# Formulation and Evaluation of Cough Syrup

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**Abstract: An ancient time peoples use various plant, roots, and leaves for treatment various disease. Herbal cough syrup is an Ayurveda medicine which is useful in many chronic health problem such as cough, cold, fever, respiratory infection and disorders among human. As a combination of herbs, it is safe, can be made at home, has a low production cost, and can be easily available in any area. Herbal syrup including natural herbs, like tulsi, clove, fennel, turmeric and adulsa which have various action and effect on reducing acute or chronic cough and cold and act as cough suppressant having expectorant and anti-tussive property. In this research, I conclude about herbal cough syrup that, herbal cough syrups is a safest herbal medicine which is use for treatment of cough and cold. There are wide range of Synthetic cough syrup available in the market with different functions, but there synthetic cough syrup Show harmful effect on the body. Such as confusions, hallucinations, trouble urinating. Due to there Reasons cough syrup has evolved as an alternative to synthetic cough syrup because of the safe and Traditionally used ingredients. The natural herbal syrup was formulated by adding the extracts of Adhatoda vasica nees. Syzygium aromaticum, Vasicine, Vasicol, and Vasinone, Sugar, Alcohol, Orange Peel Constituents. It may also act as a bronchodilators nad as an expectorant. Adhatoda Vasica Nees, Leaves extract is a traditional medicine and reported to use in the management of cough. The vasaca Plant may have properties such as antimicrobial, antibacterial, anti inflammatory, antiasthmatic, Anticancer, antituberculars, antioxidants. Vasaka leaves have the potential to provide compounds with Strong antitussive efficacy and little side effectsAllowing for treatment of expectorants, particularly dose And monitoring of unwanted effects. Hence, the results of the present study indicted the Cooperative Effect of vasaca leaves in the management of cough aversions.**

**Keywords: Grinding, Extraction, Anti-microbial activity.**


Fig No: 1 Herbal Cough Syrup

## 1. INTRODUCTION

Herbal medicine is also known as phyto-medicine or herbalism it is a medicine that useplants or their crude products for the treatment of diseases. It may include also animal fungi or bacteria product. Since ancient era, herbal or plant-based medicines has been used for the prevention, cure & mitigation of diseases and time to time more and more herbal constituents of these natural sources are get enhanced. Herbal medicine has its origins in ancient cultures. It involves the medicinal use of plants to treat disease and enhance general health and wellbeing. Some herbs have potent (powerful) ingredients and should be taken with the same level of caution as pharmaceutical medications.

In fact, many pharmaceutical medications are based on man-made versions of naturally occurring compounds found in plants. For instance, the heart medicine digitalis was derived from the foxglove plant. Herbal medicine aims to return the body to a state of natural balance so that it can heal itself. Different herbs act on different systems of the body . A bacterial, viral, or fungal infection can result in inflammation and fluid in the lungs, which is known as a coug It can induce fever and make breathing difficult. Your body produces a cough as a reaction to irritation of the throat or airways. An irritant causes your nerves to fire, sending a signal to your brain. Vasaca cough syrup is typically a sweetened beverage that contains cough suppressant medication. In India, the number of people suffering from asthma is rising daily for a variety of manmade or environmental factors. A chronic lung condition that affects people of all ages is asthma.It is brought on by inflammation and constriction of the muscles around the airways, which makes coughing symptoms more difficult to exhale.Thyme, a vasaca plant, has expectorant and antispasmodic properties that help loosen mucus in the bronchi and soothe coughs. Adhatoda vasica leaves are utilised as bronchodialators and expectorants because they contain vasicine, vasicinone, 6-hydroxy vasicine, and adhatodic acid.

Eugenol, β- Caryophylene, and α-Humlene are found in Syzygium aromaticum fruit. Eugenol acetate is used to treat respiratory infections, including asthma, and cough. These are all used to treat coughs, skin infections, and skin eruptions. Coughing may be caused by the respiratory tract.This article's goal is to present, via analysis and research, the role that Vasaca leaves play in managing cough aversions. A cough is a sudden and often repetitively occurring process which helps to clear the large breathing passages from secretions, irritants, foreign particles and microorganisms. . When there is a blockage or irritation in the throat or upper air passage, the brain thinks a foreign element is present and tells the body to cough to remove that element. Generally coughing is perfectly normal. A cough can help to keep your throat clear from phlegm and other irritants. However, sustained coughing can also be symptomatic of a number of conditions. The cough reflex consists of three phases: an inhalation, a forced exhalation against a closed glottis, and a violent release of air from the lungs following opening of the glottis, usually accompanied by a distinctive sound. Coughing is either voluntary or involuntary. It is one of the most common health problems. Coughing can also be due to a respiratory tract infection such as the common cold, acute bronchitis, pneumonia, pertussis, flu and smoking or health problems such as asthma, tuberculosis and lung cancer. In the vast majority of cases, acute coughs, i.e. coughs shorter than three weeks, are due to the common cold. Pertussis is increasingly being recognized as a cause of troublesome coughing in adults.

## 2. PHARMACOPOEIAL DEFINITION

Herbal Drug:
flavoring medicines area unit those with active ingredients made up of plant components, like leaves, roots or flowers are known as herbal drug.

Raw material:
The flavouring materials are the raw elements. Plant parts such as roots, rhizomes, bark, seeds, fruits, leaves, flowers, and stems are sources of flavour ingredients. how much the raw ingredients are worthis supposed to refer to the amount of the flavouring preparations' active components are known as Raw material .

Herbal formulation:
A dosing form that contains 1 or more herbs, processed herbs, or both is referred to as a herbal formulation merely supplying certain organic processes, aesthetic edges intended for use in identifying and treating, reduce the severity of human or animal diseases, or change.

Meaning of quality in terms of herbal drug:
The Quality of the herbals is altered by various physical, chemical, and geographical aspects which contribute to the quality of these materials. Apart from that, adulteration is also an increasing concern when it comes to herbal material quality. Various chemical and phytochemical test, analytical techniques, and hyphenated analytical techniques are used for determining the quality aspects of the herbal materials in the herbal pharmaceuticals. Quality is of prime concern to human beings in all aspects of life. When it comes to the quality of the pharmaceuticals which are consumed by humans, it is of almost important as they are used for the human wel being of the human kind. There are stringent guidelines and regulation for the quality control of the synthetically synthesized chemical pharmaceuticals. They have to undergo various tests and quality control checks before being marketed and consumed by the patients and consumers .Herbal medicinal products are the ones which areobtained from the plant resources for the treatment and wellbeing of mankind. It is very much essential that even the quality of the herbal medicines is being controlled as that of the chemically synthesized medicines Quality can be defined as the they can be determined by identity, purity, content and other chemical, physical, or biological properties of the drugs or by the manufacturing processes. Quality of herbal drugs is the sum of all factors that contribute to the safety, effectiveness, and acceptability of the product. Quality control is important for the safety.

