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FORMULATION AND EVALUATION OF A HERBAL COUGH SYRUP

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ABSTRACT

From ancient time people use various plant leaves roots for treatment of various disease .Herbal cough syrup is Ayurveda medicine which is used in many chronic health problem such as cough cold fever respiratory infection and disorder among Human As combination of herbs its is safe can be made at home which have low production cost and can easily available in any area . herbal syrup including natural herb like tulsi, clove , fennal, turmeric etc which have various action and effect and reduce acute and chronic cough

Main aim of this study is to develop herbal cough syrup and evaluate various parameter Quality of herbal cough syrup was evaluated with the help of various parameter such as physical appearance like colour odour taste PH viscosity Liquorice is traditionally used crude drug to treat various respiratory Formulation and substitute them with safe natural ingredient. Asthmatic patients are increasing day by day in India due to various environmental reasons. It is beneficial for people suffering from chest congestion.

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.

INTRODUCTION

Herbal medicine is also known as phyto-medicine or herbalism it is a medicine that use plants or their crude products for the treatment of diseases 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 well being Some herbs have potent (powerful) ingredients and should be taken with the same level of caution as pharmaceutical medications.

Herbal cough syrup was prepared by adding decoction of herbal drugs with jaggery as a base .The herbal cough syrup is formulated by using decoction method . Mix decoction of herbal drugs with base of jaggery helpful to the formulation for thicken and preserve the formulation .That was Helpful to increase the shelf life of formulation .

The added jaggery sweetener can also helpful to increase the palatability of some herbal drugs.

1. Unpleasant taste and odour
2. Examine solubility of drug
3. The spice is one of the ingredients of teas used in tropical asia to facilitate coughing.
4. Clove oil acts as an expectorant for treating respiratory disorders including colds bronchitis ,cough ,asthma and upper respiratory conditions

A cough is a sudden and often repetitively occurring process which helps to clear the large breathing passge from secretion , irritants

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,foreign particle and micro-organisms .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 of condition .The cough reflex consist of three places : 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 Some of the symptoms of a cough are itchy throat , chest pain and congestion .The repetition of coughing produces inflammation and discomfort which in turn result in more coughing Natural product itself or compounds derived from natural products play a major role as drugs or lead molecules for the development of synthetic drugs. Many antibiotic materials are unstable when maintained in solution for appreciable length of time and therefore ,from a stability standpoint, insoluble forms of the drug substances in aq . suspension or as dry powder for reconstitution are attractive to Manufactures In adults with a chronic cough , ie a cough longer than 8 weeks ,more than 90 percent of cases are due to post nasal drip , asthma , eosinophilic bronchitis and gastroeso-phageal reflux disease.There are many types of drugs that are used to suppress cough and are often prescribed in combination . Before dealing with the particular type of drug used it is important to consider briefly the nature of cough production ,its role in disease and desirability of suppressing it.

1. Type of cough
1. Dry Cough
2. Wet Cough
2. Classification of cough:
1. Acute cough- Not more than 3 weeks duration
2. Chronic cough - More than 3 weeks.
3 Dry cough - No mucous or secretion.
4. Wet cough - with mucous or secretion.
5. Cough from chest and throat- productive and non-productive.
6. Paroxysmal cough- spasmodic and recurrent.
7. Bovine cough- soundless cough due to paralysis or larynx.
8. Psychogenic cough- self conscious activity of the patient to draw attention
3. Advantages of herbal medicines:
1. Harmless
2. Low cost
3. No side effect
4. Herbs grow in comman places
5. Easily available
6. Not required prescription

4. Disadvantages of herbal medicines:
1. ADR with prescription drug.
2. Risk of self dosing of herbs which is very rare.
3. The effectiveness of herbal medicines is not optimized in laboratory so it taken time to produce effect.

