INTERNATIONAL JOURNAL OF PHARMACEUTICAL SCIENCES
[ISSN: 0975-4725; CODEN(USA): IJPS00]
Journal Homepage: https://www.ijpsjournal.com

OPEN ACCESS

Review Article

A Review on Herbal Anti-Fungal Soap

Deman Patel[1], Aditya Kumar[2], Baburam Ratre[3], Anjali Sahu*[4], Gyanesh Kumar Sahu[5], Harish Sharma[6]

[1,2,4,5]*Rungta Institute of Pharmaceutical Sciences and Research, Kohka, Kurud, Bhilai, India*
[3]*Rungta Institute of Pharmaceutical Sciences, Kohka, Kurud, Bhilai, India*
[6]*School of Pharmacy, Anjanya University, Raipur, India.*

ARTICLE INFO

Published: 02 April. 2025
Keywords:
Herbal Antifungal Soap, Skin Infection, Natural Antifungal Agents, Fungal Infections, Skincare.
DOI:
10.5281/zenodo.15124263

ABSTRACT

Herbal antifungal soaps combine natural ingredients with therapeutic properties to provide an alternative to synthetic antifungal treatments. These soaps utilize plant-based extracts like neem, aloe vera, and turmeric, known for their antimicrobial and skin-soothing benefits. This review discusses the composition, mechanism of action, benefits, limitations, and market availability of herbal antifungal soaps. The potential advantages of these formulations include minimal side effects, environmental friendliness, and suitability for sensitive skin. However, variability in efficacy and shorter shelf life are challenges that need to be addressed through further research and standardization.

INTRODUCTION

Herbal cosmetics are products that is made by combining one or more elements derived from plants with other ingredients to create a product that can be used to treat various skin conditions. It can be used in both medical and cosmetic applications; plants are frequently the primary source of ingredients in new pharmaceutical products. Without changing the body's inherent structures or functions, cosmetics are substances that are applied to human body parts like the hands and face to enhance appearance, calm the skin, and encourage beauty. The use of herbal cosmetics is growing in popularity these days, and the necessity for these skin care products in daily life is enormous. These products are categorised by their application-like skin, hair, teeth, and come in various forms like soaps, creams, powders, lotion etc. The ingredients for making these products are derived from unprocessed or extracted plant matter and can be used in the treatment of various disease like fungal infections, eczema, athletes' foot. Their all-natural ingredients provide efficiency and fewer side effects. [1][2][4]

***Corresponding Author:** Anjali Sahu
Address: Rungta Institute of Pharmaceutical Sciences and Research, Kohka, Kurud, Bhilai, India.
Email ✉: Anjalisahu3009@gmail.com
Relevant conflicts of interest/financial disclosures: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

2. Objective:

- Antifungal soap's main purpose is to provide a natural, safe solution for fungal skin issues. Some of the objectives of soap are to promote skin health, prevent infections, and have an antifungal effect.
- Combat Fungal illnesses: Take care of and avoid fungal illnesses like athlete's foot, ringworm, and candidiasis.
- Promote Skin Health: To promote overall skin health, cleanse the skin gently while maintaining its natural pH balance.
- Reduce Itching and Irritation: Fungal infections can cause redness, itching, and irritation.
- Provide Natural and Gentle Care for Sensitive Skin: Avoid the harsh chemicals included in some antifungal products that are manufactured artificially.
- Prevent Recurrence: You can lessen the likelihood that fungal infections will recur by maintaining clean, healthy skin.
- Eco-Friendly Substitute: Offer a sustainable, biodegradable substitute for synthetic personal hygiene soaps. [7][17]

3. Skin:

The cutaneous membrane, sometimes referred to as the skin is body's largest organ by weight and surface area. The skin provides cutaneous sensations, stores blood, defends the body from the environment, controls body temperature, aids in excretion and absorption, and produces vitamin D. The external defence system protects the body from microbial germs. The skin is the largest external defence system. The skin has other functions in addition to being the body's outermost layer. It serves as a mechanical barrier between the inside and exterior of the body. Skin temperature can vary from 30 to 40 degrees Celsius, depending on the environment. The skin serves as the main route for the administration of topical medications. [10][13]

4. Skin Infection:

Fungal skin infections are prevalent ailments brought on by fungus like Candida or dermatophytes. Their usual habitat is warm and humid, and they can impact different bodily sections. A summary of fungal skin infections is provided below. [26]