Quality in Terms of Herbal Drugs :

1. The standing of a medicine is defined as its identity, purity, content, and other chemical, physical, or biological features, as well as the manufacturing techniques.
2. Genesis, Quality, safety, effectiveness, and consistency (QSEC) should be supported when using herbal remedies, phytotherapeuticals, and nutritional supplements.
3. Prior to the invention of salicylate in 1899, ancient medicine served as the only type of drug

based therapeutic method in a number of regions of the world

4. Approximately 50,000 biologically active plants are identified worldwide over time. The world Health Organization has acknowledged this desire for a degree-based evidence base for all elements of old for numerous years (2002-2005, 2012), publications have made it obvious that the adoption of the introduction of traditional medicine (TM) into the nervous system needs to be supported by QSEC. The nutritional supplements and flavouring food-based pharmaceutical products have emerged as popular trends.
5. Intensifying police inquiry and surveillance.

## 3. FACTORS AFFECTING QUALITY OF HERBALS

I. Atmospheric Factors:

1. Exogenous Factors :

Climate and Light: Plant should be cultivated in conditions which are similar to the plant's natural habitat. Hence climate that is temperature, rainfall and length of day, plays an important role in the growth of plants. Different crops require different climatic patterns. Most of the plants can grow well in sunny, dry conditions.

Latitude and Altitude: The effect of latitude is important in fat producing plants. Tropical plants (palm oil, cocao butter) contain mainly saturated fatty acids, while the subtropical plants give a larger amount of unsaturated acids. The olive, almond and sesame oils are predominant in oleic acid. The plants of temperate zones (Cottonseed, sunflower) also contain more unsaturated acids. Peanut and olive trees grown in the subtropics have a higher unsaturated fat content.

Endogenous Factors:- Genetic factors:

(1) Morphological markers, which themselves are phenotypic traits or characters.
(2) Biochemical markers, which include allelic variants of enzymes called isozymes.
(3) DNA markers, which reveal sites of variation in DNA. They are of three types: RFLP (Restriction Fragment Length Polymorphism), polymerease chain reaction based on RAPD (Random Amplified Polymorphic DNA) and DNA sequence based on SNP (Single Nucleotide Polymorphism).

Human Factors:

Labours: All farms need either human labour or machinery to do the work. Some farm types use very little labour, e.g. sheep farming. Others require a large labour force, e.g., rice farming in India.

Market: This is the customer who buys farm produce. Farmers need to sell their crops and animals to make a profit. Perishable crops such as soft fruits fetch a high price, but need to be grown with a short travelling distance of the market.

Finance: Profits are used to pay the wages and to re-invest in the farm e.g., buying seeds, fertilizer, machinery and animals. This is known as feedback within the farming system.

Transport: Transportation is an economic factor of production of goods and services, implying that relatively small changes can have substantial impacts in on costs, locations and performance. It provides market accessibility by linking producers and consumers. Improvements in transportation and communication favor a process of geographical specialization that increases productivity and spatial interactions.

Soil Factors:

Soil types: Soil type usually refers to the different sizes of mineral particles in a particular sample. Soil is made up in part of finely ground rock particles, grouped according to size as sand and slit in addition to clay and humus, organic material such as decomposed plant matter. The largest particles, sand, determine aeration and drainage characteristics, while the tiniest, sub-microscopic clay particles are chemically active, binding with water and plant nutrients. The ratio of these sizes determines soil type: clay, loam, clay-loam, silt-loam and so

Soil texture: It is a qualitative rather than a quantitative tool; it is a fast, simple and effective means to assess the physical characteristics of the soil. It can be determined by proportion of soil through sand, clay, slit and water holding capacity of the soil. This is used to determine crop suitability and to approximate the soils responses to environmental and management conditions such as drought or calcium (lime) requirements. Soil texture has an important role in nutrient management because it influences nutrient retention. For instance,

finer textured soils tend to have greater ability to store soil nutrients. Knowing the soil texture alone will provide information about:

1) water flow potential,
2) water holding capacity,
3) fertility potential and
4) suitability for many urban uses like bearing capacity.

Need of quality evaluation of herbal drugs and formulations:

The importance of quality control and standardization of botanical products is almost concern for global acceptability of these drugs in the modern system of medicine. These assessments are needed at different levels of drug-manufacturing processes and post-manufacturing stages. Contamination can also arise during the production stage and this can influence the composition and quality of the final product. Such contamination or degradation can have very important impacts on the chemical composition and, consequently, the therapeutic qualities of a medicinal plant.

Constraints in quality determination of herbal drugs:

Constraints associated with the handing of medicinal plants

- Indiscriminate harvesting and poor post-harvest treatment practices
- Lack of research on the development of high-yielding varieties, domestication etc. Poor agriculture and propagation methods.
- Inefficient processing techniques leading to low yields and poor quality products.
- Poor quality control procedures.
- Lack of current good manufacturing practices.
- Lack of R & D on product and process development. Difficulties in marketing.
- Lack of trained personnel and equipment.
- Lack of facilities to fabricate equipment locally.
- Lack of access to latest technological and market information

Constraints associated with the dealing of Herbal Medicines: Both the raw herb and the extract contain complicated mixtures of organic chemicals which may include fatty acids, sterols, alkaloids, flavonoids, glycosides, saponins, tannins, lignans, and terpenes as well as other small molecules such as peptides and oligosaccharides. It is often difficult to determine which component, if any, of the herb has biological activity in humans.

## 4. QUALITY EVALUATION OF HERBAL FORMULATIONS

1. Raw material quality evaluation: Morphological evaluation:

Organoleptic evaluation means the study of drugs using organs of senses. It refers to the methods of analysis like colour, odour, taste, size, shape and special features, such as touch, texture, etc. Obviously, the initial sight of the plant or extract is so specific that it tends to identify itself. If this is not enough, perhaps the plant or extract has a characteristic odour or taste. The study of form of a crude drug is morphology while description of the form is morphography.

microscopical evaluation:

This method allows more detailed examination of a drug and it can be used to identify the organised drugs by their known histological characters. It is mostly used for qualitative evaluation of organised crude drugs in entire and powdered forms. Every plant possesses a characteristic tissue feature. Microscope can be used to confirm the structural details of the drugs from plant origin. For the effective results, various reagents or stains can be used to distinguish cellular structure. A drop of phloroglucinol and concentrated hydrochloric acid give red stain with lignin. Mucilage is stained pink with rhuthenium red and also, when treated with corallin soda and few drops of sodium carbonate solution, cellulose swells and dissolves in cuoxam, while N/50 iodine solution stains starch and hemicellulose blue.

Physical evaluation:

Physical standards are to be determined for the drugs, wherever possible. These are rarely constant for crude drugs, but may help in evaluation, specifically with reference to moisture content, specific gravity, density, optical rotation, refractive index, melting point, viscosity, and solubility in different solvents.

1) Moisture content- The moisture content of a drug will be responsible for decomposition of crude drugs either producing chemical change or microbial growth So, the moisture content of a drug should be determined and controlled. The moisture content is determined by heating a drug at 105o c in an oven to a constant weig

2) Viscosity- Viscosity of a liquid is constant at a given temperature and is an index of its composition.
3) Melting point- Plant constituents have very sharp and constant melting points. As far as crude drugs are concerned, melting point range has been fixed due to the mixed chemicals.

