IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

Research For Formulation And Evaluation Of Adulsa Cough Syrup

Choudhari Pruthviraj Baban, Pavase Suraj b[2], Shirsath Vitthal[3], Mr. More Sagar Sir Dr. Kolhe .S . D [5]

[1,2] Student Of Bachelor Of Pharmacy, Anand Charitable Sanstha's College Of Pharmaceutical Science And Research ,Ashti, District-Beed. Maharashtra, India.

[3]Assistant Professor Dept., Of Chemistry,

[4]Professor Dept. Of Pharmaceutics, Principal Anand Charitable Sanstha's College Of Pharmaceutical Science And Research ,Ashti, District- Beed. Maharashtra, India.

Abstract:

Adhatoda vasica (Adulsa) is the main active ingredient of a herbal cough syrup that is being developed and evaluated in this study. Because of its well-established bronchodilatory, expectorant, and anti-inflammatory qualities, Adhatoda vasica is a useful treatment for respiratory conditions. The syrup was made with appropriate additions to improve palatability, stability, and medicinal efficacy, following standard pharmaceutical methods. The prepared syrup was assessed for a number of physicochemical characteristics, such as stability over time, microbiological load, viscosity, pH, and organoleptic qualities. The adulsa-based syrup passed acceptable pharmaceutical standards, according to preliminary data, and showed promise as a natural, efficient remedy for cough and related respiratory conditions.

Key Word :

Adult formulation, cough syrup, antitussive, expectorant, Guaifenesin, dextromethorphan, and syrup base

Introduction-

Ayurveda the ancient Indian system of medicine ,strongly believes in polyherbal formulation.This plant based medicine has already gained worldwide attention due its efficacy and safety. In traditional system of medicine consists of large number of medicinal plants

,which covey their potential therapeutic utilize.Vasaka,also called Malabar nut tree ,is well throughtout India.It is tall with several branches ,dense and evergreen shrub.Leaves are larged and lance shaped It is large sized evergreen , shrub growing upto height 2.5 m. Calyx is gamosepalous, 8-12mm long, glabrous, slightly pubescent, deepely five lobel,lanceolate,acute and three nerved. Style is filiform ,bifid ,stigma.It has capsular four seeded fruit.The flower are either white or purple in colour. Adathoda vasica has been used for a multitude of disorders including memory ,tumour ,asthma ,fever. will help loosen phlegm deposits in airways.Adathoda vasica is very well known remedy available everywhere and it is specially popular in rural areas. The plant has pungent and astringent taste. It is cold in action. It normalizes kapha and pitta through mouth,nose or urinary system.It is also useful in reducing aggravation of pitta. The

lemongrass contains a volatile oil with citral (with 70%) citrollel,geraniol and myrcene as its main constituent. Adathoda vasica is applicable to wound for its antibacterial activity and anti-inflammatory properties. Root Decoction used in gonorrhea. Leaf is used in urinary trouble. Vasaka exhibit antispasmodic ,expecotorant and blood purifying qualities. Lemongrass is used for digestive tract spasm,common cold ,fever and mild astringent agent.It is a perennial ,tufted ,aromatic grass with numerous erect culms arising from short oblique ,ring shaped ,sparingly branched rhizome.Lemongrass is additionally a folk remedy for coughs ,hypertropy ,leprosy,malaria.In Africa and Asia it is considered as antitussive, antiseptic ,stomacies and antirheumatic.

Its disruptive effects drive many patients to consult their doctors and underpin a multi-million dollar industry in over-the-counter remedies.The liquid mixture is given in1/2 ounce doses. A liquid preparation of vasaka known as vasasav given in half ounce measures after the principle meals

,reduce production of cough (Phlegm) amd relieves excessive coughing. The juice of vasaka leaves softens the bronchial tube. It is also used in reducing aggravation of pitta and discomfort due to jaundice.A root and bark possess a virtue well- known foe their expectorant properties. If well known patented expectorant remedies failed to give you relief ,by means try this home remedy.

Herbal medicines are the part od a wide range of treatment such as phytotherapies,hydrotherapies and traditional medicine ,few which are applied in coventional medicine. Herbal cough treatment with proven clinical efficacy include thyme based preparation which are recommended as expectorant in current European guidelines in cough medicines beacause it serves multiple function acts as lubricant. Menthol is a waxy,crystalline substance ,clear and white in colour.It is used in terms relief of minor sore throat. Turmeric is also known as golden spice

. Piperine is the major active component of black pepper and when combined in a complex with curcurmin has shows to increase bioavailability 2000 %.

