WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.084
Volume 12, Issue 9, 2136-2147. Research Article ISSN 2277– 7105

FORMULATION AND EVALUATION OF HERBAL SOAP

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Article Received on
10 April 2023,

Revised on 30 April 2023,
Accepted on 20 May 2023

DOI: 10.20959/wjpr20239-28344

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ABSTRACT

Neem leaf was used in the formulation of the herbal soap. All herbal substances can be found in the nearby herbal market with ease. The use of cosmetics is a part of taking care of the skin and other body parts because of the negative effects of today's pollution and UV rays on the human body. Aloe plants generate a material that is used in cosmetic goods to treat burns, psoriasis, acne, and other skin disorders. Herbal soap preparation is a medication or therapy with therapeutic benefits for the skin, including antibacterial and antifungal qualities. The unprocessed medication that is used to make soap has various properties that make it a good medicinal or cosmetic. The plant used to make soap has the ability to soften the skin's epidermis, provide greater penetration, eradicate acne, and speed up healing and resolution. Aloe Vera is a natural product that is used to prevent and treat a variety of skin issues. Aloe Vera soap has a number of therapeutic characteristics, including those that are anti-septic, anti-microbial, anti-viral, antioxidant, and anti-fungal. The aloe Vera plant has triangular, fleshy leaves with serrated edges, tubular yellow blooms, and fruits with many seeds. Every leaf is made up of three layers: The first is an inner clear gel that is made up of 99% water, with the remaining 2% being glucomannans, amino acids, lipids, sterols, and vitamins. the bitter yellow sap that makes up the middle layer of latex.

KEYWORD: Herbal Soap, Neem, Hibiscus, Vitamin E, Aloe Vera, Turmeric, Rose Water, Soap Base, Orange Oil.

Motivation

1. Desire to get intellectual joy of doing some creative work.
2. Getting depth knowledge about our interested subject.
3. Desire to face challenge in solving the unsolved problems.

Literature review

The articles are analyzed by reading the title and abstract to identify the most relevant papers. The number of scientific publications is very high. To find the most pertinent publications, the titles and abstracts of the articles are reviewed and analyzed. There are a lot of publications in the scientific community. Through a protocol, we were able to compile the most pertinent information for the theatre.

Objective

1. Soap is a salt of a fatty acid used in a variety of cleansing and lubricating products.
2. In a domestic setting, soaps are surfactants usually used for washing, bathing, and other types of housekeeping.
3. In industrial settings, soaps are used as thickeners, components of some lubricants, and precursors to catalysts.
4. Bar soap works by dissolving the dirt on the surface of your skin.

1. INTRODUCTION

A number of cleaning and lubricating products use soap, which is a salt of a fatty acid. Typically used as a surfactant in washing, bathing, and other types of housekeeping.[1] Soaps are used to wash away filth, including dust mites and foul odors from the body.[2] In the form of herbal soap, which primarily includes plant parts including seeds, rhizomes, and roots, it has antibacterial, anti-aging, antioxidant, and antiseptic effects. To treat illness or injury or to improve health, use nuts and pulps.[3] Herbal soap is free of synthetic dyes, flavors, fluorides, and other additives. when compared to what commercial soap contains.[4] Due to their strong therapeutic value, herbs are the natural items most frequently used in the treatment of practically all diseases and skin issues. value, affordability, accessibility, and compatibility.[5] The health, aesthetic, medical, and skin care benefits of aloe Vera have been well known and utilized for generations. Aloe Vera is now most frequently used in the cosmetology industry.[6] The exterior layer of the human body, or skin, serves as the body's first line of defense against numerous diseases.[7] Because the skin interacts with the environment and is constantly exposed to various environmental stimuli, damage to the skin is more likely.[8] One of the oldest medicinal traditions still in use today in Sri Lanka, India, and other south Asian nations is Ayurveda, which has a strong philosophical and experimental foundation.[9] One of the most prevalent skin issues among teens and young adults is acne. There are three main types: acne rosacea, acne conglobate, and acne vulgaris. A superficial condition that

