

Formulation and Quality Control of Multipurpose Syrup Using Herbal Extracts

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Abstract: In ancient era, when the people were unaware about the chemical reactions, chemical synthesis, formulations, the various herbs were only remedy for them. Herbs are easily available, cheap in cost and effective on disease. Also it has less side effects. Herbs are rarely harmful, mostly they are free from hazardous effect that's why their daily use is safe. We often use this herb in our day-to-day life like we use lemongrass, ginger tulsii in tea, pudina for various recipes.

Oils which are extracted from various herbs has various theoretical action such as tulsii oil has analgesic, Anti-emetic, expectorant and antipyretic activity. Ginger oil boosts digestion, eases discomfort of stomach and bowel enhances appetite clears the respiratory tract and reduces inflammation. Peppermint oil reduces headache, muscle aches, joint pain and itching. Lemongrass oil has antibacterial, antifungal, Anti-inflammatory and antioxidant properties.

In the scenario of Covid-19 pandemic, many people lost their lives due to lack of immunity. Various synthetic formulations may enhance immunity but it also has some hazardous side effects. Herbal formulation synthesized from oils of ginger, lemongrass, tulsii, pudina, cinnamon has above mentioned properties hence they can be as immunity booster and for various other purpose.

Keywords: Herbs, immunity booster, herbal syrup, antipyretic, analgesic, anti-inflammatory.

INTRODUCTION

For centuries, culture around the world have depended on conventional home grown pharmaceutical to meet their health care require. In spite of restorative and innovative progressions of the cutting edge time, the worldwide demand for home grown cures is on the rise. In truth, its evaluated that this industry grosses approximately \$60billion every year (1 trusted source). A few characteristic cures may be more reasonable and accessible than customary medications, and numerous individuals favor utilizing them since they adjust with their individual wellbeing ideologies.¹¹

Herbal medicines have many advantages like harmless, low cost, no side effect, herbs grow in common places so they available easily, and for consumption or buying no need of prescription. As well as there are some disadvantages of the herbal medicines. Prescription drugs can produce adverse effect if they are mixed with drugs like antidepressant which are taking regular basis. Also herbal medicines having another disadvantage is the risk of self-dosing of herbs which is very rare.¹⁰

The utilize of home grown solutions and phytonutrients or nutraceuticals proceeds to grow quickly across the world with numerous individuals presently turning to these items for treatment of different wellbeing challenges completely different national wellbeing care setting (WHO,2004). This past decades have clearly witnessed a huge surge in acknowledgment and open intrigued in common treatments both in developing and created nations ,with this home grown cures being accessible not as it were in sedate stores, but presently too in nourishment stores and grocery stores. It is evaluated that up to four billion individuals (representing 80% of the world population) living within the creating world depend on home grown therapeutic products as a essential source of healthcare and conventional therapeutic hone which includes the utilize of herbs in seen as an fundamentally portion of culture in those communities (Mukherjee,2002;Bodeker et al.,2005;Bandaranyake,2006)²⁴

Herbal and plants can be taken in different ways and forms, and they include the whole herb ,teas ,syrup, essential oils ,ointments, capsules and tablets that contain a ground and powdered form of a raw herb or its dried extract .Plants and herb extract vary in the solvent used for extraction ,temperature and extraction time and include alcoholic extracts (tinctures) ginger (acidic acid extracts),hot water extract(tisanes),long term boiled extract ,usually roots and bark (decoction),and cold infusion of plants (macerates). There is no standardization and components of an herbal extract or a procedure are likely to vary significantly between batches and procedures.¹⁰