According to WHO : about 80% of the world population still uses herbs and other traditional medicines for their primary health care needs.

1. Aim and Objectives-

Aim - Formulation and Evaluation of Adulsa Cough Syrup

Objectives -

- To prepare and evaluate Cough Syrup.
- To prepare and evaluate Adulsa,lemongrass,turmeric,menthol,extract by drying and mixing.
- To evaluate antitussive activity of adulssa and antioxidant activity of turmeric.
- To instimateAnalgesic ,antioxidant activity of turmeric and antitussive activity of Adulsa.
- To evaluate Vasoactive activity of menthol in Cough Syrup

2. Drug Profile-

Adathoda Vasika

Adathoda vasika is tall, branched,dense and evergreen shrub.

Fig no- 1

Leaves are large and has capsular four seeded fruit.The flowers are either white or purple in colour. The leaves , flowers fruit,roots are extensively used to treat cold cough ,whooping cough ,chronic bronchitis ,asthma ,expectorant . Vasaka is based on sankrit name its hindi name is Adulsa and in marathi it is known as vasuka.

Biochemical Properties-

Adathoda Vasica revealed the presence of alkaloids, phytosterols , polyphenolics and glycosides as major class of compounds ..

Plant Parts Used of Adathoda Vasica-

The leaves ,roots,flowersand stem bark of this plant are used in medical application.

Identification Tests Of Adathoda Vasica

Phytochemical qualitative analysis- Plant extract which has freshly prepared were subjected to standard phytochemical analysis to detect the phytochemical constituents like Alkaloid (Quinazoline)

Test of Alkaloids

A) Dragendorffs Test : Take few mg of extracts sample and dissolved in 5ml water. Then 2 M hydrochloric acid added until an acid reaction developed. In this mixture ,1 ml of dragandroff reagent (Potassium bismuth iodine solution) was added. If alkaloids present in sample extracts ,it formed orange red precipitates.

B) Wagners Test : Acidify the plant extract sample with hydrochloric acid (1.5 % V/V) and added a few drop of Wagners reagent (iodine pottasium iodide solution) in the test tube .It formed reddish brown precipitates which indicate the presence of alkaloids.

C) Mayers Test : 2 ml of plant extract sample was taken and 2 - 3 drops of Mayers reagent was addedTest for Tannins.

A) Taken the sample of plant extract in the test tube and added ferric chloride solution. If tannin

present in the sample ,dark blue or greenish black coloured appeared.

B) Taken the sample extracts and added potassium cyanide. If produced deep red colour.,which indicate the presence of cyanide.

C) Potassium dichromate was added in to sample extracts .yellow precipitates was formed indicate presence of tannins.

Test for Flavonoid

A) Shinoda test : drug solution + Mg turning + conc. HCl drop wise,pink scarlet ,crimson red or occasionally green to blue colour appears in few minutes.

B) Alkaline reagent test : drug solution + NaOH ,intense yellow colour is formed which turns to colorless on addition of few drops of dil. Acid

C) Zinc HCl test : drug solution + zinc dust + conc. HCl red colour after few minutes.

D) Lead Acetate Test : To small quantity of above residue ,lead acetate solution was added and observed for apperance of formation of yellow coloured precipitates.

Liquorice

Fig no- 2.

Common Name : **Liquorice** Family :

Fabacea

Biological Source : Liquorice is derived from the dried roots and stolons of the plant Glycyrrhiza glabra.

Uses : 1) Peptic ulcers.

2 Upper respiratory infections

Turmeric

Fig no- 3

Common Name : Haldi

Family : Zingiberaceae

Biological Source : It is extracted from rhizome of C.longa Uses : 1)It helps in increasing antioxidant in body.

2) It is used in heartburn.

Cardamom

Fig no- 4

Common Name : Elaichi Family : Zingiberaceae

Biological Source : Cardamom is derived from the dried, ripe seeds of plants in the genera Elettaria and Amomum

. Uses : 1) Cardamom is used for digestion problems including heartburn, intestinal spasms

Peppermint

Fig no- 5

Common Name : Mentha Family : Lamiaceae

Biological Source : The biological source of spearmint is its fresh or dried leaves

Uses : 1) May help in relieve digestion

2) It help sooth throat and make brathing seem easier.

Cinnamons

Fig no- 6

Common Name : Daalchini Family : Lauraceae

Biological Source : Cinnamon is derived from the dried inner bark of trees belonging to the genus Cinnamomum

Uses : 1) To reduce pain related to cold sore.

2) Used as expectorant.

