WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.453
Volume 13, Issue 11, 1183-1197. Research Article ISSN 2277–7105

FORMULATION AND EVALUATION OF HERBAL SCRUBBINGSOAP

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Article Received on
08 April 2024,

Revised on 29 April 2024,
Accepted on 19 May 2024

DOI: 10.20959/wjpr202411-32476

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ABSTRACT

A herbal soap was formulated using the powder of nutmeg. myristica fragrans belonging to the family myristicaceae, It has been cultivated throughout the world and used for food flavoring, essential oil applications and in traditional medicines. Mostly nutmeg contains terpenes and phenylpropenes. Chemical composition of these constituents varies due to different cultivation conditions. Nutmeg is considered as essential ingredient of numerous industrial applications ranging from food to cosmetics. Its pharmaceutical products are also important due to its antioxidant and antimicrobial properties. More uses and applications of nutmeg byproducts are continuously added. More research on maximizing yield, optimum preservation and oil extraction methods are needed. Herbal soap ingredient were used nutmeg powder, tulsi powder, turmeric powder, saffron, nutmeg oil, glycerine, distilled water, coustic soda, coconut oil, steric acid, alcohol, propylene glycol.

KEYWORDS: herbal scrub soap, antimicrobial, anti-inflammatory, etc.

INTRODUCTION

Herbal srub soap is a natural skincare product that harnesses the power of botanical ingredients to cleanse, nourish, and rejuvenate the skin. Unlike conventional soaps that may contain harsh chemicals or artificial fragrances, herbal face soaps are often formulated with plant-based extracts, essential oils, and other natural ingredients known for their beneficial properties. Herbal face soaps typically contain a blend of herbs, botanical extracts, and essential oils chosen for their skincare benefits. Common ingredients include aloe vera,

calendula, chamomile, lavender, tea tree oil, and various fruit extracts. Herbal face soaps provide gentle yet effective cleansing, removing dirt, excess oil, and impurities from the skin without stripping away its natural moisture. They are suitable for all skin types, including sensitive and acne-prone skin. Many herbal face soaps are formulated to hydrate and moisturize the skin while cleansing it. They often contain ingredients with emollient properties that help to soften and soothe the skin, leaving it feeling refreshed and revitalized. he botanical ingredients in herbal face soaps are rich in antioxidants, which help to neutralize free radicals and protect the skin from environmental damage. Regular use can contribute to a healthier, more radiant complexion over time. In addition to their skincare benefits, herbal face soaps often offer aromatherapeutic effects due to the presence of essential oils. These natural fragrances can help to uplift the mood, promote relaxation, and enhance the overall sensory experience of using the soap. Many herbal face soaps are produced using sustainable and eco-friendly practices, minimizing their environmental impact. They may be packaged in recyclable materials and free from harsh chemicals that can harm the environment. 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. Soap has a variety of qualities, including good moisturizing benefits and long-lasting aroma. Using herbal scrub soap regularly can help improve the overall appearance and health of your skin. In addition to exfoliation, these soaps may contain ingredients with various skincare benefits, such as soothing irritated skin, hydrating dry skin, or promoting collagen production for firmer, more youthful-looking skin.

AIM AND OBJECTIVE

AIM: Formulation and Evaluation of Herbal Scrubbing Soap.

OBJECTIVE

- Herbal soaps are formulated to cleanse the skin gently without stripping away its natural oils, making them suitable for sensitive skin types.
- They often contain natural herbs, botanical extracts, and essential oils known for their skin-nourishing and therapeutic properties. These ingredients can provide benefits such as hydration, soothing irritation, and promoting overall skin health.
- Herbal soaps may target specific skin conditions like acne, eczema, or psoriasis by incorporating herbs with anti-inflammatory, antibacterial, or antifungal properties to help alleviate symptoms.

- Many herbal soaps incorporate essential oils for aromatherapy benefits, which can uplift mood, reduce stress, or promote relaxation during bathing.
- They are often biodegradable and free from harsh chemicals, making them environmentally friendly options compared to conventional soaps.

ADVANTAGES AND DISADVANTAGES OF SCRUBBING SOAP

- **Advantages**

1. Body scrubs remove dead skin cells,
2. They allow your skin to absorb moisturizer better. By doing dead skin cell buildup, any moisturizer applied afterward will soak into the skin more thoroughly.
3. They unclog pores and prevent ingrown hairs.
4. They leave your skin smoother and more even.

- **Disadvantages**

1. Hard scrubbing motions and hard scrubbing chemicals may cause skin irritation including redness, inflammation.
2. Over scrubbing can result in open pores which are exposed to pollution and UV rays at the same time.