MATERIAL AND METHOD OF PREPARATION

Following herbal parts are
1. ZINGER
2. FENNEL
3. CLOVE
3. ADULSA
5. JAGGERY
6. BLACK PEPPER
7. TULSI
8. LIQUORICE

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1. GINGER



Synonym

zingiber

Biological Source

It consist of rhizomes of plant Zingiber officinate linn belong to family zingiberaceae

Chemical Constitution

1 Gingerol
2 Ginger
3 Oil fix oil

Used

Aromatic
Stimulant
Carminative

2. LIQUORICE

SYNONYMS



Glycyrrhiza glabra , liquorice root, Glycyrrhiza radix, Mulethi

BIOLOGICAL SOURCES

It contain dried peeled or unpeeled root rhizome or stolon of " Glycyrrhiza glabralinn" belonging to family leguminosae

USES

Its is used as Demulscent and expectorant

1. Liquid extract use in treatment of peptic ulcer
2. Its help to decreased or reduce cough
3. used as Anti-inflammatory
4. used as Anti-ulcer

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1. it's used as flavoring agent

CHEMICAL CONSTITUENT

It contain saponins and flavanoids Glycyrrhizin or glycyrrhizin acid Glucoronic acid and Glycyrrhitic acid liquieitoside , iso-liquiritoside glucose, mannitol

3. CLOVE



SYNONYMS

Caryophyllun , cloveflower ,clove buds, lavang

Biological Source

Cloves consist of dried flower buds of "Eugenia caryophyllus" Belonging to Family Myrtaceae

Chemical Constituents

Eugenol is the major compound, accounting for at least 50%. β-caryophyllene Vanillin, tannine , resin

Uses

In asthmatic patients Cough syrup
Nasal decongestant Its used in tooth ach Its used in oral health Its help to boost
Its also used for upset stomach and as an expectorant close is used for diarrhea herni

4. FENNAL



SynonymsL arge Fennel , Sweet Fennel, Fennel fruit, Saunf (Hindi); Fructus Foeniculi.

Biological source

Fennel is the dried, ripe fruits of Foeniculum vulgare Mill. (Family: Apiaceae).Chemical constituents:-

Fennel contains volatile oil (2-6.5%) and fixed oil (12%).
The main constituent of the volatile oil are phenolic ether, anethole (50-60%) and the ketone, fenchone (18-20 %) which give the fruit its distinctodour and taste; the other constituents of volatile oil are anisic aldehyde, anisic acid, a- pinene, dipentene and phellandrene.

Uses:-

Fennel is used as stimulant, aromatic, stomachic, carminative, and expectorant. Anethole is used in mouth and dental preparations.
Fennel is used in diseases of the chest, spleen and kidney

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5. Vasaka



Synonym

Adhtoda , Adulsa

Biological sources:

It is dried and fresh leaves of Adhatoda vasica or Malabar nut

Family

Acanthaceae .

Chemical Constituents :

Vasicine , Vasicinone, 6-hydroxy vasicine , and adhatodic acid

Used

- Expectorants
- In asthmatic patients
- cough syrup.

6. BLACK PEPPER



Synonym

Black pepper

Biological source:

Its consist of dried unripe fruit Pipes niguum linn belong to family piperaceae

Chemical constitution

piperin, pepridin, piperizine

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Uses

1. used as aromatic
2. stimulant,
3. carminative,
4. GIT stimulant

7.Cardamom



Synonym

Cardamom fruit

Biological Source

Chemical Constitution

Terpineol, borneol, volatile oil

Uses

1. Aromatic
2. Carminative
3. Stimulant
4. flavouring agent

8.TULSI



Synonym

Tulas, Tulsi , Sacred basil, Holy basil

Biological source

Tulsi consists of the fresh and dried leaves of Ocimum species like Ocimum sanctumL. 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

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- In asthmatic patients
- Cough syrup
- Nasal decongestant

Method of preparation of jaggery syrup

- 40gm of jaggery was dissolved in sufficient water to get 100 ml of conc Syrup.
- Then the solution was filtered.
- There jaggery syrup was used as vehicle.