affects the skin's oil glands and hair follicles, acne vulgaris is known as. Additionally, it appears as whiteheads, blackheads, and an inflammatory process. Although it is not life threatening, the variety of lesions on the face, chest, shoulder, and back create a physiological burden that lowers quality of life.[10] According to definition, soap is a chemical compound combination produced when a metal radical interacts with a fatty acid. Any salt of those fatty acids that is water soluble and has eight or more carbon atoms is referred to be soap. The metals commonly used in soap making are sodium and potassium, which produce water laundry and cleaning products that are soluble in soap[11] Herbal soap preparations are medicines or pharmaceuticals because they include antibacterial and antifungal agents. They often use plant parts including leaves, roots, stems, and fruit to cure wounds, prevent disease, or promote health.[12] Soap has a variety of qualities, including good moisturizing benefits and long-lasting aroma. Various dried herbs, flowers, and steam are mixed into the soap base to create herbal soap. Due to their high medicinal value, cost effectiveness, and accessibility, herbs are natural products that can be used to treat practically all ailments and skin issues. As well as.[13,14] The benefits of soap include its tenderness on the skin, rich lather, protection against various skin conditions, ability to treat skin infections like ringworm, and ability to keep the skin smooth and evenly toned.[15] Herbal remedies have advantages over chemical products in that they are less expensive, easily accessible, and have fewer side effects.[16] The soap should contain effective ingredients that may eliminate bacteria without harming bodily tissue. A healthcare professional should use soap in accordance with health and hygiene standards. This will shield a large number of immunocompromised or low immunity patients from the spread of harmful or opportunistic pathogens.[17] Soap is used to stay clean and fresh, however using chemical soap can cause dry skin, skin damage, and skin allergies. Chemicals in soap can cause a variety of skin conditions. By slowing the skin's natural regeneration process, they block skin pores, restrict cell respiration, and hasten skin ageing. Some herbs are effective at giving the product a natural color. Some herbs are excellent for relieving stress. Other herbal additives may benefit the skin by minimizing acne or soothing irritability. As a result, some plants have a wide range of vital minerals and vitamins that are highly helpful Neem leaf and its extract have anti-inflammatory, antifungal, antibacterial, anti-ulcer, anti-malarial, immunomodulatory, and anti-carcinogenic properties.[18] This soap primarily provides antibacterial, antifungal, skin-lightening, acne removal, and smoothing or moisturizing properties.

1.1 Planning of work

1. Collection of the plants.
2. Extraction of selected plant.
3. Preliminary phytochemical investigation of methanolic extract of the plants.
4. Formulation and evaluation of the herbal Soap
5. Packaging

1.2 Use of soap

cure for acne Neem's antibacterial qualities kill acne-causing germs, aiding in acne treatment and prevention. Treats whiteheads and blackheads. Aloe Vera exhibits moisturizing properties and moisturizes skin without making it feel oily. Therefore, it is ideal for those who have oily skin.

Therefore, it is ideal for those with oily skin. It also combats acne and sunburn. The primary use of this soap is for any skin issue.

2. Types of skin and skin-related problems of users of soap

2.1 Skin related issues

When there is a lot of Un- Saponified lye in soap, it is said to have high alkaline, which can irritate skin. For those with sensitive skin, including small children, this is especially true. Traditional soaps contain irritants that can cause dry skin, contact dermatitis, inflammatory acne, and interfere with the Your skin, on your face and body, maintains a delicate pH balance.

2.2 Dryness

Skin that is tight, unpleasant, and in some cases even painful to the touch looks about as nice as it feels. By removing the skin's natural oils, harsh cleansers can cause dryness and irritation. Skin tightness, irritation, dryness, and barrier breakdown can be caused by the proteins and lipids that surfactants in cleansers destroy. A study that was published in Dermatologic Therapy shows that cleaning can cause damage.

2.3 Acne that is inflamed

It may seem contradictory, but the cleanser you use to remove oils and grime from your skin's pores could be causing the acne you are attempting to prevent or treat. The acid mantle's built-in antibacterial disinfectant may be harmed by harsh soaps with higher pH levels.

Defends and cause acne vulgaris, among other disorders, according to a study published in Skin Pharmacology and Physiology.

3. MATERIAL AND METHOD

3.1. Material

Table No (1): Material of herbal soap.

Sr. No	Material	Quantity
1	Neem	10gm
2	Hibiscus powder	3.33gm
3	Aloe vera	6.6gm
4	Vitamin E	2.5gm
5	Turmeric powder	0.83gm
6	Glycerin soap base	20gm
7	Rose water	QS
8	Orange oil	1ml

1. **Hibiscus**

I. **Synonym:** Hibiscus rose -sinensis

II. **Family:** Mallows

III. **Chemical constituents:** anthocyanins and polyphenols

IV. **Use:** Hibiscus is a powerful antiaging plant with a reputation for increasing skin elasticity.

V. **Color:** Red

2. **Neem**

I. **Synonym:** Arishth

II. **Family:** Mellaceae

III. **Chemical constituents:** Nimbin, Nimbinene

IV. **Use:** Anti-bacterial

V. **Color:** Green

3. **Aloevera**

I. **Synonym:** Ghrit Kumari.

II. **Family:** Liliaceae.

III. **Chemical constituents:** lignin, vitamin, enzymes, minerals.

IV. **Use:** Anti-Aging.

V. **Color:** Green

4. Vitamin E: Use

Capsule Use-helps maintain healthy skin and eyes and strengthen the body's natural defense against illness and infection.