Ocimum Tenuifloram

Fig no :- 7

Common Name : Tulsi Family :

Labiatae

Biological Source : Fresh and dried leaves Uses : 1) It has antitussive property.

2) Helps in fight acne

Clove

Fig no:-8

Common Name :Lavanag

Family : Myrtaceae

Biological Source: The dried blossom bud of the evergreen Syzygium aromaticum tree is the biological source of cloves.
Uses: 1) mostly as a spice in food preparation, but also in traditional skincare and medicine2) Clove oils, dried flower buds, leaves, and stems are used to make medicine

Honey

Fig.09

Common Name: Madhu

Family : **Apidae**

Biological Source : Honey's biological source is the nectar and/or honeydew produced by plants, which is then gathered and processed by bees

Uses : [1] Honey has diverse uses, ranging from culinary applications as a natural sweetener to medicinal and topical treatments

[2] Cough Relief: Honey can soothe sore throats and act as a natural cough suppressant, particularly for children

Gingger

Fig.10

- Comman Name : Ale.

Family: Zingiberaceae

Biological Source : The biological source of ginger is the rhizome (underground stem) of the plant Zingiber officinale

Uses : [1] Ginger was used as a flavoring agen

Material and Method-

Collection of Crude Drugs-

Fig no:-11

Fresh plant of Cymbopogon citrus and Adathoda vasica were collected from herbal and botanical garden then shade dried and powedered was prepared by passing through sieve #40 and kept in airtight polythene bags for further study. Rest of the crude drugs powder drugs like turmeric ,yashtimadh,tulsi and black pepper were purchased from local market.

Chemicals and Instruments-

Solvent and reagents were procured from research lab.

Ostwald Viscometer ,Specific gravity bottle

Formulation table

Ingredients	**F1**	**F2**	**F3**	**F4**
Adulsa (Adathoda Vasica)	80gm	70gm	50gm	40gm
Lemongrass (Cymbopogon Citrus)	10gm	20gm	30gm	40gm
Turmeric (Curcurma Longa)	0.60gm	0.50gm	0.30gm	0.30gm
Menthol	0.10gm	0.20gm	0.10gm	0.10gm
Camphor	0.03gm	0.03gm	0.03gm	0.03gm
Yashtimadh (Glycorrhiza Glabra)	1.50gm	1.50gm	1.80gm	1.80gm
Tulsi (Ocinum Sanctum)	1.0gm	1.0gm	0.8gm	0.8gm
Cinnamon	0.20gm	0.20gm	0.40gm	0.40gm
Black pepper (Piper nigram)	0.30gm	0.30gm	0.20gm	0.10gm
Javakhar (Potassium Carbonate)	0.30gm	0.30gm	0.20gm	0.10gm
Syrup base	q.s	q.s	q.s	q.s

METHOD OF PREPARATION:

Procedure:

1. Preparation of Raw Materials:
Clean and crush all herbal ingredients except honey and peppermint oil (if used instead of leaves).

2. Decoction:
Add all crushed ingredients (excluding honey and peppermint oil) to 500 ml of water.
Boil gently and reduce to approximately 100–150 ml over low heat.
Allow to cool slightly.

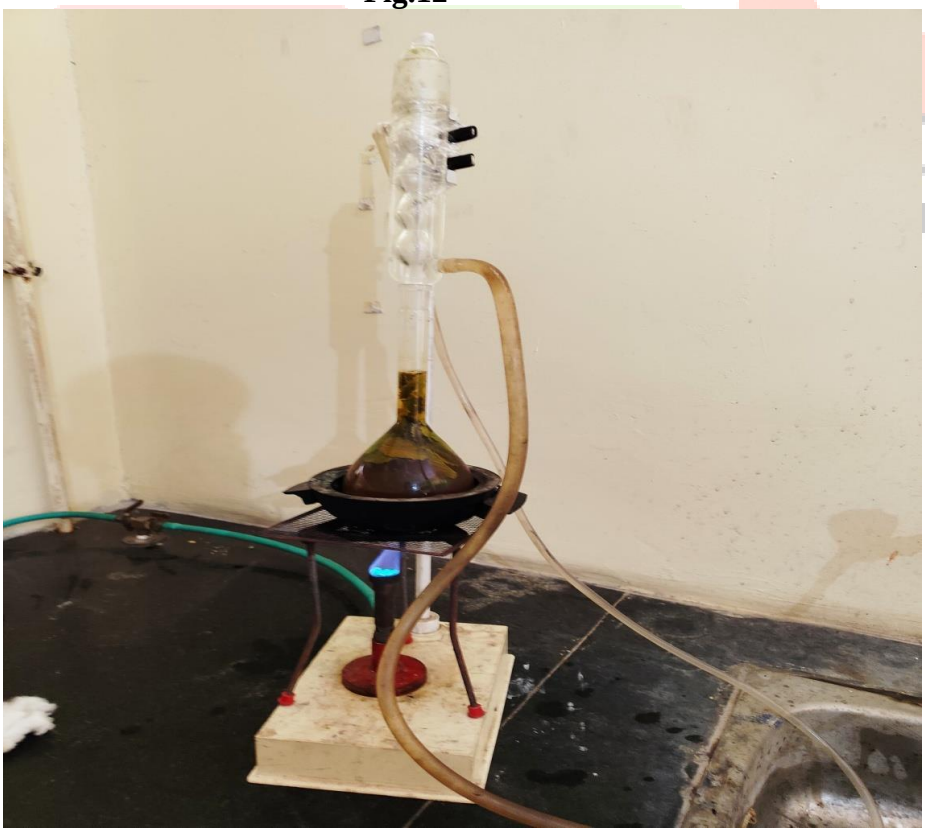
3. Filtration:
Filter the decoction using muslin cloth to remove coarse particles.