5. Common Type of Fungal Infection

5.1 Ringworm-

It appears as a red, scaly, round rash with a clear core. impacts several body parts, including the body's tinea corporis. (Scalp) tinea capitis Athlete's foot, or tinea pedis Jock itch, or tinea cruris. [26]

5.2 Candidiasis-

Occurs due to Candida yeast. common beneath breasts or in skin folds (groin, armpits). may appear as white, scaly patches mixed with red, itchy, and damp spots. [26]

5.3 Pityriasis Versicolor-

Caused by yeast called Malassezia. causes lighter or darker spots of discoloration to appear on the arms, back, or chest. may result in slight scaling or irritation. [27]

5.4 Onychomycosis-

fungus-induced nail infection. results in discolored, brittle, or thicker nails. [28]

6. Herbal Soap:

Everyone knows soap to be a common cleaning agent hat is made from the fatty acid salts, saponifying fats or oil they are naturally occurring and can be used to make granules, bars, flakes. Any salt of fatty acids with eight or more carbon atoms that dissolves in water can also be referred to as soap. A wide range of uses, including bathing, medication, and washing, lead to the

production of soap. Herbal soaps are incorporated with ingredients like neem, turmeric, aloe vera, lemon etc, which provides therapeutic effects with cleansing. To enhance the composition's use, additional compounds are added in addition to the essential raw components like metals including calcium, magnesium, and chromium, together with potassium salt and sodium salt, are also used to make metallic insoluble soap, which is used for reasons other than cleaning. The metallic element in the salt determines other aspects of the soap, for instance, a soap composed of sodium salts exhibits less hardness than soap made of potassium salts, as long as the same fat or oil is used in both. Unlike soaps manufactured from water-insoluble divalent metals like iron, calcium, magnesium, or aluminium, they are typically different. Soaps are used for cleaning and laundry, yet there have been reports of calcium soap being used in animal feed formulation. The process of saponification of a triglyceride (fat or oil) is widely known to generate soap. The method creates glycerol and fatty acid salts when the triglyceride reacts with a strong alkali, like potassium or sodium hydroxide. [3][8][9]

7. Ideal Characteristics of Herbal Soap:

Herbal soap provides a wide range of benefits for their skin friendly properties and natural ingredients and they also give therapeutic effects which makes them ideal option for soap in comparison to the other convectional marketed soaps.

7.1 Gentle and Mild-

Herbal soaps should be gentle and non-irritating on skin, making them ideal for all skin types. Due to the absence of harsh chemicals, artificial additives, and synthetic fragrances that may cause skin irritation, herbal soaps present a healthier option to conventional soaps.

7.2 Moisturizing-

Hydrating: Olive oil, coconut oil, shea butter, and cocoa butter are among the natural oils included in many herbal soaps that aid in hydrating and moisturizing the skin.

7.3 Soothing and Calming-

These oils contribute to the formation of a protective barrier that prevents skin from drying out. It softens, hydrates, and soothes the skin.

7.4 Cleansing and Detoxifying-

While preserving the skin's natural oils, herbal so aps efficiently cleanse the skin by eliminating deb ris, excess oil, and contaminants. Certain plants w ith antibacterial and antifungal properties, such as neem and tea tree, can aid in skin clearing. [14][15]

8. Epidemiology:

Fungal infections, often known as mycoses, affect millions of people annually and are a global health concern. These infections may be systemic, subcutaneous, or superficial, depending on the degree of tissue involvement and the host's immune state. The epidemiology of fungal infections highlights the prevalence, distribution, and variables that lead to the spread of fungal diseases. [5]

8.1 Global Prevalence-

Skin fungal infections, sometimes referred to as superficial mycoses, are the most common fungal diseases, affecting 20 to 25 percent of the world's population at any given moment. Dermatophytosis, which includes athlete's foot and ringworm, is the most prevalent kind. Candida infections, including oral thrush and cutaneous candidiasis, are also prevalent. [24]

8.2 Incidence-

Fungal infections have been increasing globally due to the growing number of immunocompromised individuals (e.g., HIV/AIDS and cancer patients), the extensive use of antibiotics, and the increased usage of immunosuppressive medications. [6][1]

8.3 High Risk Group-

People who athletes, have weakened immune systems, or live in humid conditions are more at risk. [9][22]

8.4 Economic Impact-

These infections significantly raise the costs of m edical care connected to dermatology**.** [20][23]

