Formulation And Evaluation on Herbal Neem Soap

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***Abstract*— This study presents the formulation and benefits of an herbal soap riches with extracts from neem, leaves aloe Vera, turmeric powder, sandalwood powder, vit E oil, rose water saffron. These ingredients were selected for their well functioned antimicrobial, antioxidant, and skin-nourishing properties... allover give there antioxidant and anti-inflammatory property, while neem leaves are for antiseptic and antifungal properties, sandalwood give there calming and antiseptic properties and give brighten effect to the skin saffron reduce the pigmentation and improve the skin texture and rose water plumps the skin. The combination of these Extracts creates a soap skin health, promoting a clear, hydrated, skin**

***Index Terms*— Home grown cleanser, neem, aloe Vera, vitamin e. Turmeric, rose water, Jasmin oil, saffron, sandalwood powder.**

I. INTRODUCTION

Cosmetics are materials or mixtures of Materials used to be rubbed, poured, sprayed, or used On parts of the human body for the purpose of Cleaning, maintaining, increasing attractiveness, or Changing appearance, and are not classified as drugs. Currently, there are quite a lot of cosmetics on the Mark but most of these cosmetics contain several Compounds that have the potential to cause Interference with the barrier and skin structure. The cosmetics which are formulated using herbs having cosmetic action. In cosmetics, both natural and phytol ingredient are used natural product includes oils, extracts, secretion etc.

Scope is the product of a chemical process called saponification, which occur when acid in the form of animal or vegetable fats are combined with an alkali and produce the mixture of scope and glycerin. Quite simply it's a slippery substance that produces bubble. It included secrets for hand milling your own scope from a store bought scope base with added ingredients to make a superior, quality bar. The addition to the basic white scope include fragrant essential oils just like lavender oil, Jasmin oil. colorant, herbs like neem leaves, allover , turmeric, sandalwood powder. The all ingredients common and readily available in grocery stores, natural food market, or easily grown in home garden There are also a variety of packaging and labeling ideas and plans for creaming unique and attractive gift collections with scope and bath produces that will delight family and friends, children and adults. Herbal scope is avoid harsh chemical and synthetic additives, making them suitable for sensitive skin. The use of essential oils and potential aromatherapy benefits.

NEEM LEAVES

There are a whole lot of ingredients that make it to your grandmother's beauty secret list — and one that probably tops the list is neem. For centuries, neem has been known for its medicinal properties that helps soothe a whole lot of skincare issues and help treat the skin. And that's why it is often found in bathing bars and soaps. The oil extracted from neem, which is used in these soaps, is known to hold antioxidant, antimicrobial, antiphrastic, and anti-inflammatory properties, making it a great skin healer. Basically it's the one-stop-solution to a whole lot of your skincare requirements. Here are a few neem soap benefits why it should be part of your shower routine.

Fights against Free Radical

Neem is loaded with antioxidants that help fight free radicals and any sort of damage caused by them. On regular basis our body goes through a whole lot of trauma — from UV damage to exposure to pollution, heat, and dirt. All of these factors combined trigger your body to react, resulting in damaged skin. One of the benefits of neem soap is that it repairs the skin and prevents any further damage

ALOE VERA:

One of the plant that can be used as natural ingredients in cosmetics is aloe Vera (Aloe Vera). Aloe Vera is very easy to get and has also been widely cultivated in Indonesia. Aloe Vera can be useful as a raw material for the pharmaceutical cosmetic industries, as well as raw material for health food, beverages, and medicines without containing chemical preservatives. The benefits of aloe Vera are very diverse, including as an antibiotic, antiseptic, antibacterial, antiviral, anti-infective, anti-inflammatory, and anti-swelling. Aloe Vera is effective in replacing damaged cells and improving skin conditions because there are polysaccharides that work together with essential amino acids and protein breaking enzymes. Aloe Vera (Aloe Vera) comes from Africa and belongs to the Liliaceous family. This plant is widely found in Indonesia and easily inhabits tropical and subtropical climates. Plants such as cacti with this type of succulent contain a lot of fluid. Aloe Vera is a plant that can live at high temperatures or is grown as an ornamental plant in the yard. The characteristics of aloe Vera are spur shaped, thick, brittle, jagged edges or slightly pointed leaves in the form of small spines. The mottled surface is 15-36 cm long and 2-6 cm wide. Aloe Vera is excellent in the cosmetic field because it contains many nutrients that are good for the skin. Aloe Vera is made up of 95% water and 5% water. The rest consists of active ingredients such as essential oils, amino acids, minerals, vitamins, enzymes, and glycoproteins. The content of Vitamin C and Vitamin E in aloe Vera is very effective for tightening the skin. Aloe Vera also helps to nourish the hair, making it soft and shiny. These benefits are achieved by many of the key substances in aloe Vera, including vitamin B1, vitamin B2, vitamin B3, vitamin B6 vitamin C, choline, folic acid, glucose, mannose, aldopentose, and enzymes. Aloe Vera contains quite the complete nutrients that the body needs. Other aloe Vera content in vitamins A, B12, E, inositol, and folic acid.