DRUG PROFILE

The details of the plant material used for the formulation of face soap are mentioned below.

Nutmeg Powder

- Synonyms: Myristica fragrans.
- Biological Source: Nutmeg consists of dried kernels of the seeds of Myristica fragrans.
- Family: Myristicaceae.
- Chemical Constituents: Nutmeg contains about 5 to 10% of volatile oil and about 30% of fat. The volatile oil contains myristicin, elimicin and safrole as major constituents. Myristicin is chemically methoxy safrole and very poisonous known to produce narcotic effect. The fat of nutmeg is also known as nutmeg butter (banda soap).
- Uses : Nutmeg and its oil are used as stimulants, flavouring agents and carminatives. The expressed fatty oil and the volatile oil have been used externally in chronic rheumatism.

Fig no. 1: Nutmeg.

Turmeric Podwer

- Synonym: Haldi
- Biological source: Turmeric consists of dried, as well as fresh rhizomes of plantknown as Curcuma longa linn.
- Family: Zingiberaceae.
- Chemical constituents: Curmin, Dimethoxy Curmin.
- Use: Use as antibacterial. Help to brighten skin and the appearance of uneven tone, leaving you with clearer skin.

Fig no. 2: Turmeric.

Tulsi Powder

- Synonym: Holy basil
- Biological Source: Tulsi consists of the fresh and dried leaves of Ocimum species like Ocimum sanctum L. and Ocimum basilicum L.
- Family: Lamiaceae.
- Chemical constituents: It contains approximately eugenol, carvacrol, and eugenol-methyl-ether. It also contains caryophyl-lin. Seeds contain fixed oilwith good drying properties.
- Use: Tulsi use for addressing skin concerns like acne and skin irritation due to its anti--inflammatory, antiseptic, and antibacterial properties.

Fig no. 3: Tulsi.

Saffron

- Synonyms: Saffron, hay saffron, kesar
- Biological source: dried stigmas and upper parts of styles of Crocus Sativus
- Family: Iridaceae
- Chemical constituents: Crocin & Crocetin picrocrocin safranal
- Uses: Use as a Colouring agent Flavouring agent Anti-spasmodic stimulant.

Fig no. 4: Saffron.

CHEMICAL COMPOSITON

NUTMEG

Myristicin: This is a compound responsible for nutmeg's distinct aroma and flavor. It hasbeen studied for its potential antimicrobial properties.

Elemicin: Another aromatic compound found in nutmeg, elemicin contributes to itsfragrance.

Eugenol: Known for its pleasant aroma, eugenol also possesses antibacterial and anti-inflammatory properties, which can be beneficial for skincare.

Safrole: This compound is present in smaller amounts in nutmeg and has been studied for its potential medicinal properties, although its use is restricted in some regions due to safety concerns.

TURMERIC

Curcuminoids: Curcumin is the most well-known curcuminoid in turmeric, responsible for itsvibrant yellow color. It also possesses antioxidant and anti-inflammatory properties.

Essential oils: Turmeric contains volatile oils such as turmerone, atlantone, and zingiberene, which contribute to its aroma and potential therapeutic effects.

Carbohydrates: Turmeric contains carbohydrates like glucose, fructose, and starch, whichcan provide moisturizing properties in soap formulations.

Proteins: Turmeric contains proteins, which may contribute to the overall nourishing properties of turmeric-infused soap.

Minerals: Turmeric contains minerals like calcium, iron, potassium, and zinc, which can provide skin-nourishing benefits.

SAFFRON

Crocin: Crocin is a water-soluble carotenoid compound responsible for the characteristic red color of saffron. It is also a natural dye and antioxidant.

Picrocrocin: Picrocrocin is a bitter glucoside compound that gives saffron its distinctive taste. When saffron is steeped in hot water, picrocrocin is partially responsible for its bitter flavor.

Safranal: Safranal is an aromatic compound responsible for the characteristic aroma of saffron. It forms from the breakdown of picrocrocin during the drying process.

Carotenoids: Apart from crocin, saffron contains other carotenoids such as zeaxanthin, lycopene, and beta-carotene. These compounds contribute to the overall nutritional value of saffron and may have antioxidant properties.

Flavonoids: Saffron contains flavonoids such as kaempferol and quercetin, which also contribute to its antioxidant properties.

Volatile oils: Saffron contains volatile oils, which are responsible for its fragrance. These oils include terpenes like pinene and cineole.

Minerals: Saffron contains various minerals such as potassium, calcium, magnesium, and iron, although in smaller amounts compared to its other constituents.

TULSI

Eugenol: This is one of the primary components responsible for the distinctive aroma of tulasi. It also possesses antibacterial and antifungal properties.