Chemical evaluation

The majority of medicines have defined chemical components that are responsible for either biological or pharmacologic effect.Qualitative chemical tests are rarely used to identify bound drugs or to verify their purity.Chemical methods of purification, identification, and isolation of active ingredients are used. Analysis resins analysis check: definite amount, sulphated ashBalsam analysis check: precise quantity, response value, bester values. Values for acyl and organic component analysis of volatile oils. The quantifiable chemical tests are useful for identifying and detecting chemical components of tampering.

biological evaluation methods:

Some drugs have particular biological and pharmacologic properties that are employed in their study. This activity is undoubtedly made possible by a certain type of ingredient present in the plant preparation. In order to conduct the research, living animals' intact and isolated organs were used. With With the aid of bioassays, the potency of the medicine during manufacture is assessed. Quality control and method quality analysis The raw ingredients used to make medicines are genuine, of the required quality, and free due to contamination The manufacturing process follows the guidelines and upholds standards for purity Adequate quality control methods are implemented, and the factory-produced medicine that is freely obtainable is of a respectable calibre to fulfil the higher-level goals set for each licensee.

Quality management

Sanitation and hygiene
Building and facilities
Equipment
Raw materials
Personnel
Validation and qualification
Complaints
Documentation and recordkeeping
Inspections & quality audits

Herbal medicine system beneficial over Allopathy system:

Although allopathy has been the most acceptable system of medicine over the years, people are now shifting back to the utilization of herbal medicine. This is due to the setbacks of allopathic medicine like it is very expensive, it has serious and frustrating side effects, its relief from ailments is only symptomatic and fear of toxicity to allopathy drugs. Herbal medicine like Ayurveda and Homeopathy are preferred in the treatment of chronic diseases because of the characteristic features of Ayurveda like it is less costly and more sensible,exactly aligns with the patient's thoughts, more easily accessible, time tested, it's said to be more Natural and safer and it is thought to have fewer or no negative effects.

General Introduction to Quality aspects of herbals

It can induce fever and make breathing difficult. Your body produces a cough as a reaction to irritation of the throat or airways. An irritant causes your nerves to fire, sending a signal to your brain. Vasaca cough syrup is typically a sweetened beverage that contains cough suppressant medication. In India, the number of people suffering from asthma is rising daily for a variety of manmade or environmental factors.

A chronic lung condition that affects people of all ages is asthma.It is brought on by inflammation and constriction of the muscles around the airways, which makes coughing symptoms more difficult to exhale.Thyme, a vasaca plant, has expectorant and antispasmodic properties that help loosen mucus in the bronchi and soothe coughs. Adhatoda vasica leaves are utilised as bronchodialators and expectorants because they contain vasicine, vasicinone, hydroxy vasicine, and adhatodic acid. Eugenol, β-Caryophylene, and α-Humlene are found in Syzygium aromaticum fruit. Eugenol acetate is used to treat respiratory infections, including asthma, bronchitis, and cough.These are all used to treat coughs, skin infections, and skin eruptions. Coughing may be caused by the respiratory tract.[8]This article's goal is to present, via analysis and research, the role that Vasaca leaves play in managing cough aversions. Vasaka leaves have the potential to provide compounds with strong antitussive efficacy and little side effectsAllowing for treatment of expectorants,particularly dose and

monitoring of unwanted effects. Hence, the results of the present study indicted the Cooperative effect of vasaca leaves in the management of cough aversions.

Health Benefits of Ayurveda Over Modern Medicine

The fundamental advantage of Ayurvedic therapy is that there are no side effects since Ayurvedic remedies are made from the essence of fruits, spices, vegetables, and natural herbs. These natural components aid in the treatment of ailments while posing no additional risks. However, utilising Allopathy drugs might cause hair loss, weakness, and allergies.The ayurvedic treatment approach may not be quick, but it is extremely successful, as opposed to allopathic treatment, which cures the ailment quickly but creates numerous side effects and is comparatively less efficient in the long-term cure. Despite being a more contemporary and advanced medical treatment approach, allopathy is still unable to heal ailments such as psoriasis, rheumatoid arthritis, jaundice, and so on. However, Ayurveda has effectively treated and managed these disorders from ancient times.Allopathic treatments only partly cleanse our bodies, however Ayurvedic remedies and medicines assist to decontaminate and cleanse our bodies completely. Unlike allopathic medications, Ayurvedic remedies are environmentally friendly since they are made from organic ingredients. Allopathic medications are made using chemicals, which pollute the environment.

Ayurvedic Concepts of Health

considers an organism to be a system of interactions that determine the functions rather than a set of organs. As a result, Ayurveda's knowledge of how the human body works is different from that of clinical medicine. It is based on the Tridoshas, which are Vata, Pitta, and Kapha. These terms in Sanskrit, the language of Ayurveda, allude to functions such as movement, change, and support and growth. These are referred to as 'doshas' in Ayurveda, which literally means 'that which can become vitiated.' This is appropriate because, in the end, it is the functions that are hindered in a disease.

The existence or absence of a balanced condition of the overall body matrix, including the equilibrium between its many parts, determines health or disease. Both intrinsic and external causes can disrupt the natural equilibrium, resulting in illness. This lack of balance can be caused by indiscriminate eating, bad behaviours, and a failure to follow healthy living principles. Seasonal changes, poor exercise or inconsistent use of sense organs, and incompatible acts of the body and mind can all disrupt the body's and mind's natural equilibrium. The treatment consists of restoring the equilibrium of the damaged body-mind matrix by diet regulation, life-routine and behaviour correction, pharmacological administration, and the use of preventative Panchkarma and Rasayana therapy.

In conclusion, Ayurveda is an ancient proven method to treat the mind, body and spirit alike when healing. It can help work wonders with a little patience and faith. Many people across the globe flock to India to take advantage of this hidden treasure of India. In fact, there are plenty of Ayurveda Courses in Kerala that help to gain a deeper understanding of the science. School of Ayurveda & Panchakarma is a leading Ayurveda Institute in Kerala that offers a holistic learning facility with expert faculty members. Enroll in a 3 months Panchakarma training to learn how to cleanse your entire infrastructure.

reviews the parallels in Ayurveda Ayurveda, a traditional system of medicine that originated over three millennia ago in the South Asian region, offers extensive insights about food and health based on certain unique conceptual as well as theoretical positions. Health is defined as a state of equilibrium with one’s self (svasthya) but which is inextricably linked to the environment. Ayurvedic principles, such as the tridosa (three humors) theory, provide the relationship between the microcosm and the macrocosm that can be applied in day-to-day practice. Classical Ayurveda texts cover an array of themes on food ranging from briefly diversity of natural sources, their properties in relation to seasons and places and to their specific function both in physiological and pathological states. The epistemic perspective on health and nutrition in Ayurveda is very different from that of biomedicine and modern nutrition. However, contemporary knowledge is reinventing and advancing several of these concepts in an era of systems biology, personalized medicine, and the broader context of a more holistic transition in sciences in general. Trans-disciplinary research could be important not only for pushing the boundaries of food and health sciences but also for providing practical solutions for contemporary

health conditions. This article and biomedicine and draws attention to the need for a deeper engagement with traditional knowledge systems, such as Ayurveda. It points out that recreation of the methodologies that enabled the holistic vie point about health in Ayurveda may unravel some of the complex connections nature

## 5. HISTORY

In 1895, German drug manufacturer Bayer released its latest cough syrup, which they sold under the brand name " Heroin'' Traditional cough syrup mixtures are formulated around in syrup at 60-75 % concentration which is made from sucrose, maltodextrin, glucose , invert syrup. The cough syrup was manufactured by Fourrts Laboratories in india.