5. Turmeric powder

I. Synonym: Haldi.

II. Family: Zingiberaceae.

III. Chemical constituents: Curmin, Dimethoxy Curmin.

IV. Use: antibacterial.

V. Color: Yellow

6. Soap Base

Use

- Keep skin acne free.
- Prevents premature ageing.
- Heals skin infection quickly.
- Repair damaged skin faster.

7. **Rose water**

I. **Synonym:** Attar rose.

II. **Family:** Rosaceae.

III. **Chemical constituents:** Citronellol, linalool.

IV. **Use:** Flavoring agent.

V. **Color:** Pink

8. **Orange oil**

I. **Synonym:** Beardless

II. **Family:** Rutaceae

III. **Chemical constituents:** D-imonene

IV. **Use:** Treat skin conditions such as acne.

V. **Color:** Orange

3.2 Method of preparation

- Take the necessary amount of soap base in a beaker.
- When heating the soap base with a water bath, adjust and maintain the temperature.
- soap base will become liquid after heating.
- Then add the ingredients listed in the formulation table.
- In a water bath, bring the mixture to a boil.
- without stirring, obtain the proper mixture.
- The soap mold is filled with this mixture.
- It was cooled for a couple of hours at room temperature.
- Soap is formed.

4. Physiochemical properties

4.1 pH: By applying a pH strip to the freshly made soap and combining it with a solution of 1 gramme in 10 ml water, the pH of the created soap was measured. utilizing a digital pH meter.[19]

4.2 Foam retention: In a 100 ml graduated measuring cylinder, 25 ml of the 1% soap solution were added. 10 times were shaken while holding the cylinder with one hand. For 4 minutes, the volume of foam was measured every minute.[20]

4.3 Foam height: A sample of soap weighing 0.5 gramme was dissolved in 25 ml of pure water. Then, pour it into a 100 ml measuring cylinder after adding water to make the volume 50 ml. 25 strokes were administered while standing until the aqueous volume reached 50 ml, at which point the height of the foam above the aqueous volume was measured.

4.4 Irrigation: performed by rubbing soap into the skin for ten minutes. If there is no irritation, the product is regarded as non-irritating.[21]

4.5 Determination of % Free alkali: Five gramme of the sample and fifty milliliters of neutralized alcohol placed in a conical flask. On a water bath with reflux, it was boiled for 30 minutes, after which it was cooled. A solution of phenolphthalein in 1 mL is then added. 0.1 N hydrochloric acid was then used to titrate it right away.[22]

5. RESULT

The soap's pH was measured. A pH strip was used to determine the soap's pH, which was 8. It was also determined the remaining parameters, including foam height, foam retention, free alkali percentage, and alcohol insoluble matter.

5.1 Evaluation parameters

Table No. (2)

Test	Results
pH	8
Appearance	Good
Color	Amber color
Odor	Orange like
Shape	Flower shape
Foam retention	1 cm per minute
Foam height	3 cm
Irrigation	No irrigation

6. CONCLUSION

The potential for making soap is demonstrated by the plant components' aqueous extracts. Significant activities like moisturizing, anti-aging, calming, anti-acne, and anti-bacterial were demonstrated by the herbal substances utilized in formulation. The prepared soap demonstrated significant commercial standards, significant antibacterial action, and all other parameters were satisfactory. The results of every test that was run were satisfactory. A safe formulation that offers a possible substitute for skin-whitening soap made with chemicals has been identified.

ACKNOWLEDGEMENT

It gives me enormous joy to take on this job. "Formulation and evaluation of herbal soap" is a project that I feel very strongly about working on. I would like to gratefully thank The Management of Delonix Society's Baramati College of Pharmacy for providing the facilities necessary for this research as well as for their assistance. Prof. Swati Burungale's advice and contribution are greatly valued and appreciated by the authors.