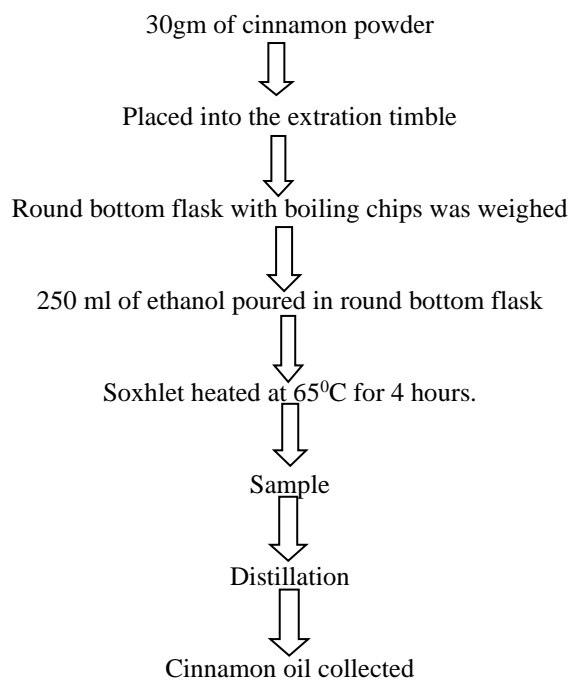
An herbal syrup is utilized to assist reestablish, tone and strengthen frameworks within the body or to advance general health and well being. An herbal syrup could be a arrangement or other arrangement made from a specially chosen collection of plants known as herbs. They are ventured in water and intoxicated either hot or cool, home grown syrup arte accepted to have mending properties extending from remembering muscle and joint torment and expand as distant as hindering a few cancers

MATERIALS AND METHODS

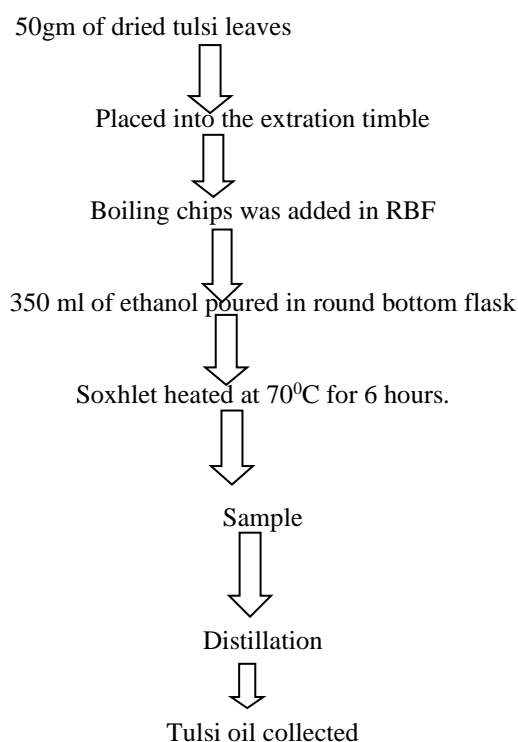
The fresh root of ginger , leaves of tulsii , peppermint ,lemongrass and bark of cinnamon washed with distilled water and kept for dried.