The mineral content includes calcium (Ca), magnesium (Mg), potassium (K), sodium (Na), iron (Fe), zinc (Zn), and chromium. (cr). Traditional medicinal plant such as mango basil, almond, and neem has been recognized for their therapeutic properties and are commonly used in various culture for treating skin aliment

This study aims for formulation of multipurpose soap by incorporate mango ,teak, neem ,almond Each of these ingredient have unique bioactive properties which are contributing in herbal soap Mango leaves have antimicrobial properties and also contributing to skin protection teak leaves are for antibacterial and anti-inflammatory effect almond leaves are for moisturizing effect while neem leaves are for antiseptic and antifungal The rationale behind combining these specific ingredient lies in their synergetic potential to enhance clean and skin regeneration by formulating a soap that give benefit of these herbal extract .This research will explore the preparation methods of multipurpose soap evaluate its potential benefit based on the properties of each ingredient and discuss safety consideration including usage and potential adverse effect additionally we will highlight the importance of quality control and sourcing of herbal ingredient to ensure the safety and efficacy of product .

Need& objective:-

This review seeks to achieve one paramount goal: an illustrative analysis of herbal soap products with regards to

1. The formulation techniques of herbal soaps.
2. The benefits and therapeutic properties of key herbal ingredients.
3. The evaluation of herbal soaps in terms of their cleansing and antibacterial efficacy.
4. The market trends and consumer preferences related to natural personal care products.

Benefits of herbal cleanser:
Helps reduce acne and dry skin. Reduces brown, white and itchy skin. Cleanses the skin and removes impurities from the skin. This cleanser contains important antioxidants that keep the skin moisturized.

MATERIAL AND METHODS:-
The following powder ingredients are used for herbal soap this research article is about formulation and evaluation of herbal soap by using natural ingredients like neem leave, Aloe Vera leaves , all these leaves are dried and grind to make paste the ingredient used in herbal soap are given below

List of materials
1) Aloe Vera leaves
Scientific classification
Family: asphodelaceae
Scientific name: Aloe barbadensis Miller
1) Provide hydration soothing properties
2) Help in skin repair and anti-aging
3) Aloe help s reduce inflammation

2) Neem leaves

Scientific classification
Family :meliaceae
Scientific name: Azadirachta indica
1) Antibacterial properties: neem leaves contain strong antibacterial properties which are used in acne caused by bacteria
2) antifungal: neem leaves also used to treat fungal infection caused to skin
3) moisturizing effect: neem leaves have moisturizing properties and it help to hydrate the skin
4) Neem reducing dark spots, scars and pigmentation.
5) Neem can help regulate oil production, making it beneficial for oily and acne –prone skin.

3) Vitamin E Capsule

Vitamin Capsule can be used on the face to potentially moisturize, reduce the appearance of fine lines, and wrinkles, and improve skin texture.

- Moisturizes the skin
- Acts as a cleansing agent
- reverses premature skin aging
- Lightens dark spots
- Prevent wrinkles
- Help to skin glow
- Helps exfoliate

3) Sandalwood Powder

Synonym

Sandalwood powder is popular natural remedy for various skin concerns, including acne, dark spots, and uneven skin tone.