It's not a new drug. Ancient Egyptians were known to trade opium. In the late 1800s, Americans used opium-laced cough syrups. Another name for opium-containing ingredients in cough syrups is "laudanum," which parents gave babies to reduce teething pain.

Cough syrup has been around for quite a long time. It's been used for centuries to help relieve coughing and soothe sore throats. In the past, cough syrups were often made with natural ingredients like honey, lemon, and herbs. These ingredients were believed to have medicinal properties that could help with coughs and colds.

As time went on, cough syrups evolved, and pharmaceutical companies started producing them with different active ingredients like dextromethorphan (DXM) to suppress coughs or guaifenesin to help loosen mucus. Some cough syrups also contain ingredients like antihistamines or decongestants to address other symptoms like runny nose or congestion.

It's essential to follow the recommended dosage and consult a healthcare professional before using cough syrup, especially for children or if you have any underlying health conditions.

diagnosis of cough:
These frequently include methacholine challenge testing, sputum (mucus) testing, imaging studies including CT scans or X-rays of the chest, spirometry, and blood tests.[9]It could be a good idea to have the following information ready in advance to aid your doctor in making an accurate diagnosis.Acute bronchitis and acute viral upper respiratory infections, commonly referred to as the common cold, are the most frequent causes of acute cough in adults. The aetiology of acute bronchitis is mostly viral, however in around 10% of cases, bacterial infection is the cause. August 2023.

TYPES OF COUGH:

Classifying coughs as wet or dry is the easiest method to understand them. Mucus-filled coughs, or wet coughs, are frequently happen when one has the flu, a cold, pneumonia, or another sickness. The process of clearing the respiratory system of mucus causes the patient to feel sticky and moist in the back of their throat. When a cough doesn't generate mucus, the throat feels dry and tickly.[25,26] They often arise from inflammation of the digestive tract brought on by asthma, croup, allergies, and other diseases. Depending on the type of cough, you can select a dry cough syrup or a suitable wet cough syrup designed to address the particular.

CHRONIC COUGH TREATMENT:
Upon reviewing the secondary sources excluded from the Cochrane Collaboration, we found one that did not meet the minimal systematic criteria, which we opted not to include[]Rather, the CDSR offers a "umbrella review," which is made up of up to 15 SRs and is updated on a regular basis on the internet, offers a substantial, comprehensive, and ethically sound body of evidence. However, due to the overall dearth of well-structured trials on pharmaceutical and non-pharmacological therapy for childhood persistent cough, it currently lacks broad therapeutic value. Among these fifteen SRs, one looked at the management algorithms that were previously discussed in this study.

PHRMACOLOGICAL ACTION:

Decongestants :
The decongestants found in children's OTC cold medication are either pseudoephedrine or phenylephrine. Systemic decongestants are adrenergic receptor agonists (sympathomimetics) that produce vasoconstriction within the mucosa of the respiratory tract, temporarily reducing the swelling associated with inflammation of the mucous membranes. Sympathomimetic drugs work on the α receptors in the vascular smooth muscle

causing vasoconstriction and presser effects and on the β-adrenergic receptors in the heart causing increased heart rate and force of contraction.Because of the cardiac effects, these agents should be used with caution in children with congenital heart disease, hypertension, or cardiac arrhythmias without consulting the patient's pediatric cardiologist.. Oral decongestants also should be used with caution in patients with hyperthyroidism and diabetes mellitus. Topical decongestant products are applied topically to the nasal tissues via spray or drops. Topical decongestants stimulate the α-adrenergic receptors in the arterioles of the nasal mucosa, leading to vasoconstriction and shrinkage of nasal tissues.There is minimal systemic absorption if used as directed. The use of isotonic saline nose drops and gentle aspiration can be effective in the temporary relief of nasal obstruction in infants. Also useful is the general humidification of room air. Moisture tends to dilute tenacious nasal mucus so that it is easier to remove.

Cough Suppressants:
Dextromethorphan is the cough suppressant found in OTC cough medications, and it often is combined with the expectorant guaifenesin.
Dextromethorphan, the D isomer of the codeine analogue levorphanol, acts centrally in the cough center in the medulla to suppress cough. Drowsiness, dizziness, nausea, and gastrointestinal upset also may be seen with dextromethorphan use. Diphenhydramine, an antihistamine, also is marketed as a cough suppressant for The exact mechanism of action of first-generation antihistamines antitussive effects is unknown.

Expectorants:
Guaifenesin is the most commonly prescribed oral mucolytic agent as an expectorant in the United States. Its mechanism of action is to reduce the surface tension and viscosity of the mucus, which increases the ease of expectoration. Respiratory mucus removal is facilitated by increased flow of the thinned secretions via ciliary action.Studies on the efficacy of guaifenesin have failed to demonstrate either improved pulmonary function or decreased sputum viscosity. Hence, its clinical usefulness is questionable

Antihistamines:
Diphenhydramine, chlorpheniramine, and brompheniramine are the antihistamines found in children's cold and allergy formulas. Antihistamines, also known as H1 receptor antagonists, compete for and block the action of histamine at the H1 receptor site on cells in the respiratory tract, gastrointestinal tract, and blood vessels. In the respiratory tract, antihistamines decrease congestion related to allergies. Naclerio et al 1988 studied the response of inflammatory mediators to induced viral infections. All variables except histamine grew stronger in direct relationship with the symptoms as the cold increased in severity. This finding indicates that antihistamines have no role in the treatment of the common cold; they will not shorten the period of symptoms. They are helpful, however, in thetreatment of the symptoms of allergic rhinitis. Lastly, in young infants, sympathomimetic-antihistamine mixtures are particularly dangerous because they may cause respiratory depression.

Antipyretics:
Some multi-symptom cold formulas contain acetaminophen or ibuprofen as an antipyretic and analgesic. Acetaminophen acts centrally to inhibit the synthesis prostaglandins in the CNS and peripherally to block pain impulse generation. Antipyretic activity is due to its action against prostaglandin E2 in the CNS, which increases in fever.

THE ACTIVE INGREDIENTS FOUND IN HERBAL REMEDIES THAT POSSESS AN ANTITUSSIVE EFFECT

Saponins
Among herbal remedies, saponins are one of the most well-understood mechanisms of action, with thethe capacity to modify cough characteristics and phlegm quality.Heterosides with both glycid and non-glycid components are called saponins.The non-glycid component, referred to as the aglycone, is responsible for its pharmacological effects. When therapeutic doses are taken orally, the saponins reflexively irritate the vagal nerves. This leads to an increase in phlegm output in the airways.Moreover, expectoration is elevated due to inflammation in the cough and respiratory centres. Conversely, larger concentrations of saponins can irritate the stomach and intestinal mucous membranes, leading to emesis, diarrhoea, and bleeding.

