

A Review on Herbal Soap Containing Liquorice

1Vishakha Oimbe, 2 Shubhangi Raut, 3 Poonam Pardhi, 4 Darshana Shende,
5Rasika Rangari

Assistant professor Shree Sainath college of pharmacy Nagpur, Maharashtra

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ABSTRACT: The end of our study to develop an herbal soap that contain the main ingredient liquorice and has anti-inflammatory, moisturizing, nourishing, skin brightening properties. Herbal soap was prepared using liquorice powder, soap base, kumkumadi oil, sandal wood oil. etc....

The quality of soap formulation was confirmed by evaluating several physicochemical characteristics. Color, smell, and clarity evaluation On a white background, participants evaluated color, clarity, and odor solely with their eyes main evaluation was pH, foam forming ability, foam retention, saponification value. It is made using natural ingredients that are biodegradable and do not harm the environment. herbal soap provides various benefits, such as soothing and healing the skin, and providing a natural fragrance.

KEYWORDS: Herbal Soap, Liquorice, Anti-inflammatory, Natural Ingredients.

I. INTRODUCTION

One of the main things we use daily is soap. Essentially, soaps are the sodium and potassium salts of higher fatty acids, including palmitic, lauric, stearic, and oleic acids.[1] Herbal soaps are characterized by the presence of organic substances or natural scents and fatty acids mixed with alkali salts that come from plants or vegetables.[2] A fat or oil undergoes a basic hydrolysis reaction, or saponification, to make soap. A natural herbal soap might be an excellent substitute for commercial soaps as the majority of them include chemicals that can be bad for your skin.[3] Basic soapy plant preparations can accelerate the healing and resolution of acne, soften the epidermis of the skin, and improve penetration.[4] These soaps' infusion of herbs has medicinal and restorative properties that provide particular advantages to the skin, including strength, sustenance, healing, and hydration.[3] The use of phytoconstituents obtained from plant extracts has a promising future in the management of hyperpigmentation.[5] Compared to the contents of commercial soap, herbal soap is free of artificial

colors, flavors, fluorides, and other additives. Natural soaps make it simple to maintain the pH balance of the skin without upsetting it. Because of their great therapeutic worth, affordability, accessibility, and compatibility, herbs are the natural items that are typically used in the treatment of practically all diseases and skin conditions.[6] One of the cosmetics used in modern makeup is soap, which helps to keep and improve skin elasticity.[5] General soap Dermatologists refer patients with skin conditions such as dryness, itching, acne, and contact dermatitis and counsel them to use particular skin care products, such as soap, based on their skin type and related conditions. [7] Because skin provides a technical role to the body, we must take care of it to prevent skin problems and misalignment. Skin diseases are a modern sickness. It hurts people in many different ways and affects people of all ages, including babies and the elderly. Skin problems can be caused by infections, inclinations, sun exposure, traumas, and other things.[8] Natural organic ingredients are used to make herbal soaps, which soften and rejuvenate skin. Herbal soap's aroma alone calms the mind without harming the surroundings.[9] The medicinal and restorative properties of the herbs used to infuse these soaps provide targeted skin benefits, including strengthening, hydrating, healing, and nourishing. These soaps also include essential oils, vitamin E, aloe, and super fatty oils, all of which are linked to healthy skin and general well-being.[3] Using soap is a more effective and superior method of getting rid of all the dirt and foreign objects.[2] Additionally, these soaps contain glycerine, which isn't typically seen in commercial soaps. These soaps are for dry skin conditions since glycerine helps to keep the moisture in the skin.[3] The soap has a long-lasting scent, good moisturizing properties, good detergency or washing power, and is less irritating. To make herbal soaps mix different dry herbs, flowers, and stems into the soap base. Natural items known as herbs are used to treat a wide range of illnesses and skin conditions

because of their high medicinal value, affordability, accessibility, and suitability.[6] In the present study, Liquorice (*Glycyrrhiza glabra*), kumkumadi oil, and Sandalwood essential oil were selected in the formulation of herbal soap.

II. GENERAL SOAP



Figure 1.

III. TYPES OF SOAP

- 1) Transparent soap
- 2) Glycerine soap
- 3) Liquid soap

Transparent soap

A heated technique is used to prepare it. To make it translucent, alcohols of some kind are typically added. Although sugar syrup, which is simply sugar mixed with distilled water, can be used in place of alcohol, it is not as successful.



Figure 2. Transparent soap

Glycerine soap

Oil or fat contains glycerine, which is used to make glycerine soap. Glycerin, a byproduct of the chemical reaction involved in manufacturing soap, is included in every homemade soap.



Figure 3. Glycerine soap

Liquid soap

Compared to soap bars, the production process for liquid soap is more intricate. Usually, the hot process method is used to make it. Because potassium hydroxide, rather than sodium hydroxide, is used as the lye, it becomes liquid. employed in the manufacturing process as well as as a result of the overabundance of water added. [12]



Figure 4. Liquid soap

IV. KIND OF SOAP WITH DISTINCT APPLICATIONS

1. Kitchen Soap
2. Laundry Soap
3. Novelty Soap
4. Medicated soap
5. Guest Soap
6. beauty soap



Figure 5. Kind of Soap With Distinct Application

1. **Kitchen Soap:** This kind of soap is primarily meant to be used in the kitchen for washing dishes.