- Prevent pimples
- Reduce wrinkles and signs of aging
- Heals dry skin
- Enhances skin brightness
- Remove blemishes
- Exfoliates the skin
- Promote healthy and smooth skin

5.Saffron

Synonym: - saffron crocus

Family: - iridaceous

- saffron use for deep clinging of face
- it reduce the pigmentation
- improving texture and treating acne
- saffron antioxidants help protect the skin from free radical damage, which can lead to premature aging
- It can also help fight the bacteria that cause acne and promoting cleared skin.

6) Rose water

Synonyms: floral water

Family: Rosacea

Is a byproduct of the production of rose essential oil through steam distillation of rose petals? It is a natural product that has been used for its skincare and aromatic properties. Here are some key aspects of rose water:

Skincare Benefits:

1) Hydration: Rose water helps to hydrate and moisturize the skin, making it suitable for all skin types, including dry and sensitive skin.

2) Balancing pH: It helps to maintain the skin's natural pH balance, which is essential for healthy skin function and preventing issues like dryness and acne

3).Anti-Inflammatory: Rose water has anti-inflammatory properties that can help soothe irritated and inflamed skin, reducing redness and discomfort.

6) Coconut oil

Coconut it acts as a natural cleanser, moisturizer and antimicrobial agent, leaving skin feeling soft and supple

Coconut oils fatty acids and natural moisturizers prevent skin from drying out after washing.

Plant Extract and Their Role

Neem leaves	Antiseptic and antifungal
Aloevera leave	Provide hydration shooting properties
Sandal wood powder	Brightens and evens skin tone

Turmeric powder	Anti-inflammatory, anti-oxidant and strong anti-microbial properties.
Vitamin E capsule	Mineraliurization and hydration Skin repair
Rose water	Balancing skin PH, Antiaging properties. Enhance Natural Glow.
Saffron	Reduce dark spots and pigmentation, Fight acne, protect against sun damage.
Jasmine oil	As preservative, and reduce blemishes.

EXTRACTION PROCESS:-

1) Neem

Figure of solution of neem leaves

The Azadirachta indica, Ocimum tenuiflorum. Sapindus mukorixxi and Aloe barbadensis, Citrus trus limon powder was extracted with water and chloroform at 70:30 ratio by above stated powder was taken in conical flask and extracted with water for four hours with occasional agitation then filtered.

Preparation of Solvent Extract
Extraction of Azadirachta indica
1. Fresh neem leaves are collected and shed dried for 15 days
2. The dried leaves are then powdered using mortar and pestle.
3. The leaves weighed 54.3gm and macerated in a beaker using 280ml distilled water and 120ml chloroform with continuous stirring.
4. The prepared mixture is covered with aluminum foil and allowed to macerate for three days, stirring every day.
5. After that, filter paper is used to filter the mixture.
5. On a hot water bath, the mixture's extra solvent was dried.
6. The dried extract was collected and kept in desiccators for cooling.
7. The prepared extract is weighed.

2) Aloe Vera
To extract aloe Vera gel using a hot air oven, you'd typically start by separating the gel from the leaves, then drying it in the oven at a controlled temperature. After drying, the gel can be further processed into a powder form for extraction or further use. Here's a more detailed breakdown:
1. Preparation:
Harvesting and Cleaning:
Collect the aloe Vera leaves, wash them thoroughly with distilled water, and remove any dirt or debris.

Gel Extraction:
Carefully peel the leaves to expose the gel layer. Use a spoon or spatula to scoop out the gel, avoiding the outer skin and alone (yellow sap).
Filtration (Optional):
If desired, you can filter the gel through a cheesecloth or fine-mesh sieve to remove any larger particles or fibers.

2. Drying in a Hot Air Oven…
Drying Time:
Monitor the drying process. The time it takes will vary depending on the thickness of the gel and the oven's performance. It can range from a few hours to overnight. The gel is dry when it becomes brittle and easy to break apart.
Cooling:
Allow the dried gel to cool completely before proceeding.

3. Extraction:
Solvent Extraction:

For further extraction, you can soak the dried gel powder in a solvent like methanol or ethanol for a specified period.

Filtration and Evaporation:

Filter the solution to remove any solid residue, then use a rotary evaporator or other evaporation method to remove the solvent, leaving behind the extracted compounds.