Flavonoids
Flavonol glycosides and their aglycones combine to

form flavonoids. Activation can be decreased by flavonoids of xanthinoxidase and cholinesterase by preventing oxidative and reductive processes. The antitussive-expectorant activity of flavonoids, which are used to treat renal diseases, thromboembolic sequelae, and cardiovascular illnesses, is probably what makes their therapeutic benefits advantageous.

Essences

Essences are compounds that include fragrant terpenes. These are volatile substances that directly stimulate cells that secrete, irritating a range of bodily tissues, including the epithelium of the airways. They accelerate the ciliary epithelium's motility and have antibacterial and antiphlogistic qualities. The ingredients in the essence medications are Fructus anisi, Fructus foeniculi, Fructus melissae, H. seu, and Fructus thymi. and renal parenchyma damage are some of the side effects that might occur after using aetheric oils.

Mucilage

These days, upper respiratory infections are frequently treated with the so-called slime medications.connected to a dry, uncomfortable cough. The most well-known are Folium et Flos althaeae, Folium et Flos malvae, Radix, and Folium plantaginis. Slime medications create a protective layer on the surface of the airway mucous membrane that lessens irritation of the nerve endings of non-myelinated C-fibers as well as cough receptors (rapidly adapting cough receptors, or RARs) on myelinated vagal nerve fibres. This lessens the irritation of the injured mucous membrane brought on by inflammatory mediators or foreign objects, which results in coughing.

Gums

Gums are transparent, amorphous hydrocolloids found naturally in plants, usually found in higher plants.as a post-injury protection agent. The herbal gums have a strong antitussive effect. The antitussive qualities of peach gum were studied.Mucilage's cough-suppressing properties are probably comparable.

Pectin

Pectin is said to as a mucous membrane protector for the stomach. The exact mode of action of pectins is unknown, but in experimental settings, the antitussive effect of pectins isolated from citrus fruits (30.2 percent) was comparable to that of antitussives that act peripherally, like prenoxdiazine (23.7 percent) and dropropizine (27.4 percent) (dose of 50 mg/kg b.w.).

RESEARCH METHODOLOGY

To determine the primary studies, secondary sources, and guideline searches, the following sources were chosen: Medline (using the search engine PubMed) The Cochrane Library's Cochrane Database of Systematic Reviews, or EMBASE DARE stands for Database of Abstract of Reviews of Effects. The main Guideline Banks (LG) at Gruppo Italiano di Medicina Basata sulle Evidenze (GIMBE) have been identified. We used the following phrases to gather data from the PubMed (MeSH database) and Embase keyword registers: "Cough," "coughing," and "chronic," matched the terms "epidemiology," "prevalence," case-by-case in different search strings. "Incidence, cause, diagnosis, outcome, and treatment" We searched for specific clinical regions in PubMed using the clinical queries search engine and the pre-defined phrase "chronic cough children. The domains of aetiology, diagnosis, prognosis, and therapy, as well as any existing "clinical prediction guides," might all be independently investigated. We searched the literature for our findings without setting a deadline, and we finished on September 8, 2014. The selection was further limited to reports having human subjects between the ages of 0 and 18 that were written in either English or Italian. We restricted our search to randomised controlled trials (RCTs) while looking for literature about therapy. We did not include non-systematic reviews, editorials, letters, works of pure study, or grey literature in our investigation.

Herbal cough syrup

A herbal syrup is prepared by combining a concentrated decoction with either honey or sugar, and Sometimes alcohol. Herbal plants and formulations are used for the many types of diseases like Cough syrup and many more other diseases. The content of herbal cough syrup include: - funnel, Clove, tulsi, cinnamon, pudina, adulsa.

Methodology:

Collection of Herbs: The various plants were selected collected based on the ethno-botanical uses And the older proved information. The plant material such as leaves of Vasaka: Adhatoda vasaka(Acanthaceae), rhizomes of Ginber: Zingiber officinale (Zingiberaceae), rhizome part

of Turmeric: Curcuma longa (Zingiberaceae), leaves of Tulsi: Ocimum santum (Labiatae), and finally the rhizomes Of liquorice: Glycyrrhiza glabra (Legiminosae). The collected material were shade dried for several Days from 3 to 8 days.

Types of herbal syrup

- Flavored syrup
- Medicated syrup
- Artificial syrup

Advantages of cough syrup

- No side effect
- Low cost
- Easily available
- No harmless
- Herbs grow in common place
- No adverse effects.
- Readily available.
- Simple to modify the dosage for the child's weight.
- There is no need for nursing care, therefore the patient can take it without help.
- The liquid dosage form is executed for products like cough medicines.
- Herbs Grow in everyday life.
- By delaying oxidation while sugar is hydrolyzed into cellulose and dextrose, antioxidant.

Disadvantages of cough syrup

- Not suitable in emergency and for unconscious patients.
- Dose precision cannot be achieved unless suspension is packed in unit dosage forms.
- Same microbial contamination take place it preservation not added in accurate Proportion.
- Fluctuation in storage temperature may cause crystallization of sucrose from saturated Syrup.
- Solid sedimentation can occasionally give a product a foot.
- Suspension suspensions must be packaged in unit dosage forms in order to achieve dose precision.
- When preservation is not added in the proper proportion, the same microbiological contamination occurs.
- Another drawback of herbal therapy is the risk of self-dosing, which is quite uncommon.
- Sucrose from saturated syrup may crystallize as a result of changes in storage temperature.

Ideal properties:

- It can relieve symptoms of cold and cough, such as congestion, coughing, and sore throat.
- It can help soothe and improve the respiratory system.
- It can boost the immune system and help the body fight infection.
- It can reduce inflammation in the respiratory system.
- It can help to loosen and expel mucus from the lungs, thus providing relief from congestion.
- It can reduce coughing and help to better sleep.

Productive and effective cough

* Signs associated for dry cough

a. Sensitive throat
b. Non mucus expelled
c. Short, dry and frequent cough
d. Persistent or constant tickle

Wet cough

A wet cough, also known as a productive cough, is any cough that produces mucus. It may feel like you have something stuck in your chest or the back of your throat. Sometimes a wet cough will bring mucus into your mouth.

Chronic cough

A chronic cough is a cough that lasts eight weeks or longer in adults, or four weeks in children. A chronic cough is more than just an annoyance. A chronic cough can interrupt your sleep and leave you feeling exhausted. Severe cases of chronic cough can cause vomiting, lightheadedness and even rib fractures.

