Formulation and Evaluation of Antiulcer Syrup

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Abstract

The majority of herbal syrups are composed of plant extracts based on their constituent ingredients. Similar to other dosage forms, herbal syrup is used in a variety of treatments. Nowadays, syrups are mostly employed for a variety of disease-fighting medicines. We can add a flavouring ingredient, such as raspberry, to provide some taste. Additionally, neem is extracted to inhibit bacterial growth, while sucrose and sodium benzoate are employed as preservatives. Every formulation was created using parameters such as organoleptic properties, density, specific gravity, and pH. The findings demonstrated that, in comparison to alternative formulations, the herbal syrup formulation is more elegant and stable.

Keywords : *Herbal syrups, flavoring agents (Raspberry), preservatives (Sodium benzoate) and Evaluation, Decoction.*

Introduction :

Ulcer

A breach or discontinuity in a body membrane that prevents proper physiological structure or function is called an ulcer. Although they can develop elsewhere throughout the body, ulcers are most frequently linked to the gastrointestinal system. Peptic ulcers and oral ulcers are the two primary forms of ulcers. usually located in the top portion of the small intestine (duodenal ulcers) or the stomach (gastric ulcers). The most frequent causes are prolonged use of nonsteroidal anti-inflammatory medicines (NSAIDs) or Helicobacter pylori (H. pylori) infection. Add Symptoms nausea, bloating, burning stomach discomfort, and in extreme situations, ulcer bleeding or perforation. found on the tongue, gums, lips, and inner cheeks of the mouth. Multiple factors can contribute, such as minor injury, stress, certain medical conditions, or autoimmune disorders. Signs such as Pain or discomfort, occasionally accompanied by redness and inflammation, particularly during eating or drinking. The severity of ulcers might vary, and if treatment is not received, complications could develop. Endoscopy, imaging studies, and other laboratory testing are frequently used in diagnosis. Depending on the underlying reason, treatment may involve lifestyle changes, medicines to treat bacterial infections, and drugs to lessen the production of stomach acid. If you think you may have an ulcer, you should definitely consult a doctor. Complications can be avoided and symptoms can be lessened with the right diagnosis and care.

Herbal syrup

A syrup is a pharmaceutical preparation made composed of a concentrated, viscous aqueous solution of sugar (often ~~sucrose~~), frequently with flavourings, preservatives, and therapeutic ingredients. A herbal formulation is a dose made from herbs that has been used to diagnose human or animal health issues and offers certain nutritional and cosmetic benefits. Tinctures, expressed juice, and central oils are examples of various herbal formulations. The herbal syrup solution is a concentrated syrup. Water has a sucrose content of about 85%.

Syrup classification :

1. Simple syrups:

Syrups are concentrated or saturated aqueous solutions of sugar replacements or sucrose in purified water, with or without flavourings or other ingredients. There is 85% w/v (65% w/w) in simple syrup. 66.7% w/w, or 1.313 (USP), is the specific gravity, according to Indian Pharmacy/BP.

2. Medicated Syrup :
   syrup that contains active substances for medical or therapeutic purposes. Cough syrup, for instance.
3. Flavored syrups
   Syrup flavored with flavorings, but not medicinal substances. Flavored syrups usually consist of a simple sugar syrup (Mixed thoroughly with water and heated) in which natural or artificial (Synthetic) flavors are also dissolved. Herbal syrup is prepared by adding concentrated decoction of herbs with either sucrose, (Substitution of sugars). For the thickening of Syrup we added g. It also responsible for a shelf life of a formulation by making a solution more concentrated. And final product was consumable. It is defined as a viscous liquid consisting of a concentrated solution of sugar and water with no added or added flavoring or pharmaceuticals

Ingredients used in formulation

1. Punica granatum

Botanical name: P. granatumFamily: pomegranate

Use: antiulcer activity as well as Flavoring agent.

2. Sugar

It consist stem of plant Saccharum officinarum Botanical name: Saccharum officinarum

Family: Poaceae.

Use: It act as preservative and uses to increases shelf life of product.

4. Sodium benzoate

It used as a preservative.

5. Glycerine

As thickening agent

Table 1: Role of ingredients in herbal syrup.

Sr. No.	Ingredient	Role
1)	Punica granatum	Antiulcer activity
2)	Raspberry	Flavoring agent
3)	Sucrose	Act as natural Preservative.
4)	Sodium benzoate	Preservative.
5)	Glycerine	Thickener

Materials and methods:

Preparation of herbal syrup

Procedure

We must first do a water decoction of the previously powdered leaves of Punica granatum.

We used 180 millilitres of water and 20 grammes of powdered medication for the decoction.

and kept in a water bath until only a quarter of the water is left in the beaker.

After that we need to make a simple syrup of 100ml water by gentle heating and adding 66.67 gm of sucrose.

For the formulation of 30ml of antiulcer syrup we need following quantity of ingredients.

Sr. No.	Ingredients	Quantity
1)	Punica granatum extract.	4.16ml.
2)	Sodium benzoate.	0.2%.
3)	Simple syrup.	20.83ml.
4)	Raspberry.	Qs.
5)	Glycerin.	5ml.

Add syrup and medication extract in a 1:5 ratio (as the tacking quantity indicated in the preceding table).