2. **Guest Soap:** These are mini soap that are generally smaller than the usual soap bar and comes with various attractive shapes. They are designed for guest's usage.
3. **Laundry soap:** It removes grease, solid particles, and organic compounds from clothing. Because it is lightweight and portable, washing clothing while traveling can be extremely convenient.
4. **Novelty soap :**These soaps are colored and shaped like fish, cakes, and mustaches. They serve as more than just dish soap. The kids who use them find them entertaining and enjoyable.
5. **Medicated soap:** Medicated soap is essentially soap that has disinfectants and antiseptics added to it to kill bacteria.
6. **Beauty Soap:** It contains components suitable for many skin types and has a distinct scent. They may include glycerin or a unique oil combination.^[12]

V.BASIC INGREDIENTS OF SOAP

- liquorice powder
- Sandalwood essential oil
- Kumkumadi oil
- Soap Base :
- Coconut oil
- Olive oil
- Seed oil
- Sunflower oil
- Glycerine
- Honey
- Water



VI.MAIN INGREDIENT (LIQUORICE)

Common name:- liquorice, sweet wood, regolizia (italian), mulethi (hindi), jeshtamadh , yastimadhu (marathi), Kosha Walgi (Pushto).^[13] Also known as liquorice plant

Meaning:- Glycyrrhiza- sweet root and glabra-smooth

Biological source:- It is obtained from the dried, unpeeled, root and stolone of glycyrrhiza glabra.

Family:-Leguminosae

Part used:- root and stolons

Geographical source:- Commercially cultivated in Spain, and England. Also grown in the sub-Himalayan tracts and Baluchistan.^[14]

Flower:- purplish blue color

For drug preparation:- dried unpeeled root and stolons are used.^[15]



Figure 6. Liquorice roots



Figure 7. Liquorice plant

Liquorice : *Glycyrrhiza glabra* L., often known as licorice, is a member of the Astragaleae tribe and family of plants. The Greeks gave birth to the name *Glycyrrhiza*. which translates to "sweet wood." Chinese medicine has used licorice extensively since ancient times. Longer durations of consumption were thought to result in longer times of rejuvenation [Chopra et al., 1958]. As for licorice, Theophrastus speaks. After the thirteenth century, the Romans began to plant it and named it *Radix dulcis*. It has been cultivated in the UK since the fifteenth century. [Evans and Trese, 1983]. One of the main medications prescribed by Susruta in Indian medicine is liquorice. It is known by the names Mulethi, Malahatti, Yastimadhu, and

Erattimathuram in Malayalam. referred to as Kanzo in Japan. It has also been discovered that species other than

G. glabra produce chemicals with commercial value.^[16] There are a number of formulations with licorice extracts available in stores. The majority of the time, they are used in conjunction with SPF (Sun Protection Factor) products that have *G. glabra* root extract. In cream and serum formulations, the extract is added to the internal aqueous phase of the water/oleum emulsion and is touted for its anti-aging, wrinkle-reducing, hyperpigmentation-reducing, and skin-lightening properties. Because of these benefits, licorice extracts are also utilized in sunscreen formulations and personal care products like toners, shampoos, cleansers for the face, and makeup removers. Additionally, licorice extract is an ingredient in makeup products like BB creams, lipsticks, primers, concealers, and around-the-eye creams.^[14] In rich soil and subtropical temperatures, licorice can reach heights of 1.4 meters. It features flat pods, white to purplish flower clusters, and oval-shaped leaflets. Its large root system consists of many runners in addition to a main taproot below ground. The primary taproot is soft, fibrous, and has a bright yellow interior. It is gathered for medicinal purposes. It is a priceless herbal remedy.^[13]

VII. SOAP MAKING PROCESS

The understanding of the process of manufacturing soap has greatly improved with the advent of modern chemistry. Fundamentally, making soap involves a chemical reaction where lipids are saponified by an alkali, like sodium hydroxide.^[7] The primary process reaction in the creation of soap is saponification. The process of manufacturing soap involves two different kinds of operations. There are two types of operations: batch operation for small-scale production and continuous operation for industrial production. Three distinct procedures are used in both operations: the completely boiled process, the semiboiled or hot process, and the cold process.^[1]

1. Cold Process:

While hot process soap is heated, usually in a crockpot, to expedite the soapmaking process, cold process soap is manufactured without any external heat added. This method mostly involves room-temperature mixing of fat and strong alkali, resulting in emulsification rather than much more. After this mixture is run into frames at a heated

temperature over several days, saponification is finished. Since there is no way to change the ratios of fat to alkali, precise computation of the amounts to be utilized is necessary.^[12]

2. Semi-boiled Process:

The saponification mixture is heated to 70–90°C using a steam-heated coil in the semi-boiled process, which sets it apart from the cold process by speeding up and finishing the saponification reaction. To keep them from evaporating, chemicals, dyes, and fragrances are added at the conclusion of the procedure. The procedure makes it possible to modify the amount of soda flowing through the saponification process before the extraction of the crude soap. It also makes it possible to recycle manufacturing waste and incorporate additives more effectively, with a greater selection of raw materials available.^[12]