Cinnamon

Soxhlation Method -

**Tulsi**

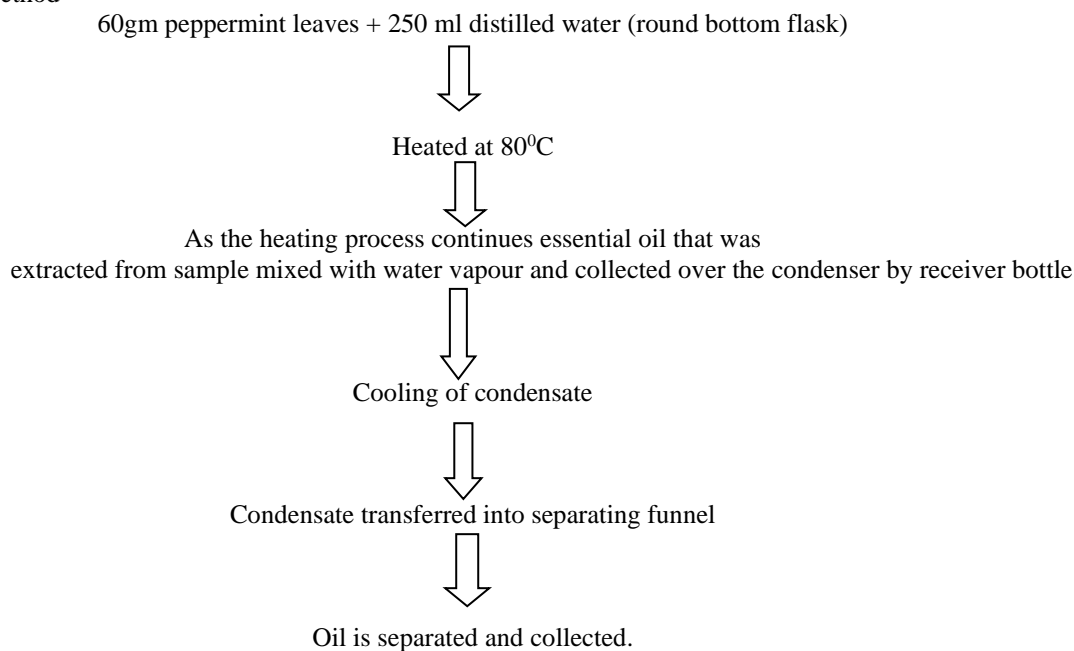
Soxhlation Method –



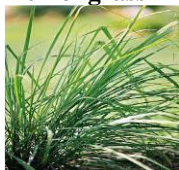
Peppermint



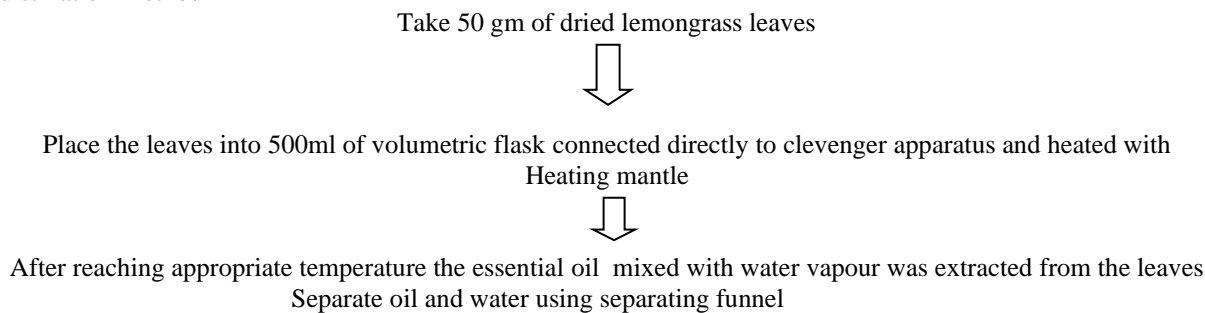
Steam Distillation Method -



Lemongrass



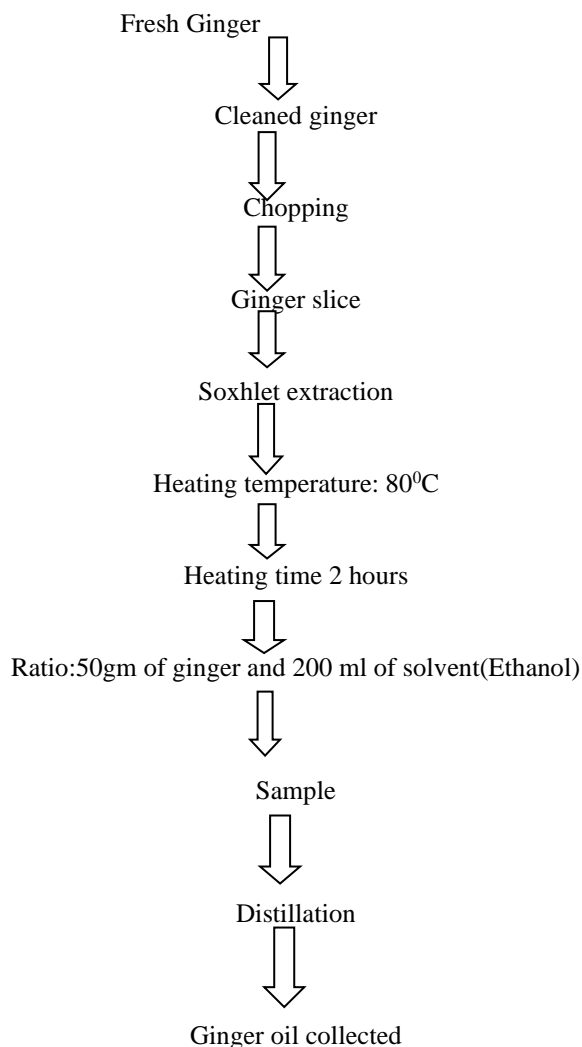
Hydrodistillation Method –



Ginger



Soxhlation Method -



Preparation of Simple syrup –

Add water to sucrose in a beaker and heat on water bath until sucrose dissolves, add sufficient boiling water to produce the final volume

