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FORMULATION AND EVALUATION OF HERBAL COUGH SYRUP USING JAGGERY BASE

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ABSTRACT: Medicine presently used to deal with cough are the various maximum notably used over the counter drug treatments in the international, in spite of a recent evaluation suggesting that there is a bit evidence to comparable drug treatments produce any significant efficiency. Syrup is commonly useful and famous dosage form which is used for the remedy of cough and bloodless. We organized the herbal cough syrup by means of including Jaggery base and decoction of natural capsules together with Pudina, Tulsi, Cinnamon, Jaggery and other natural excipients. The natural cough syrup is formulated by using decoction method. Including the decoction of natural capsules with base of Jaggery is beneficial to the formulation for thick and preserves the system. That turned into beneficial to increase the shelf lifestyles of components of natural syrup. The brought Jaggery sweetener also can help to growth the palatability of some natural drugs. The ultimately increase the herbal cough syrup with the bottom of Jaggery. The purpose of this examine is to develop a herbal cough syrup and examine the parameters consisting of, coloration odour, taste have been as compared with the changes in multiplied balance checking out. Excellent of very last natural cough syrup changed into evaluated with the parameters such as physical appearance like shade, odour, taste, pH. Syrup acts as an expectorant for treating respiration issues, inclusive of colds bronchitis, cough, asthma and upper respiration conditions.

INTRODUCTION: Herbal plants and formulation are used for the many types of disease like cough syrup and many more other diseases. In cough syrup, many types of herbal plants are used, for example ginger, Tulsi, honey, clove. For many years, the entire plant has been used to make medicinal herbs.

Herbal formulations are most commonly used in development as well as developing countries as health care aid. Herbal syrup it is a defined as a prepared and combination and concentration decoction with Honey sugar or some time use alcohol.

The base of such syrup is a strong herbal decoction and mixing a decoction with sugar honey help to thicken preserves the decoction ¹. Herbal plants and formulation are used for many types of disease like cough syrup and other disease. The cough syrup many types of herbal plant are used for Pudina, Tulsi, Cinnamon, honey in that whole plant are



used for making herbal medicine the many years. Herbal formulation a most commonly used in development as well as developing countries as health care. Cough syrup medication is a liquid dosage form use of oral liquid pharmaceutical has been confirmed on basic ease of administration to those people who have the problem in the swallowing of solid dosage from medication. Syrup is a concentrated solution containing sugar and purified water. The syrup may or may not be containing medication or mixed flavoring agent. When the syrup is without a medication, but the flavoring agent present are known as flavored or non-medicated syrup².

Flavored syrup is frequently used as vehicle for the unpleasant test of medications results (found as) is medicated syrups. Syrup are present in syrup in high amount predisposes then to the bacteria infection, so they are often. Use as preservative³. Syrup are very prominent delivery vehicles used for the anti-tissue medication because they give a more soothing to swallow (ingest) than the tablet and capsule. This medication is quickly observed. There are some available synthetic cough preparations they cause several adverse effects. So, the present study was shown to enlarge and in violet herbal cough syrup carry natural element having no side effect⁴. In general health professionals have difficulties accessing effective and safety natural treatment (therapy). A number of instances of allopathic medication product has not been studied in large scale and generally them solid without in knowledge of their mechanism of action or side effect. Even so the use of complementary medication is sometime helpful, and the

confirmation is same time helpful and the confirmation the effectiveness of some this all-medication literature is limited, they frequently sold with the drug store⁵. A successful formulation of liquid, as well as other dosage forms, requires a blend of scientific acuity and pharmaceutical "art"⁶. Oral liquid medicines are being superseded gradually by tablets and capsules because of deleterious changes take place more readily in solution⁷.

Nevertheless, there are still a large number of liquid oral preparations available in the official books. The fact is that the absorption of medicaments in solution from the GI tract into the systemic circulation may be expected to occur more rapidly than other oral dosage forms of the same medicinal agent⁸. Ayurvedic formulations are preferentially administered by oral route⁹ and most of the orally administered Ayurvedic formulations belong to liquid form of drug or drug combination. However herbal medicinal combination¹⁰.

MATERIAL AND METHOD:

Preparation: Following herbal part are used in the formulation of herbal syrup.

TABLE 1: LIST OF MATERIALS

Sr. no.	Ingredients
1	Tulsi
2	Pudina
3	Tulsi
4	Cinnamon
5	Jaggery
6	Distilled water



FIG. 1: PUDINA



FIG. 2: TULSI



FIG. 3: CINNAMOM



FIG. 4: JAGGERY



FIG. 5: OTHER INGREDIENTS

Pudina:

Synonyms: Peppermint, fragrant, *Mentha* leaves.

Biological Source: Pudina consists of dried leaves and obtained from flowering tops of *Mentha piperita* belonging to family *Lamiaceae*.