Ursolic acid: Known for its anti-inflammatory and antimicrobial properties, ursolic acid is found in the leaves and essential oil of tulasi.

Rosmarinic acid: This compound has antioxidant properties and is believed to contribute to the overall health benefits of tulasi.

Apigenin: A flavonoid found in tulasi, apigenin has antioxidant, anti-inflammatory, and anti-cancer properties.

Ocimarin: This compound is specific to tulasi and is believed to have potential hepatoprotective (liver-protecting) effects.

Carvacrol: Present in the essential oil of tulasi, carvacrol exhibits antimicrobial properties. Beta-caryophyllene: Another component found in the essential oil of tulasi, beta-caryophyllene has anti-inflammatory properties and may contribute to the herb's therapeutic effects.

MATERIAL AND METHODS

In our present study we will deals the formulation and preparation of herbal scrubbing soap for immediate cleansing and remove dead skin by the help of some natural ingredient. In our experiment we will use nutmeg powder, turmeric podwer, tulsi powder, saffron, nutmeg oil, glycerin Soap base.

Sr. No.	Ingredients	Quantity
1.	Nutmeg Powder	8 gm
2.	Tulsi Powder	4 gm
3.	Turmeric Podwer	1 gm
4.	Nutmeg Oil	3-4 Drops
5.	Saffron	2 gm
6.	Glycerin Soap Base	85 gm

METHOD OF PREPARATION

- Take distilled water 40 gram in beaker
- Add caustic soda 10 gm in beaker leave it for half hour
- Take another beaker add 70 gm coconut oil in it
- Add stearic acid 30 gm in it
- Add lye solution
- Mix solution slowely& heat it for 10 min
- Take glycerine 17 gm in it
- Add alcohol 70 gm mix it by stirrer
- Cover the solution for 5 min
- Then Add propylene glycol 90 gm
- Mix & heart for 2 min

- Blend the solution
- Add to any mould or container
- Leave it for 1 day.

Fig no. 5: Soap Base.

Ingredient	Quantity
Disstilled Water	40 ml
Caustic Soda	10 gm
Coconut oil	70 gm
Steric acid	30 gm
Glycerin	17 gm
Propylene Glycol	70 gm
Alcohol	70 gm

- soap formulated with basic glycerin soap and which contain stearic acid, 0.70gm soft paraffin.
- Weighed 1gm of stearic acid, 0.70gm softparaffin, 5ml ethanol was taken.
- Glycerin basic soap was melted first and to it 1gmstearic acid, 0.70gm soft paraffin, 5ml ethanol were added molten mixture became a homogeneous.
- The semisolid mixture was poured into a container and allowed to solidify.\
- 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.

Fig no. 6: Nutmeg Soap.

TOP BENEFITS OF USING NUTMEG SOAP FOR SKIN

Regular use of Nutmeg on the skin can help in reducing redness, puffiness, and other signs of aging. It has exfoliating properties that can help unclog pores and remove dead skin cells, resulting in brighter and smoother skin.

Additionally, Nutmeg has antibacterial properties that make it an effective ingredient for fighting acne and preventing future breakouts. Overall, incorporating nutmeg into your skincare routine can provide numerous benefits for a healthy and glowing complexion. Here are some of its top benefits

1. Helps Treat Acne

One of the main benefits of nutmeg for skin is its antimicrobial properties. The active ingredient in nutmeg, Myristicin, has been shown to have antibacterial, antifungal andantiviral propert.

This makes Nutmeg an effective ingredient in the treatment of acne, as it helps to kill the bacteria that cause acne breakouts. In addition, nutmeg is also effective in treating other skin infections, such as candidiasis and eczema.

2. Delays Signs Of Ageing

Nutmeg is also rich in antioxidants, which help to protect the skin from damage caused by free radicals. Free radicals are unstable molecules that can damage the skin cells and cause premature aging.

Antioxidants help to neutralize these free radicals, thereby preventing the damage they can

cause. This makes nutmeg an effective ingredient in the treatment of aging skin, as it helps to slow down the aging process and keep the skin looking youthful.

3. Exfoliates Skin

Nutmeg is also a natural exfoliant, which means it helps to remove dead skin cells, improve skin texture and promote skin renewal. Regular exfoliation helps to unclog pores, which in turn helps to prevent acne breakouts and blackheads. Exfoliation also helps to improve the absorption of other skin care products, making them more effective.

4. Brightens The Skin

Nutmeg has been shown to improve skin tone and give the skin a brighter, more youthful appearance. This is due to the fact that nutmeg is rich in vitamin C, which is known for itsskin brightening properties. Vitamin C helps to boost collagen production, which in turn helps to firm and tighten the skin, giving it a more youthful appearance.