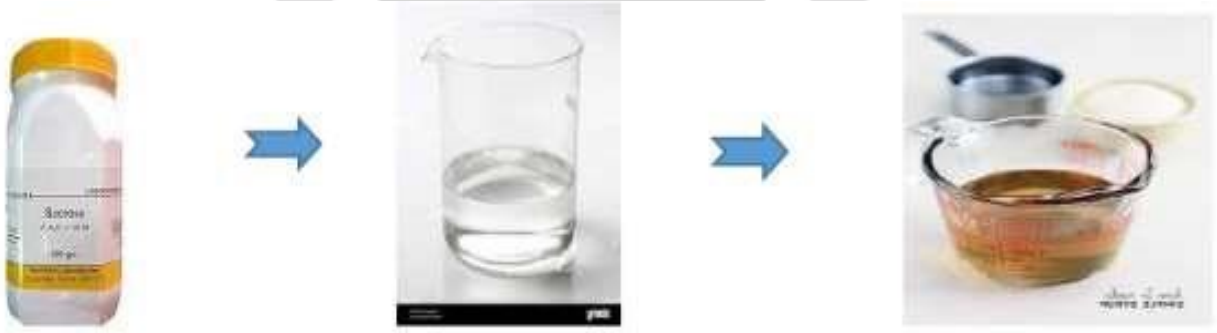
Add glycerin to thicken the formulation after adding raspberry and 0.2% sodium benzoate for flavour.

If required, add distilled water to get the final volume.

Decoction of Punica grantum :

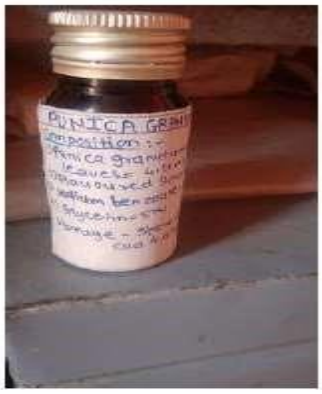
Punica granatum leaves. Punica granatum powder. Punica granatum extration

Simple syrup :



Sucrose **water** **Simple syrup**

Final syrup



Evaluation parameter :

1. Procedure to determine density

1) Clean thoroughly the specific gravity bottle with chromic acid or nitric acid.

52) Rinse the bottle at least two to three times with distilled water.

3) If required, rinse the bottle with an organic solvent like acetone and dry.

4) Take the weight of empty dry bottle with capillary tube stopper (w1).

35) Fill the bottle with unknown liquid and place the stopper, wipe out excess liquid from

Out side the tube using tissue paper

6) Weight bottle with unknown liquid on analytical balance (w2).

7) Calculate weight in grams of unknown liquid (w3).

Formula for density :

$$\text{Density of liquid under test (syrup)} = \frac{\text{Weight of liquid under test (W3).}}{\text{Volume of liquid under test (V).}}$$

2. Procedure to determine specific gravity

1) Clean thoroughly the specific gravity bottle with chromic or nitric acid. 2) Rinse the bottle at least two to three times with purified water. 3) If required, rinse the bottle with an organic solvent like acetone and dry 4) Take weight of empty dry bottle with capillary tube stopper.

5) Fill the bottle with distilled water and place stopper; wipe out excess liquid from side tube using tissue paper (w2).
6) Weight bottle with stopper and water on analytical balance (w2).
7) Repeat the procedure for liquid under test by replacing the water after emptying and drying as mentioned in step 4 to 6.
8) Weight bottle with stopper and liquid under test on analytical balance (w3).

Formula for specific gravity

$$\text{Specific gravity of liquid under test (syrup)} = \frac{\text{Weight of liquid under test (W5).}}{\text{Weight of water (W4).}}$$

3. Procedure to determine viscosity

1) Thoroughly clean the Ostwald viscometer with warm chromic acid and if necessary used an organic solvent such as acetone.
2) Mount viscometer in vertical position on a suitable stand.
3) Fill water in dry viscometer up to mark G.
4) Count time required, in second for water to flow from mark A to mark B.
5) Repeat step 3 at least 3 times to obtained accurate reading.
6) Rinse viscometer with test liquid and then fill it up to mark A, find out the time required for liquid to flow to mark B.
7) Determination of densities of liquid as mentioned in density determination experiment.

Formula for viscosity

$$\text{Viscosity} = \frac{\text{Density of test liquid} \times \text{Time required to flow test liquid}}{\text{Density of water} \times \text{Time required to flow water}} \times \text{Viscosity of water}$$

4. PH determination

The PH determination of syrup by using two technique. a) Glass electrode.

b) Ph paper

Procedure for glass electrode

1) Prepare 30ml buffer of each PH. The volume of the stock solution to be taken. Prepare the buffer by mixing appropriate volume.
2) Allow the solution for 15 minutes to establish equilibrium.
3) Measure the PH of solution using a PH meter.

Discussion:

Herbal products are harmless in today's world, while synthetic pharmaceuticals are seen to be harmful to both people and the environment. Additionally, in ancient times, botanical ingredients—such as medicinal flavoring—were used to heal various ailments. Promotion is crucial. We can create a natural product with antioxidant properties. About 100 mg of vitamin C can be found in one kiwi fruit. It can have a significant impact on platelet aggregation, and during a 28-day fruit eating period, plasma triglyceride levels decreased. Consuming kiwi fruits on a daily basis lowers the risk of cancer, particularly colon cancer. It is also used to treat sleep disorders, including insomnia. It encourages restful sleep.

Conclusion :

This formulation's ultimate conclusion is that it will aid in the treatment of ulcers. It will be very beneficial for researchers and industries to create similar formulations on a large scale because the medicinal herbal product has

medicinal properties like antioxidant, antibacterial, and antiulcer activity. These properties may be caused by the presence of various compounds like flavonoids, which are well-known antioxidants that help to treat diseased conditions.

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