7. REFERENCE

1. https://en.wikipedia.org/wiki/Soap
2. Namo Jeremiah Akuaden, I.Y.Chindo, Joel Ogboji; Formulation and Physicochemical and Antifungi Evaluation of Herbal Soaps of Azadiracta Indica and Ziziphus Mauritiana; IOSR Journal of Applied Chemistry; August, 2019; 12(8): 26-34.
3. Ashlesha Ghanwat, Sachin Wayzod and Vanjire Divya; Research Article; Formulation and Evaluation of Herbal soap; Current Trends in Pharmacy and Pharmaceutical Chemistry, April 2020; 2(2): 21-26.
4. Deepa G., Nikhil M. Research Article; Phytochemical, antioxidant, and antimicrobial

activity of psidiumguajavaleaves against oral dental pathogens; Indian Journal Of Applied Research, June 2015; 6(5): 52-54.

5. Saikia A.P., Ryakala V.K., Sharma P., Goswami P., Bora U; Ethnobotany of medicinal plants used by Assamese people for various skin ailments and cosmetics. Journal of Ethnopharmacology, June 2006; 106(2): 149-157.
6. Amar Surjushe, Resham Vasani, and D G Saple; A Short Review; Aloe Vera; Indian Journal of Dermatology, February 2008; 53(4): 163-166
7. Proksch E, Brandner JM, Jensen JM, The skini an indispensable barrier. Exp Dermantol, 2008; 17: 1063-72.
8. Maru AD, Lahoti SR. Formulation and evaluation of moisturizing cream containing sunflower wax Int J Pharma sci., 2018; 11: 54-9.
9. Patwardhan B. Vaidya AD, Chorghade M. Ayurveda and natural product drug discovery curr sci., 2004; 86: 789-99.
10. Hsieh M, Chen C. Delivery of pharmaceutical agent to treat acne vulgaris: Current status and perspectives. J Med Biol., 2011.
11. A.Kuntom, W.L. Siew, and Y.A. Tan, "Characterization of palm acid oil" J. Am. Oil chem soc, 1994; 71: 525-528.
12. Kareru, P.G., Keriko, J, M., Kenji, G, M., Thiong, o, G, T., Gachanja, A.N., & Mukiir a, H.N.(2010). Antimicrobial activities of skin care preparation from plant extracts, African Journal of Traditional Complementary and Alternative Medicines, 7(3).
13. Solanki R, Treatment of skin disease through medicinal plants in different regions of the world International Journal of Biomedical Research, 2011; 2(1): 73-88.
14. Saikia A.P., Ryakala V.K., Sharma P., Goswami p., Bora U. Ethnobotany of Medicinal plant used by assameso people for various skin ailments and cosmetics, Journal of Ethnopharmacology, 106(2), 2006; 106(2): 149-157.
15. Getradeghana B. T Evalution of African traditional soap. Global Journal of pure and Applied Science, 2000; 6: 174-179.
16. Sharma.a. Yadav r, guha v, Sonju. N, patel J, R, 2016; formulation and evaluation of herbal hand wash, world journal of pharmacy and pharmaceutical sciences, 5(3): 675-683.
17. Anionic and Related Lime Soap Dispersants, Raymond G. Bistline Jr., in Anionic Surfactants: Organic Chemistry, Helmut Stache, ed., Volume 56 of Surfactant science series, CRC Press, 1996; chapter 11: 632.
18. GANA MANJUSHA.K, BALAKRISHNAIAH.P, SYAMALA.R, MOUNIK.N, RAVI CHANDRA; Research article; FORMULATION AND EVALUATION OF HERBAL

BATH SOAP CONTAINING METHANOLICEXTRACTS OF THREE AYURVEDIC VARNYA HERBS; Asian ournal of pharmaceutical and clinical research, 2019; 12(11): 213-215.

19. Zeeshan Afsar and Salma Khanam; Research Article FORMULATION AND EVALUATION OF POLY HERBAL SOAP AND HAND SANITIZER; International Research Journal of Pharmacy, 2016; 7(8): 54- 57.
20. Kuril.M, Yadav Y, Sahi A.K, Shukla.K; Research article; Formulation and evaluation of polyherbal paper soap; Journal of innovation and invention in pharmaceutical sciences, 2020; 1(1): 54-57.
21. Blessy Jacob1, Ciyamol2, V. Chandy3; Formulation and Evaluation of Herbal Soap; ISSN:2230-9861 (Online), ISSN: 2349-1299 (Print) Volume 9, Issue 2.
22. Ashlesha GHanwat, Sachin wayzod and Vanjire divya; Formulation and evaluation of herbal soap.