Sr.no.	Ingredient	Quantity
1	Tulsi oil extract	16 parts
2	Ginger oil extract	10 parts
3	Cinnamon oil extract	6 parts
4	Peppermint oil extract	4 parts
5	Lemongrass oil extract	10 parts
6	Syrup I'P 66.7%	Q.S.

Table 1: Formulation of syrup

Evaluation Test

Physical appearance

- **Colour Examination** - 5 ml of syrup was taken and viewed against a white light for its colour by naked eye.
- **Odour Examination** – The final syrup was tested for its odour by smelling 2 ml of the syrup individually.
- **Taste Examination** – A drop of final syrup was placed on the tongue and examined for its taste.

Determination of pH – pH of syrup determined by using pH paper.

Stability Testing (72hr) – The samples were tested for all physicochemical parameters, turbidity of the solution at interval of 24 hr , 48 hr , 72 hr and the changes observed and noted.

Qualitative phytochemical Tests

- **Wagner’s test for alkaloids**

5 drops of Wagner’s reagent were added to 2 ml of immune booster sample. The mixture was warmed for one minute. Formation of reddish brown precipitate indicates the presence of alkaloids.



- **Ferric chloride test for flavonoids**

About 5 drops of 10 % ferric chloride solution were added to 2 ml of the immune booster sample. Colour change to green-blue would indicate the presence of phenolic hydroxyl group.

- **Test for phenols**

2 ml of immune booster sample was treated with four drops of 5 % (weight/volume) glacial acetic acid followed by four drops of 5 % (w/v) NaNO₂ solution. The mixture was shaken for 5 minutes and allowed to stand. The appearance of muddy brown precipitate indicates the presence of phenols.

- **Fehling’s test for sugars**

Equal volume (5 ml) of Fehling’s A and B, were added dropwise to the immune booster sample. The mixture was left to boil for 20 min. The solution was cooled on ice bath to allow precipitation. Formation of brick red precipitate indicates the presence of cuprous oxide which relates to the presence of reduced sugars.



- **Test for saponins –**

2 ml of the immune booster sample was diluted with 10 ml distilled water and vigorously shaken well for 20 minutes in a graduated cylinder. An appearance of 1 cm layer foam indicates the presence of saponins.



RESULT AND DISCUSSION

RESULT

Table 2 – Result for physicochemical parameters.

Batch	Colour	Odour	Taste	pH
1	Orange	Minty	Sweet	3

Table 3 - Physicochemical constituents of immune booster

Sample	Alkaloids	Flavonoids	Phenol	Saponins	Carbohydrates
Immunity Booster	+	+	+	+	+

DISCUSSION

The results for organoleptic properties (displaced in table 2) indicate that there was no change in its colour , odour , test , ph . The presence of physicochemical (Table 3) such as alkaloids , flavonoids , phenol , saponins , carbohydrate in the formulation reported in this study suggest their uses for medicinal purposes. The presence of alkaloids in the formulation suggest analgesic, anti-inflammatory, properties and increase in potential for disease resistance and stress.

CONCLUSION

In conclusion , the presence of saponins confirmed the ability of immune boosting potential of the formulation is supported that saponins could lower the cholesterol level , act as anti carcinogenic agent and immune booster study also establishes that the formulation possesses high conc. of Cu , CO and Zn . Also the presence of saponins justifies the usage of the formulation as immune booster and the presence of flavonoids supports the usage of the formulation as anti oxidant agent.

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AUTHOR'S CONTRIBUTIONS

All the authors have contributed equally for the outcome of the present work.

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