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Preparation and Evaluation of Polyherbal Cough Syrup

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Abstract: *Polyherbal formulations are increasingly recognized for their potential in treating various health conditions due to synergistic effects of multiple plant extracts. This abstract focuses on a polyherbal cough syrup developed from a blend of well-known medicinal herbs. The formulation aims to alleviate cough symptoms effectively while ensuring safety and tolerability.The ingredients of the polyherbal cough syrup were selected based on their historical use in traditional medicine and supported by modern pharmacological studies demonstrating their efficacy in managing cough and related respiratory conditions. Key herbs included in the formulation possess expectorant, antitussive, and soothing properties, targeting both productive and dry coughs*

Keywords: Polyherbal formulations

I. INTRODUCTION

Polyherbal cough syrups are formulations composed of multiple herbal ingredients known for their therapeutic effects on respiratory health. These syrups blend various botanical extracts, each selected for its specific properties that may include soothing irritated throat, reducing cough severity, and promoting respiratory comfort. By combining these ingredients, polyherbal cough syrups aim to provide a holistic approach to managing cough and associated symptoms, often leveraging the synergistic effects of different herbs to enhance efficacy. These formulations are typically designed to be safe and suitable for both adults and children, offering a natural alternative to conventional cough remedies.

- Tulsi (Holy Basil): Known for its anti-inflammatory and antimicrobial properties, Tulsi helps soothe throat irritation and supports respiratory health.
- Adhatodavasica (Vasaka): Contains expectorant properties that help loosen mucus and ease coughing, making it beneficial for productive coughs.
- Liquorice (Glycyrrhizaglabra): Has demulcent properties that coat the throat and provide relief from dry, irritating coughs. It also has anti-inflammatory effects.
- Ginger (Zingiberofficinale): Known for its warming and soothing properties, ginger can help alleviate throat irritation and cough symptoms.
- Honey: Often used as a base or sweetener in polyherbal syrups, honey has antimicrobial properties and can help soothe a sore throat.
- Menthol: Derived from peppermint or other mint oils, menthol provides a cooling sensation that can relieve throat irritation and suppress cough reflex.
- Indian Gooseberry (Amla): Rich in vitamin C and antioxidants, amla boosts the immune system and helps in combating respiratory infections

Polyherbal cough syrups are formulated to address different types of coughs (dry, productive) and provide relief from associated symptoms like throat irritation, while also supporting overall respiratory health. They are favored by many individuals seeking natural alternatives to synthetic cough medications.

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II. MATERIAL AND METHOD

COLLECTION AND AUTHENTIFICATION:

Plant materials were collected from authenticated herbal Suppliers and their genuine was checked and confirmed By comparing with the standard. The raw materials were Primarily identified by the Ayurvedic parameters such as Varna (color), Gandha (odour). Ruchi (taste), Aakruti, (shape) and Pariunana (size)2 The relevant plant parts of The seven plants chosen for the polyherbal formulation Were separately shade dried and powdered.

MONOGRAPHIC ANALYSIS OF HERBS:

The herbs were evaluated for loss on drying, ash value And extractive value to confirm their standard Specifications according to the Ayurvedic Pharmacopeia Of India.

PHYTOCHEMICAL SCREENING FOR RAW MATERIALS:

The detection of the active principles in medicinal plants Plays a strategic role in the phytochemical investigation As well as for linking the phytochemical to its Pharmacological actions. Identification of phytochemical Constituents present

Analysis of Heavy Metals for Raw Materials:

The heavy metals were analysed both qualitatively and Quantitatively as per the Ayurvedic pharmacopoeia of India 3.

Microbial Load Analysis:

For the safe use of the plant drugs, microbial load was Tested for all raw materials which include Total aerobic Count, Total yeast and moulds count, absence of Escherichia coli, Salmonellae. Clostridia and Shigella, as Per WHO guidelines 5.

FORMULATION TABLE

Ingredients	Quantity taken
Turmeric	100gm
Ginger	50gm
Tulsi	20gm
Vasaka	60gm
Liquorice	100gm
Sucrose	66.67
Water	q.s

Instrument Use For Formulation: beaker, stir, weight balance, conical flask, measuring cylinder, tripotstant, heater, phmetre, etc.

Formulation of Poly Herbal Cough Syrup:

Preparation of simple syrup IP:

66.67gram of sucrose was weighed and sufficient Distilled water Was added to it. It was thenHeated to Dissolve all the sucrose And the final volume was Adjusted to 100ml by adding hotDistilled water17-18.

Preparation of decoction:

Specific amount (each 100gm) of powdered tulsi. Vasaka, turmeric, liquorice, ginger, honey were taken On Whatman Filter paper and mixed properly. The Mixture was taken in a 5000ml round bottom flask and Sufficient distilled water was Added to it. It was then Boiled till the final volume reduced to th of the initial Volume. The mixture was cooled and filtered Through Buchner filtration assembly. At the end the filtrate was Taken to mix with the simple syrup.

Preparation of final product:

1 part of the decoction was mixed with five parts of the Simple syrup IP. Required amount of methyl paraben Was added it as a preservative. The solubility of each Ingredient was checked by observing visually in the Laboratory Vicinity.

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EVALUATION OF POLYHERBAL FORMULATION

Physiochemical parameters	Observed values
Colour	Brownish
Odour	Aromatic
Taste	Sweet
pH	8.1
Density	1.20gm/ml
Viscosity	8.5
Specific Gravity	2.1

III. RESULT AND DISCUSSION

Based on the evaluation of all preparations the stable formulation identified is 'F1'. The results obtained in this study suggest that the herbal formulation prepared is more effective than other batches.

The prepared formulation of the complete polyherbal cough syrup underwent various quality testing parameters to ensure maximum effectiveness and safety. It has been concluded that the herbal cough syrup meets all tested parameters and possesses properties to treat cough, including antitussive, anti-inflammatory, antimicrobial, and expectorant properties, providing relief from cough.

IV. CONCLUSION

In the present study, plants were selected based on their pharmacological actions, and a cough syrup was subsequently prepared. This herbal cough syrup, incorporating various medicinal plants, showed equal effectiveness in treating cough.

The study found that the formulation was significant in terms of both physical parameters and pharmacological effects as a cough syrup. These results are due to the synergistic action of the plant constituents, enhancing their pharmacological effectiveness. This study serves as a useful example for using similar plant-based drugs in the formulation of cough syrups and other polyherbal treatments for different diseases.

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