5. Combats Pigmentation

The high vitamin C content in Nutmeg helps to brighten the skin and improve radiance, while its antioxidant properties protect the skin from damage caused by free radicals. Regular use of nutmeg on the skin can help to improve skin texture and reduce the appearance of dark spots, making it a useful ingredient for those looking to address pigmentation concerns.

6. Relieves Itching and Swelling

Nutmeg also has anti-inflammatory properties, which makes it an effective ingredient in the treatment of skin conditions such as eczema, psoriasis and rosacea. The anti-inflammatory properties of nutmeg help to reduce redness, swelling and itching associated with these conditions.

TYPES OF SKIN AND SKIN-RELATED PROBLEMS OF USERS OF SOAP

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. 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.

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.

EVALUATIONS TEST

The herbal soap formulated was evaluated for the following properties:

Test	Result
pH	6.8
Appearance	Good
Colour	Dark Brown
Odour	Sweet
Shape	Oval
Foam Retention	1 cm per minute
Irrigation	No Irrigation

pH :- the pH was determined by using pH paper. the pH was found to be basic in nature.

Foam retention:- 25 ml of the one percent soap solution was taken into a 100 ml graduated measuring cylinder the cylinder was covered with hand andshaken 10 times. the volume of foam at 1 minutes interval for 4 minutes was recorded . it was found to be 5 minutes.

Irrigation: performed by rubbing soap into the skin for ten minutes. If there is noirritation, the product is regarded as non-irritating.

Foamability: Small amount of formulation was taken in a measuring cylinder and water in it and shake for 10 times and note the final volume.

Fig no. 7: Foamability test.

Patch test: Patch testing is well established method for diagnosing the hypersensitivity as well as to determine the potential of the substance to cause allergic reaction on skin. In patch test reaction of formulation on skin is observed in 2-3 days.

Fig no. 8: Patch test.

Stability Study: Stability of the formulation is check by placing the scrubig soap in a container on room temperature for one month.

RESULT

The soap's pH was measured. A pH strip was used to determine the soap's pH, which was 6.8 It was also determined the remaining parameters, including foam height, foam retention, free alkali percentage, and alcohol insoluble matter.

ACKNOWLEDGEMENT

Any research is never an individual effort it is contributory efforts of many hearts and brains. We all marvel at the beautiful rose, the rose with all its beauty and grandeur. But seldom, we pause and thank the gardener who patiently mannered. The dissertation I have written is the fruits of many such unseen hands I feel deeply obliged and indebted to **Shri.Mohan Patil Sonawane,** President of **Shree Goraksha Shaikshanik Bahuuddeshiya Sanstha** for his keen interest, moral support and for providing me with all the facilities to carry out the present study to a successful completion.

It is indeed a proud privilege for me to acknowledge with profound gratitude to my guide **"Miss. Ashwini Khairnar"**, (Assistant Professor), **Shree Goraksha College of Pharmacy Khamgaon Chhatrapati Sambhajinagar,** under whose active guidance, innovative ideas, constant inspiration and help has made this research work possible. I am ever grateful and appreciative of all your guidance, advice, support, encouragement and wisdom which you contributed at all stages throughout my studies.

I thank Principal **Dr. Santosh G. Shep sir** for conferring full liberty to stay in the researchlab and providing all necessary facilities.

I am highly obliged and owe my special thanks to all my teachers for their moral support and cooperation.

My special thanks to **"Miss Vaishnavi Chivte, Miss. Ankita Saraf, Miss. Snehal Dhawale,"** for their valuable suggestion and cooperation throughout the project work.

I extend my heartfelt thanks to all office staff, library and laboratory staff of **Shree Goraksha College of Pharmacy Khamgaon Chhatrapati Sambhajinagar**, especially **"Mr.Bhagwan M. Kale Sir, Mr.Dadarao B. Sonawane Sir"** for their timely help during my project.

How can I forget to thank my dear **friends "Ketan Khadake, Arti Kharat"** for their cooperation and moral support without which the successful completion of this project was not possible.

Besides this, I might miss to mention certain names that knowingly or unknowingly helped me the successful completion of this project. I thank all these people for every ounce of effort they contributed.

CONCLUSION

The scrubbing soap was prepared and evaluated. The main aim of these project is to remove the pigmentation and dead cells from the skin and help to make skin glowing. The above evaluation test show that the scrubbing soap are non irritant and having the gritty particles which help to remove the dead cells from the skin. The chemical constituents in these scrubbing soap help to make skin glowing.

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