4. Syrup Formation:
Add sugar or jaggery to the filtrate and heat gently until a syrupy consistency is achieved (~1.3–1.35 g/ml density).
Let it cool to below 40°C.

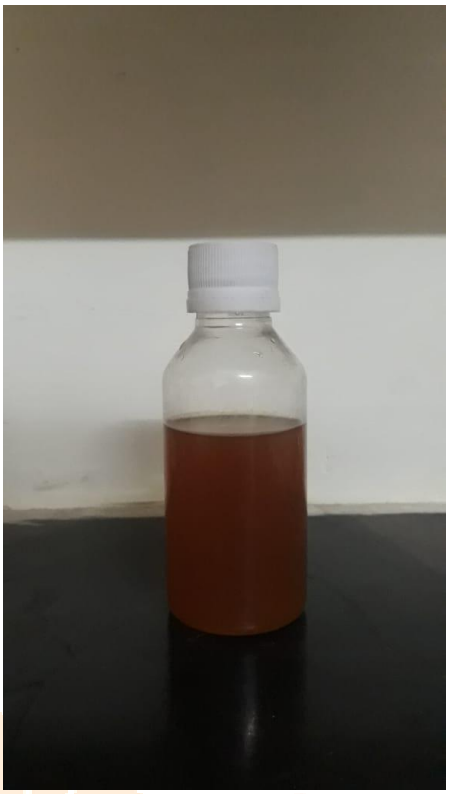
5. Add Final Ingredients:
Add honey and peppermint oil (if not using leaves earlier).
Mix well.

6. Packaging:
Fill into sterilized amber glass bottles.
Label and store in a cool, dry place.

Fig.12



Evaluation parameter for Formulation-



Sr. No.	Test	Procedure
1	Colour Examination	i. 2ml of syrup was taken on a watch glass ii. Watch glass was placed again stwhite background under white tube light. iii. Colour was observed.
2	Odour Examination	i. 2ml of prepared syrup was taken and smelled by an individual. ii. The time interval between two smelling was 2min to nullify effect of previous smelling.
3	Taste Examination	A pinch of final syrup was taken and was examined on test buds of the tongue
4	PH D Etermination	i. 10ml of prepared syrup was taken in100 ml volumetric flask. ii. Makeup volume upto100ml with distilled water. iii. Sonicate for10min iv. pH was measured using digital pH meter

Examination of Odour-

The smelling of two separate preparation in between time interval was kept for 2 min to cancel the effect of previous smelling.

Examination of Colour-

In a watch glass was taken 5 ml final cough syrup preparation and then it placed against white tube light .It was detected for its colour by its naked eyes.

Determination of Taste-

In that a pinch of final cough preparation was taken and then observed for its taste on the taste buds of

the toungue.

Viscosity-

The thickness of cough syrup plays major role in quality control

Specific Gravity-

Carefully clean and dry pycnometer was selected and calibrated by filling with freshly boiled and cooled water at 25 ° C and weighing the ingredients. Then the temperature of filled pcyncometer adjusted to 25 ° C .In that any excess syrup was removed and weight was taken the tare weight of pycnometer was removed from filled weight. Specific gravity of final syrup was obtained by measure out the weight of the syrup consist in the pycnometer by the weight of water consists ,both are determined at the 25 ° C.