Chemical Constituents: The main constituents of menthol (40.7%) and menthone (23.4%) further components were (%+-) menthyl acetate, 1, 8-cinecole, limonene, beta-pinene and beta-caryophyllene.

Uses: Flavoring agent Carminative, digestive, spasmolytic. Also use in one herbal syrup preparation¹¹.

Tulsi:

Synonyms: Holy basil, sacred basil. Biological source: It consists of dried leaves of *Ocimum sanctum* linn. Belonging to family *labiatae*.

Chemical Constituents: Pleasant volatile oil (0.1 to 0.9%) Also consist of 70% eugenol and carvacrol (3%) eugenolmethyl-ether (20%).

Uses: Leave and volatile oil are used in various purposes.

The oil is antibacterial and insecticidal used. Fresh leaves are used in stomachic¹².

Cinnamon:

Synonyms: Cinnamon oil, Ceylon cinnamon, Saigon cinnamon, Chinese cassia, Cinnamon oil aromaticum.

Biological Source: *Cinnamomum zeylanicumis* widely cultivated in Ceylon java Sumatra West Indies Mauritius Brazil and India. Belonging to the family *lauraceae*.

Chemical Constituents: 10% volatile oil, 5 to 10% eugenol, 50 to 60% cinnamon aldehyde.

Uses: stomachic, carminative, flavoring agent, anti arithmetic¹³.

Jaggery:

Synonyms: Gur,

Biological Source:

Chemical Constituents: Approximately 60-85% sucrose, 5-15% glucose and fructose, 0.4% protein.

Uses: Laxative, Sweetening agent, flavoring agent¹⁴.

Method of Preparation: The initial stage in studying medicinal plant is the preparation of plant samples to preserve the biomolecules in the plants prior to extraction. Plants samples such as leaves, barks, roots, fruits and flowers can be extracted from fresh or dried plant materials such as grinding and drying also influences the preservation of phyto-chemicals in the final extracts¹⁵.

The weighed crude drug sample 5g of herbal ingredients. Then herbal ingredients were mixed with 500ml of water. Then attach reflux condenser and materials was boil under carefully by using water bath for 3 hrs. The mixture was boiled until the total volume became one fourth of the volume. Then the decoction was cooled and filtered. Filtrate was taken to prepare final syrup¹⁶.



FIG. 6: PREPARATION OF DECOCTION EXTRACTION

Method of Preparation for Final Herbal Syrup:

To prepared final herbal syrup 16ml of Pudina decoction and 17ml of Tulsi or 17ml of Cinnamon decoction was added ad 50% of Jaggery preservative was mixed slowly by side by side

continually stirring. The final herbal syrup was prepared and then subjected for evaluation. Herbal syrup was prepared and solubility was checking by observing clarity of Solution visually¹⁷.

TABLE 2: MATERIAL FOR PREPARATION OF SYRUP

Sr. no.	Ingredients	Quantity	Activity
1.	Pudina	In 16ml	Antioxidant
2.	Tulsi	In 17ml	Antioxidant
3.	Cinnamon	In 17ml	Antitussive
4.	Jaggery	In 50%	Base viscosity modifier

**FIG. 7: HERBAL SYRUP FORMULATION****Evaluation Parameters:****Formulation Studies:****TABLE 3: RESULTS OF ORGANOLEPTIC CHARACTERS OF FORMULATED HERBAL SYRUP**

Formulation	Colour	Odour	Taste
A	Yellowish brown	Aromatic	Slightly pungent

Formulation was found to be yellowish brown for the optimized batch. The color of the formulation ranges from yellowish brown to dark brown for A, batches respectively

Odour: Table 3 shows the results obtained from odour of formulated batches of syrup. The odour of formulation was aromatic for A, an batches respectively.

Taste: Table 3 shows the results obtained from test of formulated batches of syrup. The test of formulation was shightly pungent for A, batches respectively.

pH: pH of formulated batches of syrup was found to be 6.

Specific Gravity: The specific Gravity of formulation was found to be 6.2 for the optimized formulation B. The value was found to be in the range of 6.0-6.2 for all their formulations.

Stability Testing: Stability testing of the prepared herbal syrup was performed on keeping the sample at accelerated temperature conditions. Nine portions of the final herbal syrup A, B and C were taken kept at accelerated temperature at 4°C. Room temperature and 47°C respectively. The samples were tested for all the physicochemical parameters, turbidity and homogeneity at the interval of 24 hr 48 hr and 72 hr to observe any change.

CONCLUSION: The formulation studies of all these formulations were within specifications. Also, the physiochemical properties of prepared syrup like colour, odour, taste, pH, viscosity were satisfactory but among the formulation is was within the all specification it has proper concentration of honey as per Ip and also a good preservative. The present study helps to develop effective and safe herbal cough with 50% w/v honey as a base of cough syrup.

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