9. ADVANTAGES:

- Gentler than synthetic soaps, herbal soaps are ideal for delicate skin types since they are kinder to the skin.
- Aloe vera, shea butter, coconut oil, and olive oil are examples of natural compounds that are frequently used to hydrate and nourish the skin.
- Chemical-Free: They steer clear of harsh chemicals, synthetic colours, and synthetic fragrances, which lowers the risk of skin irritation and allergic responses.
- Eco-Friendly: Crafted from natural components and biodegradable, herbal soaps are environmentally friendly.
- Essential oil-infused herbal soaps provide aromatherapy benefits like relaxation, mood enhancement, and stress reduction.
- Tea tree oil and neem are two ingredients that have natural antibacterial properties that help cleanse and shield the skin from diseases. [15][16][23]

10. DISADVANTAGES:

- Efficacy Variability: The potency and speed of action of herbal components may be inferior to those of synthetic antifungal medicines.
- Allergy Reactions: Rarely, some people may experience sensitive or allergic reactions to some herbs.
- Variability in Quality: The concentrations of active ingredients may vary depending on the plant source.
- Limited Shelf Life: The shelf life of herbal soaps is typically shortened by the absence of artificial preservatives.
- The cost of production A product with high-quality herbal components and adequate testing may cost extra.
- Limited Range of Activities: Not every kind of fungal infection may be treated with herbal antifungal soaps. [19][20]

11. Marketed Products:

S. No.	Products	Name
1.		Ketoconazole and Zinc Pyrithione soap

2.		Candid Multi Benefit Soap
3.		Mensome Anti-Bacterial and Anti-Fungal Bathing Bar
4.		Curista Tea Tree Soap Anti-fungal & Anti-Septic
5.		Kair Neem Anti-Bacterial and Anti-Fungal Soap

12. Patent:

S. No	Author	Title	Patent	Submission Date	Publication Date
1.	George Jamie Baley Frank C. Kohn	A method for disease control in mon89788 soybean	EP1883303B1	2006-05-26	2014-01-15
2.	David S. Perlin Steven Park	Assays for fungal infection	US11884985B2	2022-01-11	2024-01-30
3.	Lisa Lynn Freeman-Cook Christine J. Shaw	Electrochemical detection of bacterial and/or fungal infections	US11021759B2	2020-04-24	2021-06-01
4.	Carl Genberg Chad S. Beus	Methods for treating fungal infections	US10238665B2	2017-05-03	2019-03-26
5.	Shomir Ghosh Jeremy Robert Greenwood	ACC ester inhibitors and uses thereof	ES2855348T3	2016-11-22	2021-09-23
6.	Renèe A. Rioux Charles Michael Mcfatrich	Methylobacterium compositions for fungal disease control	US20240245055A1	2024-02-21	2024-07-25

7.	Marganit Levy Aviva Gafni	Pseudozyma aphidis as a biocontrol agent against various plant pathogens	US9161545B2	2014-02-05	2015-10-20
8.	Clarissa Lui Elizabeth A. Holmes	System and method for detecting infectious diseases	US20200013488A1	2019-04-12	2020-01-09
9.	Fugang LI Hung Hoang Pham	Strobilurin formulations	US11344028B2	2018-12-19	2022-05-31
10.	Marit Otterlei Siri Bachke	Antimicrobial agents and their use in therapy	US11337427B2	2019-10-03	2022-05-24

13. CONCLUSION:

Herbal antifungal soaps combine natural elements with therapeutic effects, making them a possible substitute for synthetic antifungal solutions. These soaps' benefits include less skin irritation, environmental friendliness, and the addition of essential oils for further skincare perks. They do have certain drawbacks, though, such as varying effectiveness, a shorter shelf life, and possible sensitivity in certain people. Although herbal soaps have a lot of promise for treating fungal skin infections and improving skin health in general, further study is required to standardize formulations and improve their effectiveness against various fungal strains. The significance of herbal antifungal soaps in contemporary personal hygiene practices is shown by this harmony between natural care and therapeutic efficacy.