Herbal treatment for cough

The most preferred treatment for cough is herbal treatment. Herbal formulations Are playing major role in improvement of health care sector. The Herbal treatments are used for Mild to severe health disorders including, asthma, tuberculosis, cough, pneumonia, kidney Diseases, cancer, diabetes, allergies, lung cancer and viral infections . As stated, to estimate of WHO, there are 80% population even uses herbal medicines for primary health care Requirements. Medicinal herbs have always been used as traditional primary healthcare agentsand especially in Asian countries . Major use of herbal

medicines is for health promotion and Therapy for chronic, as opposed to condition which are life threatening. Most of the synthetic drug treatment used causes many side effects like vomiting, Nausea, sedation, allergies, respiratory tract infections, appetite change, irritability, drowsiness, Addiction and excess use can damage organs or parts of organs . In recent years, researchers are Mainly focusing on herbal drugs and herbal treatments which have less or have no side effects During and after treatment . The patients suffering from common cold and cough are the highest among 14 different respiratory ailments, followed by whooping cough, asthma, nosebleed and bronchitis which can be treated by medicinal plants. The treatment of cough in children is based on an underlying cause. In children half of cases go away without treatment in 10 days and 90% in 25 days. A trial of antibiotics or inhaled corticosteroids may be tried in children with a chronic cough in an attempt to treat protracted bacterial bronchitis or asthma.

It is the best herb to stop coughing
The bottom line. Honey and saltwater gargles are popular home remedies for coughing. You can also drink herbal teas made of peppermint, ginger, slippery elm, thyme, turmeric, or marshmallow root. There's some evidence that bromelain supplements and probiotics can help ease a cough, but more evidence is needed.

Most of the synthetic drug treatment used causes many side effects like vomiting, nausea, sedation, allergies, respiratory tract infections, appetite change, irritability, drowsiness, addiction and excess use can damage organs or parts of organs . In recent years, researchers are mainly focusing on herbal drugs and herbal treatments which have less or have no side effects during and after treatment .Herbal Treatment for Cough: The patients suffering from common cold and cough are the highest among 14 different respiratory ailments, followed by whooping cough, asthma, nosebleed and bronchitis which can be treated by medicinal plants. The treatment of cough in children is based on an underlying cause. In children half of cases go away without treatment in 10 days and 90% in 25 days. A trial of antibiotics or inhaled corticosteroids may be tried in children with a chronic cough in an attempt to treat protracted

## 6. REVIEW LITERATURE

Review on Herbal Cough Syrup (2022)

Mr. Gadekar Dhananjay Pandurang1, Ms.Gaikwad S.C.2

Among respiratory track disorders cold and cough are common symptoms having variety of reasons behind them. It can lead to the serious disease if not treated in time. Proper diagnoses can cure this problem by different types of medicinal drugs commonly found around us alone or in combination. The Preformulation studies of all formulations were within specifications. Also the physiochemical properties of prepared syrup like colour, odour, pH, taste were satisfactory but among the all three formulation is was within the all specification, it has proper concentration of honey as per IP and also a good preservative. The present study help to develop affective and safe herbal cough syrup with 40%

Literature Review on Herbs used in Cough Medication(2022)
Cough refers to a powerful explosive expiration that clears the tracheobronchial tract of fluids and foreign materials. Given the high frequency of cough in both children and adults, the goal of this review paper was to document the plants used to cure and relieve cough in traditional culture and ethnobotany. The issues arising from the use of traditional opioid antitussive medications, such as codeine and codeine-like compounds, to treat cough in a variety of respiratory disorders.

Formulation and Evaluation of Herbal Cough Syrup(2018)
April 2023Asian Journal of Pharmaceutical Research and Development 11(2):28-33
The aim of this project was to formulate and evaluate herbal cough syrup. The present study helped us to understand what actually cough means, what are different types of coughs, factors responsible for causing cough. Herbal treatments for cough were studied briefly. As the study shows that the herbal treatment is more beneficial than that of allopathy treatment which uses standard drugs for treatment as Herbal drugs have less or no side effects. Herbal treatments are more preferred widely.

Herbal Medicine for Cough: a Systematic Review and Meta-AnalysisLuise Wagner et al. Forsch Komplementmed.( 2015)

This review found strong evidence for A. paniculata and ivy/primrose/thyme-based preparations and moderate evidence for P. sidoides being significantly superior to placebo in alleviating the frequency and severity of patients' cough symptoms. Additional research, including other herbal treatments, is needed in this area.

Review on Formulation and Evaluation of Herbal Cough Syrup(2023)
Tanvir Santosh Rohokale, Kalyanee Vijay Gavande, +1 author Harshwardhan Dhananjay Ghadge Published in International Journal For… 12 November 2023
The results of the present study indicted the Cooperative effect of vasaca leaves in the management of cough aversions as the main objective of this study was to eliminate harmful synthetic ingredient from herbal cough syrup.

Preparation and Evaluation of Polyherbal Cough Syrup: (2018)
The attempt was made to prepare cough syrup using a standardized procedure and its evaluation were carried out with respect to physical and physicochemical properties, safety etc.

Formulation and in vitro antibacterial screening of a bi-herbal syrup against some selected respiratory tract pathogens:(2022)
combination of Citrus aurantifolia and Garicia kola extracts have shown in vitro antibacterial activities and therapeutic potential effects in vivo which was retained when the extracts were formulated into a bi-herbal syrup.

Antidiabetic activity of Ayurvedic polyherbal formulations Avipattikara Churna and Triphla Churna in streptozotocin and nicotinamide induced diabetic wistar rats P.Dixit(2017)

The acute toxicity studies of thepolyherbal formulation did not show any toxic symptoms in doses up to 2000 mg/kg over 14 days, and the effect of the polyherbal formulations on blood glucose levels was studied at regular intervals.
Future prospects of cough treatment; herbal medicines v/s modern drugs(2020)arun kumar
This review may provide an insight into herbs possessing antitussive and expectorant activity individually or in combination of cough suppressants and will be useful towards establishing pharmacopoeial standards for crude drugs as well as for formulations which is gaining relevance in research on traditional medicinal system

A review of the most important medicinal plants effective on cough in children and adults(2013)
Saeedeh Ahmadipour
The findings indicated that 51 medicinal plants are used in Iran traditional medicine to specifically treat cough, which can affect the upper respiratory tract because of containing antimicrobial and anti-inflammatory compounds, and relieve and treat cough.

Herbal antitussives and expectorants-a review article (2010)
Seema Gairol
This review is intended to describe the current status of plant used as antitussive and expectorant and their active compounds with cough-suppressing activity.

Herbal Medicine for Cough: a Systematic Review and Meta-Analysis(2015)
Luise Wagner
A review of the literature on herbal medicine for cough found strong evidence for A. paniculata and ivy/primrose/thyme-based preparations and moderate evidence for P. sidoides being significantly superior to placebo in alleviating the frequency and severity of patients' cough symptoms.

Antitussive activity of ethanolic extract of Curcuma aromatica rhizomes on sulfur dioxide induced cough in mice (2008)

Ethanolic extract of rhizomes of Curcuma aromatica (Zingiberaceae) was investigated for its antitussive effect on Sulfur dioxide induced cough model in mice. The extract exhibited significant

Cough suppressant and pharmacologic protussive therapy: ACCP evidence-based clinical practice guidelines.(2006)

D.Bolser
These findings suggest that suppressant therapy is most effective when used for the short-term reduction of coughing, and relatively few drugs are effective as cough suppressants

Review on Formulation and Evaluation of Herbal Cough Syrup(2023)

Tanvir Santosh Rohokale, Kalyanee Vijay Gavande
The results of the present study indicted the Cooperative effect of vasaca leaves in the management of cough aversions as the main objective of this study was to eliminate harmful synthetic ingredient from herbal cough syrup.

