost-effective and accessible.

3. Minimal or no known adverse effects

Limitations of Herbal Medicine

- **Interactions with Conventional Medications**

1. Concurrent use of certain prescription drugs, such as antidepressants, may lead to undesirable interactions with herbal remedies.

2. Although the risk is relatively low, unsupervised self-dosing can sometimes lead to inconsistent outcomes or mild side effects.

Patient Considerations:

- Herbal formulations are derived from natural sources and may act more slowly than synthetic drugs, as they are not chemically optimized or standardized in laboratories.\

Common Herbal Ingredients Used in Cough Remedies

1. Tulsi (Holy Basil)

Tulsi refers to the fresh or dried leaves of Ocimum sanctum, belonging to the family Lamiaceae. It is well-regarded in traditional medicine for its antimicrobial, anti-inflammatory, and soothing properties, making it a common component in herbal cough preparations.

Uses

1. Helps in relieving chest congestion.
2. Possesses antimicrobial properties.

Turmeric (Curcuma longa)

Turmeric is derived from the dried rhizomes of Curcuma longa, a plant belonging to the family Zingiberaceae.

Therapeutic Uses:

1. Exhibits anti-allergic effects.
2. Acts as a potent anti-inflammatory agent.
3. ***Fennel (Foeniculum vulgare)***

Fennel is obtained from the dried, mature fruits of Foeniculum vulgare, which belongs to the family Umbelliferae. It contains a blend of antimicrobial compounds and anti-inflammatory volatile oils. These constituents make fennel effective in reducing the symptoms of cold, cough, and flu, often providing quick symptomatic relief.

Uses:

1. Functions as a carminative and is widely used as a flavoring agent.
2. Beneficial in the treatment of upper respiratory tract infections, coughs, and bronchial conditions.

4. Adulsa (Adhatoda vasica)

Adhatoda vasica exhibits a range of therapeutic properties, including antioxidant, anti-inflammatory, immunomodulatory, antispasmodic, and antiallergic effects. It is commonly employed as a natural cough suppressant. Research indicates that arabinogalactan compounds extracted from the plant can suppress coughing by up to 67%. Studies have shown that its effectiveness is comparable to that of codeine in treating

coughs induced by irritant aerosols.

Uses:

Adulsa-based cough syrups are non-narcotic formulations that provide rapid and safe relief from:

1. Bronchitis
2. Chest congestion

5. Clove (Syzygium aromaticum)

Clove consists of the aromatic flower buds of a tree belonging to the Myrtaceae family. Known for its antibacterial properties, clove is effective in relieving throat discomfort and reducing pain associated with coughing and sore throat.

Uses:

1. Acts as a natural expectorant, helping to clear mucus from the respiratory tract.
2. Provides relief from throat irritation and itching commonly associated with dry cough.

Methods of Preparation and Evaluation:

1. Determination of Moisture Content

- Accurately weigh 2 grams of the sample and transfer it into a clean, dry petri dish.
- Place the petri dish in a hot air oven at 100°C for 1 hour.
- After heating, allow the sample to cool in a desiccator.
- Reweigh the sample and calculate the moisture content based on the weight loss.

2. Determination of Ethanol-Soluble Extractive Value

- Weigh 5 grams of coarsely powdered, air-dried sample.
- Macerate with 100 ml of 95% ethanol in a closed container.
- Shake the mixture regularly for the first 6 hours, then let it stand undisturbed for 18 hours.
- Filter the mixture quickly after 24 hours.
- Take 25 ml of the filtrate and evaporate it to dryness in a flat-bottomed petri dish.
- Dry the residue at 105°C and weigh it to determine the ethanol extractive value

3. Determination of Water-Soluble Extractive Value

- Take 5 grams of coarsely powdered, air-dried drug.
- Macerate with 100 ml of a water-chloroform mixture in a closed container.
- Shake the solution intermittently for the first 6 hours, then allow it to stand for 18 hours.
- Filter the solution after 24 hours.
- Measure 25 ml of the filtrate and evaporate it to dryness in a flat- bottomed petri dish.
- Dry the residue at 105°C and weigh it to obtain the water extractive value.