Methodology for herbal cough syrup

1. crude herbs were taken in quantity as
2. All the herbs were taken in water bath and added sufficient water and boiled till 1/3 rd part wasleft
3. Syrup solution of varying conc.(40% w/v)was prepared.
4. Filtered extract of herbs and jaggery solution.
5. Jaggery solution was add to the the filtered extract slowly by continous stirring.
6. Volume made upto 100 ml add preservative and flavour and evaluated it.

FORMULATION

Decoction of Herbal

- 5-7 gm of each herbal ingredients
- Herbs was mixed using 500ml of water
- Attach reflux condenser and material was boil under carefully by using water bath for 3hrs.
- Boil until total volume become one forth part of previous
- Then liquid was cooled and filtered.

Formulation of herbal cough syrup-

1. Each of herbal was taken.
2. Herbs are mixed with 500 ml of water.
3. All ingredients was boiled until total volume become one fourth of previous after boiling extract was cooled and filtered.
4. Filtrate was taken to prepare final syrup

Evaluation parameters of formulation:-

1.Colour Examination

prepared syrup was taken and then colour was observed

2 .Odour Examination

2ml of prepared syrup was taken and smelled. Then odour was observed

3. Taste Examination

A pinch of final syrup was taken and examined the taste of syrup

4. pH Examination

1) Washed to glass electrode with distlled water and cleaned.
2) Placed the electrode in PH 7 buffer solution and set the value of 7 on the PH meter turning the calibrate knob on the meter.
3) Removed the electrode and washed with distilled water and cleaned.
4) placed electrode was in the PH 4 buffer soluation .Adjust the value.
5) Then electrode was placed in the final syrup and PH was Observed

5. Viscocity Examination

1) Cleaned the Ostwald viscometer with warn chromic acid and necessary used an organic solvent such as acetone.
2) Placed the viscometer an vertical position on a suitable stand.
3) Filled water in dry viscimeter up to mark G.
4) The time was counted in second for water to flow from mark A to mark B. 5)This step was repeated at least 3 time to obtained accurate reading .
6) Then washes the viscometer with sample liquid and then fill it up to mark A, then observed out the time required

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for liquid to flow of mark B.[18]
Formula for viscosity:
Viscosity=Density of the test liquid X time required to flow test liquid/density of of Water X time required to flow water X 100

FORMULATION OF HERBAL COUGH SYRUP:

Sr no	INGREDIENT	QUANTITY REQUIRED [30 ML]	QUANTITY TAKEN [60 ML]	USED
1	Jaggary	7.1 ml	14.2 ml	Base
2	Ginger	4.6 ml	9.2 ml	Antitussive, Expectorant
3	Tulsi	1.6 ml	3.2 ml	Anti Tussive
4	Clove	1.7 ml	6 ml	expectorant
5	Cardamon	2.1 ml	3.4 ml	Aromatic , Flavouring agent
6	Black Pepper	3.2 ml	4.2 ml	Preservative
7	Fennal	3.1 ml	6.4 ml	Flavouring Agent
8	Liquorice	3.0 ml	7.2 ml	Anti Asthmatic
9	Adulsa	3.6 ml	6.2 ml	Anti Tussive

RESULT
The formulation and evaluation of Anti-Asthmatic herbal cough syrup was done with evaluation of following parameter

Sr.no	Tested	Observation
1	PH	5.4
2	VICOCITY	0.03
3	COLOUR	BROWNISH
4	ODOUR	AROMATIC
5	TASTE	SWEET

CONCULSION
Our overall study is determination of general physical and chemical parameters that are essential for the identification of crude drugs on the basis of available standard data .The physicochemical property of herbal cough syrup finished product were

PH :- 5.4
- Viscosity :- 0.03
- The colour :- brownish
- Odour :- aromatic
- Taste:- sweet of herbal cough syrup was satisfactory in physical appearance.

The herbal product is in high demand because of the least possibilities of side effect .The present studies help to develop herbal cough syrup with 40%w/v jaggery base syrup which is effective and safe.

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