Formulation and in vitro antibacterial screening of a bi-herbal syrup against some selected respiratory tract pathogens(2023)

Chibueze James Igwe
combination of Citrus aurantifolia and Garicia kola extracts have shown in vitro antibacterial activities and therapeutic potential effects in vivo which was retained when the extracts were formulated into a bi-herbal syrup.

Management of chronic non-specific cough in childhood: an evidence-based review(2007)
Atul Gupta
This article focuses on the approach to assessment and investigations of chronic non-specific cough in children and includes a systematic review of common therapies

Antitussive effect of Adhatoda vasica extract on mechanical or chemical stimulation- induced coughing in animals.(2016)
J.Dhuley
The antitussive activity of Adhatoda vasica (AV) extract was evaluated in anaesthetized guinea pigs and rabbits and in unanaesthetized guinea pigs. AV was shown to have a good antitussive activity. Intravenously, it was 1/20-1/40 as active as codeine on mechanically and electrically induced coughing in rabbits and guinea-pigs. After oral administration to the guinea-pig the antitussive activity of AV was similar to codeine against coughing induced by irritant aerosols.

Antitussive effect of Carum copticum in guinea pigs(2005)
Several therapeutic effects including anti-asthma and dyspnea have been described for the seeds of Carum copticum In previous studies the relaxant and anticholinergic (functional antagonism) effects, histamine (H(1)) inhibitory effect of Carum copticum have demonstrated.

7. MATERIAL AND METHOD: MATEIAL

1) Tulsi

Fig no 1.1 Tulsi

Synonym: Tulas ,Tulsi
Biological source: Tulsi consists of the fresh and dried leaves of Ocimum species like Ocimum sanctum L. and Ocimum basilicum L.
Family:- Labiateae
Chemical Constituents :Phytochemical studies have shown that oleanolic acid, ursolic acid rosmarinic acid, eugenol carvacrol, linalool, and β-caryophyllene are some of the main chemical constituents of Tulsi.

Uses:
* Expectorants
* Cough syrup
* In asthmatic patient
* Nasal decongestan

2) Adulsa
Adhatoda vasica has various biological activities such as antioxidant, anti-inflammatory, immunomodulating, antispasmodic and antiallergic properties, and acts as a cough suppressant. Arabinogalacatan samples extracted from the plant showed 67% cough suppression. After oral administration to the guinea-pig the antitussive activity of A. vasica was similar to codeine against coughing induced by irritant aerosols.
Botanical Name: Adhatoda vasica Common name : Adulsa
Family: Acanthaceae

Fig no 1.2 Adulsa

Uses:

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

* bronchitis
* chest congestion

3) Ginger

Fig no 1.3 Ginger

Ginger (Zingiber officinale) is a flowering plant whose rhizome, ginger root or ginger, is widely used as a spice and folk medicine. It is a herbaceous perennial which grows annual pseudo stems (false stems made of the rolled bases of leaves) about one meter tall bearing narrow leaf blades. Fights Germs, Keeps your mouth health, Gingers antibacterial power may also brighten your smile, Calms Nausea, Soothes Sore Muscles, Eases ArthritisSymptoms, Curbes Cancer Growth, Lowers Blood Sugar, Eases Period Pains.

Botanical name: Zingiber officinale
Common name: ginger Family: Zingiberaceae

Uses:
*Anti-inflammatory effect you cough when you have a sore throat or bronchitis
*Tretment of colds, nausea and hypertension.

4) Turmeric

Fig no: 1.4 Turmeric

Synonyms: Curcuma Family: Zingiberaceae

Biological source:
Turmeric is prepared rhizome of Curcuma longa Linn. (Zingiberaceae). It is perennial herb of ginger family, having thick rhizome; native to Southern Asia; extensively cultivated in India, China Indonesia and other tropical countries.

Chemical Constituents:
Turmeric contains 3-7% orange-yellow colored volatile oil which is mainly composed of turmerone (60%), a, ß-atlantone and zingiberene (25%) with minor amounts of 1,8 cineole, a- phellandrene, d sabinene and borneol. Others than above it contains yellow coloring matter including 0.3-5.4%.

Uses:-
It is used as an antioxidant in capsules tablets and flavouring tea. It is recommended as a food supplement to treat liver problems menstrual difficulties hi marej test pain.

5) Honey

Fig no 1.5 Honey

Biological Source: Honey is a natural product formed from nectar of flowers by honeybees Apis mellifera.
Family: Apidae
Chemical constituents: Honey contains trace amounts of the B vitamins riboflavin, niacin, folic acid, pantothenic acid and vitamin B6. It also contains ascorbic acid (vitamin C), and the minerals calcium, iron, zinc, potassium, phosphorous, magnesium, selenium, chromium and manganese.

Uses:
* Expectorants
* In asthmatic patients
* Cough syrup
* Nasal decongestant. I

6) Clove

Fig no: 1.6 Clove

Biological Source: Cloves consist of dried flower buds of Eugenia caryophyllus, Family: Myrtaceae
Chemical Constituents: Eugenol is the major compound, accounting for at least 50%. β-caryophyllene

Uses:
* In asthmatic patients
*Cough syrup

7) Fennel

Fig no:1.7 Fennel

Fennel consists of the dried ripe fruits of Foeniculum vulgare Miller,belonging to Family Umebelliferae. Fennel contains a mix of antioxidants,antimicrobial components and anti inflammatory volatile oils,which help alleviate the risk of cold, cough and flu and provides instant relief.

Uses:
1. Is used as carminative, flavouring agent.
2. It is also used for upper respiratory tract infections, coughs,bronchitis .

## 8. METHOD OF PREPRATION

Herbal parts are use in formulation of herbal syrup for treatment of cough as shown in Table no 1

Table no 1 List of ingredient used for herbal cough syrup

| Sr.No | Ingredient | Botinanical Name |
|---|---|---|
| 1 | Tulsi | Ocimum tenuiflorum |
| 2 | Adulsa | Justicia adhatoda |
| 3 | Ginger | Zingiber officinale |
| 4 | Turmeric | Curcuma longa |
| 5 | Heney | Apis mellifera |
| 6 | Clove | Syzygium aromaticum |
| 7 | Fennel | Foeniculum vulgare |

Formulation Table:
formulation of herbal cough syrup were prepared as shown in Table 2.

Table 2: List of herbal ingredients with quantity and use

| Sr.No | Ingredient | Quantity | Use |
|---|---|---|---|
| 1 | Tulsi | 5 mg | Antitussive, Expectorant |
| 2 | Adulsa | 5 mg | Antitussive |
| 3 | Ginger | 2. 3 mg | Antitussive, Expectorant |
| 4 | Turmeric | 2. 3 mg | Antitussive |
| 5 | Heney | 30 % | Base ,Viscosity modifires, sweetner |
| 6 | Clove | 3 mg | Expectorant |
| 7 | Fennel | 2 mg | Digestive,stimulant |

Fig no 1: Herbal ingredients used for preparation for herbal cough syrup.