3. Result and Discussion-

After evaluation of all preparation (F1,F2,F3) ,the stable formulation found to be F3 .The result obtained in this study suggests that the herbal formulation possess Antitussive activity. The component in herbal formulation are selected are found to be preventive and curative in action. Syrup prepared passes all the physical parameters and shows significant antitussive activity.

Sr. No.	Parameter	Observation/ Value	Conclusion
1	Colour	Yellowish brown	Excellent
2	Odour	Pleasant	Excellent
3	Taste	Bitter	Excellent
4	pH	6.0	Excellent
5	Density	1.06 kg/m^3	Excellent
6	Viscosity	165 (N s m^{-2})	Excellent

Table No. 3 Results

4. Conclusion-

This project's objective was to create and assess herbal cough syrup. We now have a better understanding of what cough is, its various kinds, and the factors that contribute to it thanks to this study. A small study was conducted on herbal remedies for cough. According to the study, herbal remedies are more advantageous than allopathic ones, which employ conventional medications such Herbal medications have fewer or no adverse effects. Many people prefer using herbal remedies. We can better understand cough and preventative actions thanks to this study. All three formulations' pre-formulation investigations met specifications. Three formulations were made, and tests for color, taste, odor, and pH were conducted. This study will help us understand how effective herbal cough syrup is in comparison to syrups made of chemicals.

Reference-

1) **Lewis K, Ausubel FM** (2006) Prospect for plant -derived antimicrobials . Nature Biotechnology **24** 1504- 1507
2) **Kokate CK, Purohit AP,Gokhale SB** (1998) Pharmacognosy (23rd Edtn), Nirali Prakashan ,Pune ,pp 106- 114
3) **Khandelwal KR (**2005**)** Practical Pharmagnosy : Tecniques and Experiments (13th Edn) , Nirali Prakashan ,Pune, India.
4) **R.Ahmed ,V Raja ,M Sharma** Hepatoprotective Activity of Ethyl Acetate Extract of Adathoda Vasicain Swiss Albino Rats, Int J Cur Res. Rev, **2013** ,5, 16 -21
5) **Padmaja M ,Sravanthi M, Hemalkatha KPJ** .Evaluation of Antioxidant Activity of Two Indain Medicinal Plants .Journal of Phytology , **2011** 3 (3) ,86 - 91
6) **Khan M A.Muheet e Azam** (New Delhi) Indian Pharmcopeia ,Goverment of India, Ministry of Health and Family Welfare, Delhi,p 554 (2018)
7) **J. Sharma** Encyclopedia of Pharmaceutical Technology ,Marcel Dekkar ,Inc .USA ,edn 2, 252 - 254 (2001)
8) Indian Herbal Pharmacopeia ,Published by Indain drug manufacturer Association ,Mumbai,India, Revised new Edition pp .29 - 32 (20020
9) **Atal C. K,** Chemistry and Pharmacology of vasicine ,Indian Drugs ,1980 ; 15 -18
10) **Chandoke N.** Vasicine the alkaloid od Adathoda Vasica ,Indian Drugs, 1982, 24; 425 - 426
11) **Dhuley J. N**, Antitussive effect of Adathoda vasica extract on mechanical and chemical stimulation - induced coughing in animals. 1999; 67 ; 361- 365
12) **Gupta K. C**, Chopra IC Antitubercular action of Adathoda vasica . Indain J Med Res 1954, 355
13) **Amin A. H**, Mehta DR. A bronchodilator alkaloid from Adathoda vasica Nees, Nature 1959, 184
14) **Bhat V.S, Mardikar B.R**, Adathoda Vasica an ayurvedic medicinal plant ,Indian Drugs 1978
15) **S .Agarwal and R.H.Singh** , proceedings of International Congress ,Ayurveda,28-30th January,209,p(2002)
16) **D.B. Ananranarayan** , Proceeding of International Congress on Ayurveda,28-30thJanuary,p(2002)
17) **Dhar M.M., Dhar M.D.** Screening on Indian plants for biological activity,IndianJ.1966
18) **ZamaMMS,Singh H.P. ,Kumar** A Comparative study of AdathodaVasica, 1991
19) **Lahiri P.K. ,Pradhan S.K.** Pharmaceutical evaluation of vasicinol ,1964,219-229
20) **ModakA.T.,Rao MRR**,Hypoglycemicactivity of AdathodaVasica,1966,205-206
21) **Vijaya S Vasudevan**,The effect of some medicinal plant activity of digestive enzymes,Ind Drugs, 1994,215-217