Shikekai Turmeric Herbal Bath Soap

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***Abstract*— Most commercial soaps contain ingredients that may be harmful to your skin. Instead, opting for natural herbal soaps can offer benefits. The use of herbal products has enhanced their safety and effectiveness, making them increasingly popular for both medical and economic purposes. Skin conditions caused by bacteria are prevalent among adults, necessitating careful treatment to improve and maintain healthy-looking skin. The current study's goal is to create herbal soap using Acacia concinna, Sapindus mukorossi Curcuma longa, Ocimum tenuiflorum, and Azadirachta indica. Various physicochemical characteristics, including PH, Percentage Free Alkali, foam height and foam retention time, were evaluated for produced herbal soap. The widespread availability of plants and their effectiveness on the skin provides manufacturers with advantages that are convenient, cost-effective, and generally free of side effects.**

***Index Terms*—Acacia concinna, Sapindus mukorossi Curcuma longa, Ocimum tenuiflorum, Azadirachta indica. Herbal Soap**

I. INTRODUCTION

The skin is often affected by infectious microorganisms, and maintaining proper skin hygiene is crucial in preventing contagious diseases. This herbal soap is highly effective in reducing the spread of such infections. Since ancient times, traditional medicine has harnessed plants with medicinal properties. Extracts from stems, roots, and leaves of various medicinal plants have been used as natural remedies to treat a wide range of diseases and infections. However, many herbal products have been replaced by synthetic chemicals over time. [1] Medicinal plants have long been used as natural remedies for a wide range of ailments. The leaves, stems, and roots of these plants are known for their high nutritional value and diverse therapeutic properties. They possess antioxidant, antibacterial, cytotoxic, antimicrobial, hypotensive, antidiuretic, anti-inflammatory, antispasmodic, antidiabetic, antihemorrhagic, and antihelminthic qualities. [2] Compared to chemical treatments, herbal treatments offer several benefits: they are readily available, less expensive, and have fewer adverse effects. The advantage of using herbal drugs lies in their affordability, easy accessibility, and reduced side effects compared to chemical products. [3] The chemistry of herbal soap includes saponification, the chemical reaction that happens when fats or oils are combined with an alkali, usually potassium hydroxide (KOH) or sodium hydroxide (NaOH).

II. MATERIAL & METHOD

A. Plant Profile

1.Shikekai:

Botanical name:- Acacia concinna
Common name:- shikekai
Chemical Constituents:- Spinasterone , Acacic acid
Part Typical used:- Fruits pods
Colour:- Brown
Uses:- Antidandruff detergent. [4]

2. Ritha:

Botanical name: Sapindus mukorossi
Common name:- Ritha
Part typical used: seed
Colour: Brown
Uses: Detergent, surfactant [5]

3. Neem:

Botanical name- Azadirachta indica.
Family: Meliaceae
Part typically used- Leave.
Color- Green.
Chemical Constituents- flavonoids, Alkaloids, Azadirone, nimbin, nimbidin, terpenoid, steroids.
Uses –Heal wounds,Treat acne,Minimize moles, Treat dry skin and wrinkles,Stimulate collagen production, Reduce scars [2]

4. Turmeric:

Botanical Name: Curcuma longa
Family:-Zingiberaceae
Part typically used: roots & rhizomes
Uses:-

- Treats dull skin
- May help heal acne
- Aids in eczema treatment
- Reduces hyperpigmentation
- Protects against environmental damage
- Prevents premature aging [1]

5. Tulsi:

Biological name- Ocimum tenuiflorum.
Family:-Lamiaceae
Common name- holy basil, tulsi or tulasi
Chemical constituents-Oleanolic acid, Rosmarinic acid, Linalool, and β-caryophyllene, Eugenol, Carvacrol, Ursolic acid. Part typically used- leaves. Colour- Green.
Uses:-

- Tulsi can help cure fever.
- Tulsi is used to treat blackheads.
- It addresses skin problems like acne and premature aging.
- It is beneficial for heart diseases.
- Tulsi treats various types of insect bites.
- It has anti-aging properties.
- It fights acne.[3]

B. Formulation Procedure of Soap:

Sr. No.	Ingredient Name	Quantity
1.	Shikekai extract	20ml
2.	Ritha extract	20ml
3.	Neem extract	15ml
4.	Turmeric powder	0.5gm
5.	Tulsi extract	15ml
6.	Coconut oil	40ml
7.	Castor oil	35ml
8.	Potassium hydroxide	15gm
9.	Rose water	q.s
10.	Propyl paraben	0.2%
11.	Water	q.s

1. Add alkali to water, never the other way around.
2. Ensure the alkali solution is at body temperature (37°C).
3. Do not test the temperature with your finger, as it can burn you; instead, feel the outside of the container.
4. Melt any solid fat in the oil/fat mixture.
5. Slowly pour the alkali into the oil/fat mixture, stirring continuously in one direction.
6. Add all herbal extracts & powders
7. Stir the mixture for at least half an hour after all the alkali has been added. The mixture should thicken, with lines of white particles following the spoon as you stir.
8. Pour the mixture into lined molds and leave it to set undisturbed for two days in a dry place. If it hasn't set after two days or grease is visible on the top, leave it for a bit longer.
9. Once the soap has set, remove it from the molds and cut it into bars. [6]

III. EVALUATION & RESULT

Evaluation of prepared herbal soap by performing some organoleptic & physicochemical tests as follows:

1. organoleptic evaluation [7]:-

i. Colour :-Reddish-brown

ii. Odour :-Rose fragrance

iii. Appearance :-Good

2. Physical evaluation [8,9]:-

a. Determination of pH: The pH of prepared herbal soap was determined by using a digital pH meter.

b. Determination of Percentage Free Alkali: For the determination of the percentage free alkali in the conical flask 5 gm of dissolved prepared polyherbal soap in 50 ml of neutralized alcohol was boiled under the reflux on a water bath for 30 minutes. Then it was cooled and added 1 ml of Phenolphthalein solution as an indicator. After that the solution was titrated with 0.1ml of HCL solution.

c. Foam Height: Dissolved 0.5 gm of soap in distilled water then with distilled water in 100 ml measuring cylinder make up the volume up to 50 ml. By giving 25 strokes the volume of foam height was measured.

d. Foam Retention: In the 100 ml of measuring cylinder transfer the Prepared the 25 ml of the 1% soap solution. Then the cylinder was shaken 10 times. The volume of foam retention was recorded.

a. Evaluation Test Results:

Sr. No.	Evaluation test	Result
1.	Determination of pH	7.7
2.	Determination of Percentage Free Alkali	0.27
3.	Foam Height	2.4cm
4.	Foam Retention	12.5min

The preparation and evaluation of a polyherbal soap were conducted. The physicochemical parameters of the soap were analyzed, showing favorable appearance characteristics and a pH within the desired range of 7.7.

Additional parameters including percentage of Free Alkali, Foam height, and Foam retention were also assessed. Physical compatibility tests demonstrated no color change, indicating compatibility among all excipients used.

IV. CONCLUSION

In conclusion, the aqueous extracts from plant materials such as Acacia concinna, Sapindus mukorossi, Azadiricta india and Ocimum tenuiflorum were extracted using water. They demonstrate promising potential for soap formulation. The physicochemical properties of the formulated soap were satisfactory. The prepared formulation exhibits favorable physical characteristics. It provides excellent foaming properties and is free from alkali components, as indicated by its evaluation parameters. A significant finding of this study is that the herbal soap, devoid of chemicals, surpasses synthetic soaps in effectiveness and can be incorporated into beauty regimens with greater prominence.

IV. REFERENCES

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