Herbal cough syrup was prepared by using various method:
maceration
percolation
decoction
Reflux extraction
Pressurised liquid extraction
Supercritical fluid extraction

## 9. PROCEDURE

Herbal cough syrup was prepared by using decoction method. Procedure of herbal cough syrup preparation as shown in chart 1.

Chart no 1: Method of prepration decoction

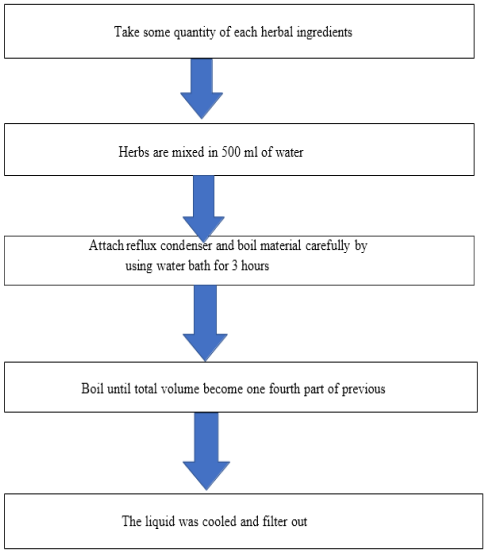



Fig no 2 Extraction process of (decoction)

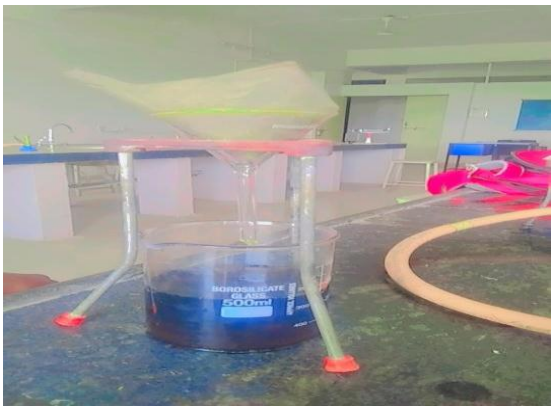
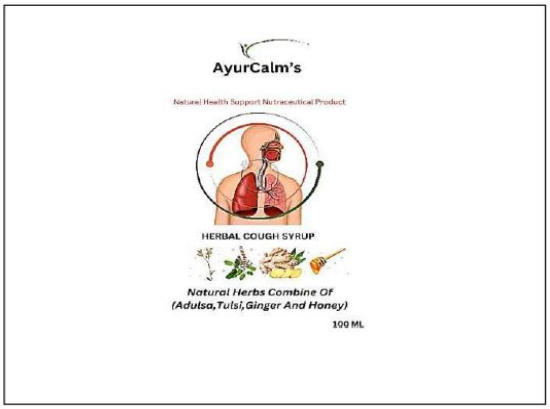


Fig No 2.1 extraction filter process (decoction )

| Composition | Quantity |
|---|---|
| Tulsi | 5 mg |
| Adulsa | 5 mg |
| Ginger | 2. 3 mg |
| Turmeric | 2. 3 mg |
| Heney | 30 % |
| Clove | 3 mg |
| Fennel | 2 mg |




Storage: Store in a cool, dry & dark
Place at below 25°C

**Ayurcalm'S**

**Ayurcalm Lic No: 2026203823033**

**Net Volume: 100 ml**

**Batch No: BP23033**

**MRP: 90 Rs**
**Mfg Date : 20/05/2024**
**Exp Date: 2 Years From mfg dt**
**Dose:**
**Cildren: 1 Teaspoon two times in a day**
**Adult : 2 Teaspoon two times in a day**

**Mfg by :**
**Premraj Sanjay Nikam**

**Rashtriya collage Of Pharmacy, hatnoor, Kannad, Chh. Sambhajinagar, India-431103**

## 10. RESULT AND DISCUSSION

Evaluation Examiation

Table 3. Evaluation parameter of drug

| Sr.no | Test | procedure |
|---|---|---|
| 1 | Colour Examination | 1) 2ml of syrup was taken on a watch glass<br>2) ii. Watch glass was placed again stwhite<br>3) background under white tube light<br>4) iii. Colour was observed. |
| 2 | Order Examination | 1) 2ml of prepared syrup was taken and smelled by an individual.<br>2) The time interval between two smelling was 2min to nullify effect of previous smelling |
| 3 | Taste | A pinch of final syrup was taken and was examined on test buds of the tongue |
| 4 | Ph determination | 1) 10ml of prepared syrup was taken in100 ml volumetric flask.<br>2) Makeup volume upto100ml with distilled water.<br>3) Sonicate for 10min<br>4) pH was measured using digital pH meter |

Pre formulation studies:

Table 4: Physicochemical constituent of crude drug

| Sr.No | Test | Result |
|---|---|---|
| 1 | Moisture content | 1.4 |
| 2 | Ethanol soluble extractive | 11.9 |
| 3 | Water soluble extractive | 13.1 |

Post Formulation Studies:

Table 5. Physicochemical parameter of formulation herbal cough syrup

| Formulation | Colour | Odour | Test | PH | Viscosity |
|---|---|---|---|---|---|
| Harbal Syrup | Yellowish brown | Aromatic | Sweet | 6.1 | 0.0132 |

a. Colour:

The colour of herbal cough syrup formulation was found to be yellowish brown. Table 5 shows the results obtained for colour of formulated batches of syrup.

b. Odour:

Table 5 shows the result obtained for odour of formulated batches of cough syrup. The odour of formulation was aromatic for formulated batches.

c. Taste:

Table 5 shows the results obtained for taste of formulated batches of cough syrup. The taste of formulation was sweet for formulated batches.

d. pH:

Table 5 shows the result obtained for pH of formulated batches of cough syrup. The pH of formulation is 6.1 formulated batches respectively.

e. Viscosity:

Table 5 shows the result obtained for viscosity of formulated batches of cough syrup. The viscosity of formulation is 0.0132 formulated batch. Anti-microbial activity of formulated herbal cough syrup was observed:-

Formulation A & B are evaluated for it's in-vitro anti-microbial activity by using standard amikacin. From the zone of inhibition, the formulation B was found more superficial toward anti-microbial activity as compared to formulation.

## 11. CONCLUSION

An ancient time peoples use various plant, roots, and leaves for treatment various disease. Herbal cough syrup is an Ayurveda medicine which is useful in many chronic health problem such as cough, cold, fever, respiratory infection and

disorders among human. As combination of herbs, it is safe, can be made at home, has a low production cost, and can be easily available in any area. Herbal syrup including natural herbs, like tulsi, clove, fennel, turmeric and adulsa which have various action and effect on reducing acute or chronic cough and cold and act as cough suppressant having expectorant and anti-tussive property. In this review, I conclude about herbal cough syrup that, herbal cough syrups is a safest herbal medicine which is use for treatment of cough and cold.

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