REFERENCES

1. Petruzzello M. Neem. Encyclopedia Britannica. Published April 28, 2023.
2. Alzohairy MA. Therapeutics role of Azadirachta indica (Neem) and their active constituents in diseases prevention and treatment. Evid Based Complement Alternat Med. 2016.
3. Mahmoud DA, Elsayed H, Abdel-Mohsen A, et al. Antifungal activity of neem leaf extracts.
4. Dwivedi P, Tiwari M, Gupta S, et al. Herbal soap - trends, benefits, and preparation: A review. Acta Scientific Nutritional Health. 2023;7(9):10-15.
5. Reddy IVS, Palagani N. Neem (Azadirachta indica): A review on medicinal Kalpavriksha. Int J Econ Plants. 2022;9(4):45-52.
6. Soni S, Agarwal M, Patel D, et al. Curcuma longa's antifungal and antioxidant mechanisms. Int J Res Publ Rev. 2024;5(10):1715-1722.
7. Gupta A, Sharma R, Singh P, et al. Role of garlic in skin infections. Int J Res Publ Rev. 2024;5(10):1715-1722.
8. Kaur R, Yadav A, Verma R, et al. Aloe vera's antifungal properties and therapeutic effects. Int J Res Publ Rev. 2024;4(10):1574-1583.
9. Chandra S, Tiwari A, Kumar R. Tulsi's antibacterial and antifungal effectiveness. Int J Creat Res Thoughts. 2023;11(5):662-672.
10. Sharma S, Sharma N, Soni P, et al. Role of ritha and neem in soap formulations. Int J Pharm. 2024;8(3):427-430.
11. Singh R, Kumar M, Verma S, et al. Neem-based soaps for skin health. Int Res J Pharm. 2024;5(4):839-844.
12. Chauhan S, Gupta V, Sharma A, et al. Formulation processes of herbal soap. Int J Creat Res Thoughts. 2024;12(6):230-236.

13. Patel R, Kumari S, Goyal M, et al. Formulation and evaluation of herbal soap. Pharm J. 2023;6(2):125-128.
14. Kumari P, Gupta K, Soni P, et al. Evaluation of Tulsi's antifungal properties. Int J Creat Res Thoughts. 2024;12(6):240-245.
15. Sharma S, Mishra P, Gupta M, et al. Aloe vera in dermatology. Int J Res. 2023;4(8):340-345.
16. Kumari S, Singh M, Gupta P, et al. Coconut oil and neem for moisturizing soaps. Int J Pharm Sci Res. 2024;6(5):315-320.
17. Patel A, Tiwari M, Gupta R, et al. Herbal antifungal soaps: A review. Int J Res Publ Rev. 2024;5(4):844-850.
18. Yadav A, Sharma R, Singh R, et al. Glycerine's role in soap making. Int J Nov Res Dev. 2023;8(4):434-438.
19. Verma M, Tiwari P, Gupta R, et al. Use of turmeric and its properties. Int J Creat Res Thoughts. 2023;11(5):672-678.
20. Sharma R, Gupta P, Verma S, et al. Evaluation of antifungal activity in herbal soaps. Int J Res Trends Innov. 2024;8(5):158-165.
21. Kumar A, Gupta V, Sharma A, et al. Soap preparation and saponification techniques. Int J Nov Res Dev. 2023;8(4):430-435.
22. Patel R, Singh A, Sharma S, et al. Applications of neem extracts in soap. Int J Pharm Sci Res. 2024;6(5):312-320.
23. Kaur S, Yadav R, Gupta P, et al. Chamomile and its properties in herbal soaps. Acta Scientific Nutritional Health. 2023;7(9):15-20.
24. Kumari R, Gupta S, Sharma P, et al. Fighting fungus naturally: Herbal soap review. Int J Res Publ Rev. 2024;5(4):842-850.
25. Chandra S, Tiwari A, Gupta M, et al. Formulation methodologies of herbal antifungal soap. Int J Pharm Sci Res. 2024;6(5):340-348.
26. Gupta A, Sharma R, Singh P, et al. Role of garlic in skin infections. Int J Res Publ Rev. 2024;5(10):1715-1722.
27. Kaur R, Yadav A, Verma R, et al. Aloe vera's antifungal properties and therapeutic effects. Int J Res Publ Rev. 2024;4(10):1574-1583.
28. Soni S, Agarwal M, Patel D, et al. Curcuma longa's antifungal and antioxidant mechanisms. Int J Res Publ Rev. 2024;5(10):1715-1722.

HOW TO CITE: Deman Patel, Aditya Kumar, Baburam Ratre, Anjali Sahu*, Gyanesh Kumar Sahu, Harish Sharma, A Review on Herbal Anti-Fungal Soap, Int. J. of Pharm. Sci., 2025, Vol 3, Issue 4, 214-221 https://doi.org/10.5281/zenodo.15124263