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NATURES ABET HERBAL MUCUS COUGH SYRUP: *DAEMIA EXTENSA*

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ABSTRACT

The leaf of *Daemia extensa* R. Br. Family Mantis is reported to have good medicinal values in traditional system of medicines. In present investigation, the herbal syrup from leaves of *Daemia extensa* was developed. Formulated herbal syrup then subjected to evaluation of production quality by different methods stated as per official compendia. Such evaluation has unique pose in improvement of new formulations.

KEYWORDS

Daemia extensa R. Br and Herbal cough Syrup.

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INTRODUCTION

Cough is a type of physiological mechanism that serves to clear the respiratory passages of foreign material and excess secretions and should not be suppressed indiscriminately¹. Cough is contemplation to be caused by a reflex. It occurs due to stimulation of mechano-or chemoreceptor in throat, respiratory passage or stretch receptor in the lungs². The sensitive receptors are positioned in the bronchial tree, particularly in the junction of the trachea. These receptors can be stimulated

mechanically or chemically e.g. by inhalation of various irritants than nerve impulses activate the cough center in the brain³.

Traditionally cough is classified as either productive, i.e. producing mucus usually with expectoration, or nonproductive (dry)⁴. Therefore, the use of an effective anti-tussive agent such as Dextromethorphan or codeine to suppress the debilitating cough suffered by such patients seems appropriate⁵. Non-Narcotic anti-tussive agents anesthetize the stretch receptor located in respiratory passages, lungs and pleura by dampening their activity and thereby reducing the cough reflex at its source. Narcotic anti-tussive agents depress the cough center that is located in the medulla, thereby raising its threshold for incoming cough⁶.

Cough is sometimes due to

- Environmental pollution, sometimes as a
- Generally self-inflicted injuries as is seen in smokers.

Cough could be of different types

- Productive,
- Dry,
- Spasmodic etc
- Most families prepare home remedies such as tea with honey or a mixture of one part lemon juice and one part honey⁷.

Expectorants are the mixtures have a definite but restricted place in medicine. They are not curative, but undoubtedly alleviate the symptoms of patients in certain stages of bronchitis or tracheitis⁸. They help to hoist secretions from the respiratory passages. Even though they are used by 10% of American kids weekly, they are not suggested in kids 6 years of age or younger due to lack of support showing effect, and concerns of harm⁹.

Cough Syrup is liquid dosage form; the oral use of liquid pharmaceutical has generally been vindicated on the basis of ease of administration to those individuals who have difficulties in swallowing solid dosage forms. Syrups are concentrated mixture of sugar and purified water. The high sugar contented distinguishes syrups from other types of

solutions. Syrups may or may not contain medication or added flavoring agents.

Advantages of liquid dosage form

- Homogeneous liquid.
- Drug is in solution, instantly available for absorption.
- Ease of administration.
- Oral liquid dosage forms habitually are faster acting than solid dosage forms.
- For patients who have difficulty swallowing, oral liquid medications may be easier to take than an oral solid dosage form.
- Liquid medications may be used where solid dosage forms are not convenient to administer.

Advantages of syrup

- Ability to disguise the bad taste of medications.
- Syrups are thicker than aqueous solutions, therefore only a portion of the medication dissolved in the syrup comes in contact with the taste buds. The remnants of the medication are held above the tongue by the thick syrup so it is not tasted as it is swallowed.
- The high sugar contented of syrups gives them a sweet taste that helps obscure the bad taste of the medicine.
- The thick character of syrups also has a soothing effect on irritated tissues.

Rational of preparation of cough syrup¹⁰

The ingredients of the routinely used cough syrups mostly contain those ingredients, which cause:

- Drowsiness,
- Irritability or dryness in mouth.
- The requirements fluctuate from person to person yet, faster symptomatic relief and trouble-free nature of the product remains supreme.

An attempt to prepare a poly herbal formulation were undertaken in the present study, after reviewing various literatures for *Daemia extensa* R. Br. leaf belongs to Family Mantis.

Collection of plant and Preparation of crude extract

The plant was collected from the tropical regions of Devlali Camp, Nasik and was identified by a taxonomist. The plant material was prepared free from soil and other adulterants and vegetative debris. The dried plant material was grinded to coarse powder with the help of a grinder. The powdered plant material (1kg) was subjected to maceration in aqueous in amber colored bottle at room temperature for 7 days with occasional vigorous shaking at room temperature and keeping the extract in the dark room. The filtrate was obtained by filtering the mixture through a muslin cloth and then through a whatman qualitative grade 1 filter paper. The filtrate was evaporated on a rotary evaporator distant to a vacuum pump at 37°C under reduced pressure to thick paste like consistency. The extract obtained was stored at 4°C in air tight jars for further study¹¹.

Method of Preparation of simple syrup

The simple syrup (66.67% w/v) was prepared as per British pharmacopoeia.

To prepare final herbal syrup, one part of decoction was mixed with five parts of simple syrup (1:5) required quantity of methyl paraben and piperment oil was added to the above mixture. Solubility was tartan by observing the clarity of solution visually. The final developed herbal syrup was then subjected to evaluation of production quality as per official standards¹².

Evaluation of formulated cough syrup

Physicochemical parameters like Color, Odor, Taste, Specific gravity, Density, pH, and acid value were analyzed as per the standard procedure mentioned in British Pharmacopoeia. The color, odor and taste were also recorded as shown in Table N.1. The stability study of herbal syrup was carried out at different temperature and at relative humidity^{13,14}. Phytochemical constituent screening was also carried out.

RESULTS AND DISCUSSION

The primary objective of this work was to develop herbal syrup from leaves of *Daemia extensa* R. Br. The development of such herbal formulation will mark an important advancement in the area of phyto-pharmaceuticals. The present research examines development and evaluation of herbal syrup.

The prepared liquid oral herbal formulation showed good elegance and palatability. The developed herbal syrup was evaluated for measurement of pH, specific gravity 1.19 gm/ml (Table No.1). The result of stability study of final herbal syrup indicated the homogeneity of syrup without turbidity at storage temperature. Thus it can be concluded that these herbal syrup could be suitable dosage form for leaves of *Daemia extensa* R. Br.

Table No.1: Quantitative evaluation of developed herbal syrup

S.No	Parameters	Observed Values
1	Color	Greenish brown
2	Odor	Sweet aromatic
3	Taste	Sweet
4	pH of Decoction	6.0
5	Specific Gravity of Decoction	1.08 gm/ml
6	Density of Decoction	1.34 gm/ cm ³
7	pH of final Herbal syrup	6.7
8	Specific gravity of Final Herbal Syrup	1.19 gm/ml
9	Density of Final Herbal Syrup	1.10 gm/cm ³



Figure No.1: Leaf of *Daemia extensa* R. Br

CONCLUSION

The present study has provided an experimental evidence for protection against cough by the formulated poly herbal cough syrup. All the above findings support the traditional claims in Ayurveda for use of this formulation in the treatment of cough by virtue of its anti-tussive activity. The Cough suppressant activity elicited by the formulated herbal syrup may also be attributed to the presence of some phyto constituents.

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CONFLICT OF INTEREST

We declare that we have no conflict of interest.

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