CONCLUSION:

Cough and cold are frequent symptoms associated with various respiratory conditions, and if not managed appropriately, they may progress into more serious health issues. Timely and accurate diagnosis, followed by suitable treatment using medicinal agents—either individually or in combination—can effectively address these ailments. In this study, all formulations met the required criteria during preformulation assessments. The prepared herbal syrups demonstrated acceptable physicochemical characteristics, including favorable color, aroma, pH, and palatability Out of the three formulations tested, one stood out by meeting all standard parameters. It contained an optimal amount of honey in accordance with Indian Pharmacopoeia (IP) guidelines and incorporated an effective preservative. The objective of this research was to formulate a reliable and safe herbal cough syrup using hone. at a concentration of 40% w/v as the base, and the findings suggest promising potential for its therapeutic application. Among various respiratory tract conditions, cold and cough are the most common symptoms and can arise due to multiple causes. If left untreated, these seemingly mild symptoms may progress into more serious illnesses. Timely and accurate diagnosis, followed by appropriate medicinal treatment—either through individual or combined drug therapy—can effectively manage these issues. In this study, all preformulation evaluations of the developed formulations were found to be within acceptable limits. The physicochemical parameters of the herbal cough syrups, including color, odor, pH, and taste, met the required standards. Among the three formulations developed, one in particular met all specified criteria, with

an optimal concentration of honey as per Indian Pharmacopoeia standards, along with the inclusion of an effective preservative.

REFERENCE:

[1]. Chung KF, Pavord ID. Prevalence, pathogenesis and causes of chronic coughs. Lancet 371 (9621), 2008, 1364-74.

[2]. Irwin RS, Glomb WB, Chang AB. Habit cough, tic cough and psychogenic cough in adult and pediatric populations: ACCP evidenced-based clinical practice guidelines. Chest 129 (1 Suppl), January 2006, 174S–179S.

[3].Thompson M, Vodicka TA, Blair PS, Buckley DI, Heneghan C, Hay AD. Duration of symptoms of respiratory tract infections in children: systematic review BMJ (Clinical research ed.) 347, 2013, f7027

[4]. Dicpinigaitis PV, Colice GL, Goolsby MJ, Rogg GI, Spector SL, Winther B. Acute cough: a diagnostic and therapeutic challenge, Coughs 5, 2009, 11.

[5]. Houghton LA, Lee AS, Badri H, DeVault KR, Smith JA. Respiratory disease and the oesophagus: reflux, reflexes and microaspiration. Nat Rev Gastroenterol Hepatol. Aug;13(8), 2016, 445-60.

[6]. Goldsobel AB, Chipps BE. Cough in the pediatric population. J. Pediatr. 156(3), 2010, 352–358.

[7]. Rhee CK, Jung JY, Lee SW, Kim JH, Park SY, Yoo KH, et. al.,. The Korean Cough Guideline: Recommendation and Summary Statement. Tuberc Respir Dis (Seoul). 79(1), 2016, 14-21.

[8]. Anu kaushik Vivek, Chauhan and Dr. Sudha, Formulation and Evaluation of Herbal Cough Syrup. European Journal of Pharmaceutical & medical Research, 2016; 3(5): 517-522.

[9]. Gibson PG, Ryan NM. Cough Pharmacotherapy. Current and Future Status. Expert Opin. Pharmcather, 12, 2011, 1745-1755.

[10]Motuma Adimasu Abeshu and Bekesho Geleta, "A Review "Medicinal Uses of Honey", Biology and Medicine, (Aligarh) 2016, 8:2

[11]. Meenakshi Parihar, Ankit Chouhan, M.S. Harsoliya, J.K.Pathan, S. Banerjee, N.Khan, V.M.Patel, " A Review- Cough & Treatments", International Journal Of Natural Products Research, May 201112.

(12). Joy PP. Thomas T, Samuel M. Baby PS, Medicinal plants, In Piper longum Kerala Agricultural University, India, 1998, 44-45.

(13). Kokate CK. Purobu AP, Gokhle SB Text book of Pharmacognosy 29th ed. Pune Nirali Prakashan, 2004 P 324,348-349.

(14). Kokate CK. Purohit AP, Gokhle SB Text book of Pharmacognosy 29th ed. Pune Niral Prakashan, 2004 P 212-216, 258.

(15). Sunilson J. Anita Gnana kumari AV. Jisha J. Varatharajan R. Jayaraj P. John Thomase, Formulating and screening of herbal wound healing ointment. Adv. Pharmacol Toxicol.. 2008, 9(2), 1-7.

(16). Anonymous: The Indian Pharmacopoeia, 3 ed. The Controller of publication, Delhi. 1985 P. 500.

[17]Thompson M, Vodicka TA, Blair PS, Buckley DI, Heneghan C, Hay AD, "Duration of symptoms of respiratory tract infections in children: systematic review", BMJ, 2013.

18]. Ken Harris, "When a cough may be more than just a cough", OSF healthcare, Jan 2021

19]Patil A.G, Mirajakar K J, Savekar P.L, Bugaditkattikar C.V, Shintre S.S, "Formulation and Evaluation of Ginger Macerated Honey Base Herbal Cough Syrup", International Journal of Innovative Science and Research Technology, 2020, 5(6): 582-588.

20] Herbycin, Types of Coughs, April,2020

21] Kalpesh B Vaishnav, “Diagnostic Approach to Cough”, Supplement to Journal of theAssociation of Physicians of India, 2013, vol. 61