3. Full-Boiled Process:

After saponification, the complete boiled process varies from the semi-boiled method in the glycerine extraction, washing, and adjustment steps. A greater variety of fatty source materials can be used because the combination can be held at a temperature of 100°C while being vigorously stirred.^[12]

FORMULATION TABLE

Table no.1

INGREDIENTS	QUANTITY (75g)
Liquorice power	0.85 g
Soap base	73 g
Sandalwood essential oil	1.33 ml
Kumkumadi oil	33. ml

PROCEDURE

- To obtain powder of *Glycyrrhiza glabra* L., take liquorice roots, then pound them with motor Pestle, Then grind it and pulse to powder.
- 73gms glycerin Soap base cut it into pieces and melt it using the double boiler method. Place it in a bowl filled with water and start melting it on low-medium flame.
- Add 0.85gm liquorice powder and 1.33ml kumkumadi oil, and mix it well .
- Add 1.33ml sandalwood Essential oil mix it well and pour it in moulds.
- Leave it untouched to set at Room temp After 2 hrs. de-mold it.



Figure 8. Formulated liquorice soap

EVALUATION PARAMETERS

The quality of the soap's formulation was confirmed by evaluating several physicochemical characteristics. Color, smell, and clarity evaluation On a white background, participants evaluated color, clarity, and odor solely with their eyes.^[5]

1)PH:-

In a 100 ml volumetric flask, 10 grams of soap were dissolved in distilled water to create 10% of the soap solution. A pH meter was used to determine the pH. After adding an electrode to the mixture, the pH was recorded.^[3,6,7]

2)Foam-forming ability:

A 100-milliliter graduated measuring cylinder was filled with 1.0 grams of Polyherbal soap, which was then dissolved in 50 milliliters of distilled water to test the soap's foam-forming capacity. After shaking the measuring cylinder for two to three minutes, it was let to stand for ten minutes. After ten minutes, the height of the foam was measured. Keep track of the observations for the three experiments that followed, then calculate the mean.^[2]



Figure 9. foam forming ability

3)Foam Retention:

A 100 ml graduated measuring cylinder was filled with 25 ml of the 1% soap solution. Ten times, the cylinder was shaken while being covered with hands. For four minutes, the volume of foam was measured at one-minute intervals.^[4,5,6]



Figure 10. Foam retention

4) Saponification value:

Unless otherwise specified in the individual monograph, introduce about 2 g of the substance under examination, accurately weighed, into a 200-ml flask of borosilicate glass fitted with a reflux condenser. Add 25.0 ml of 0.5 M ethanolic and titrate immediately with 0.5 M hydrochloric acid (a ml). Carry out a blank titration omitting the substance under examination (6 ml), Calculate the saponification value from the expression Saponification value: $28.05 (b-a)/w$ where, w weight in gm. of the substance. [2,4,7]



Figure 11. Saponification process

5)Total fatty matter:

By reacting soap and acid in the presence of hot water and measuring the fatty acids that resulted, TFM was calculated. After dissolving 10 g of the designed soap in 150 ml of distilled water, the mixture was heated. After heating for a while,

20 milliliters of 15% H₂ SO₄ were added, and a clear solution was produced. The surface of the resultant solution contains fatty acids, which are solidified by heating the mixture again and adding 7 g of beeswax. It was then permitted to cake. After removing the cake, it was wiped dry and weighed using the formula to determine the TFM. TFM can be calculated as follows: %

$$\text{TFM} = \frac{(\text{cake weight} - \text{wax weight}) \text{ in g}}{\text{soap weight in g}} \times 100. \quad [4,5,7]$$



Figure 12. Total fatty matter

EVALUATION PARAMETERS

Table no.2

Sr. no	Evaluation parameter	Readings
1.	Organoleptic evaluation	
	Colour	Brown
	Odor	Aromatic
	Appearance	Good
2.	PH	7-8
3.	Foam forming ability	5cm
4.	Foam retention time	10min
5.	Saponification value	168.3
6.	Total fatty matter	70%

BENEFITS OF LIQUORICE SOAP

- **Anti-Inflammatory Properties**
Liquorice soap can help soothe skin, and inflammations and reduce redness for a more even skin tone.
- **Skin Brightening**
It is known for its potential to brighten the skin and address hyperpigmentation issues, providing a more radiant complexion.
- **Moisturizing and Nourishing**
The soap's formulation offers moisturizing and nourishing benefits, enhancing skin health and hydration

CONCLUSION

Base on the study result it can be concluded that outcomes 7.0 to 7.9 are the pH range. It found that soaps were skin-friendly. The liquorice soap contains anti-inflammatory skin-brightening properties it is also beneficial for moisturizing and nourishing thr skin. The prepared soap was standardized by evaluating various physico chemical properties such as pH appearance, colour, odour Foam forming ability, foam retention, saponification value total fatty matter which exhibited satisfactory results.

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