FORMULATION TABLE

Sr.no	Ingredients	F1	F2	F3
1	Soap base	64	55	59
2	Neem juice	14	15	10
3	Sandalwood powder	1.5	2	-
4	Saffron	1.5	1.5	-
5	Vit .E capsule	1	1.5	1.5
6	Orange oil	2	_	3.5
7	Aloe Vera extract	10	13	14
8	Coconut oil	5	10	3.5
9	Rose water	q.s	q.s	q.s

Procedure formation of herbal soap from neem leave, aloe Vera leave, sandalwood powder, turmeric powder, vitamin E capsule, involve in various steps, from preparing the herbal extracts to creating the soap base and finally combining everything.

Here is a step-by-step procedure:

Equipment:

Stainless steel or heat-resistant glass mixing bowls

1) Soap base: for the making of the herbal soap we need soap base

2) Cut the soap base: cut the soap base into small pieces

3) Melt the soap base: in beaker soap base is melted by heating with neem, aloe Vera gel herbal extract

4) Then vitamin Bemrose water, Sandal wood powder, saffron was also added and stirred continuously to mix the herbal soap ingredient as mention above.

5) Then add essential oil like orange oil and coconut oil

6) It was poured in a soap base and cooled for 12 hrs.

7) lubricating to soap base : lubricating to soap mound with count oil apply count oil throughout to soap mound by these way soap solution is not stick

USE OF SOAP

Treat acne antibacterial properties of neem fight acne causing bacteria which help in the treatment and prevention of acne.

- Tackles blackheads and whiteheads. • Aloe Vera shows moisturizer it is moisture the skin without giving it a greasy feel. So it is perfect for anyone with an oily skin.
- It also fight sunburn oracle. This soap is mainly used all skin problem Herbal medicinal products are in greater demand than the synthetic ones because of many reasons

Lesser Side effects

Better safety and efficacy

Easily available
Better compatibility with additives
Potent therapeutic effect
Cost-friendly
Greater are for selection
No requirement of animal testing
Better compatibility with all types of skin

Disadvantage of herbal soap

- Variable Quality: Herbal soaps are available in a wide range of formulations, and the quality may vary. Some herbal soaps may contain lower quality ingredients or lack the desired efficacy, which can affect their performance.
- Shorter Shelf Life: Herbal soaps may have a shorter shelf life compared to synthetic soaps, as they do not typically contain preservatives. This means that they may spoil or become less effective over time.
- Higher Cost: Herbal soaps may be more expensive compared to synthetic soaps, as they often contain higher quality natural ingredients. This can make them less affordable for some consume

➢ Evaluation Test of soap

The herbal soap formulated was evaluated by the various evaluation parameter

1) Physical evaluation

- ➢ Color-Green
- ➢ Odor –pleasant
- ➢ Appearance-good

a) PH: the pH was determined by using pH paper the pH was found to be basic in nature

b) Foam retention: 25 ml of the one percent soap solution was taken into a 100ml

Graduated measuring cylinder the cylinder was covered with hand and shaken 10 times the volume of foam at 1 minute interval for 4 minute was recorded it was found to be 5 minute

c) Moisturizing effect: test how the soap affect skin hydration skin should feel soft and not

Overly dry after use – Leaves skin feeling soft and hydrated

3) Safety and Sensitivity Test:

• Patch Test: conduct patch test on a small area of skin to check for any adverse

Reaction – no adverse reaction was found

CONCLUSION

The herbal soap made from and neem leaves and aloe Vera leaves and sandal wood power, vitamin e capsule, coconut oil, rose water is a natural product with several beneficial properties. It effectively cleanses, moisturizes and soothes the skin while being safe and gentle for regular use. The combination of these herbal ingredients provides a well-rounded skincare product that can address various skin concerns such as dryness, acne, and irritation. This soap offers a pleasant user experience with its natural fragrance and smooth lather, and its duration gives good value for use over time. For those seeking a natural alternative to commercial soaps, this herbal soap formulation provides a compelling option with its blend of nourishing and therapeutic

RESULT

Among all the formulations the formulation f2 in both table 1 and 2 exhibited good result the physicochemical parameters such as color, odor, appearance, and pH were tested. The pH of the soap was found to be 6.5 with pH strip Remaining parameters such as foam height, foam retention moisture content, and were also determined Foam Height was found to be: 2.5 Foam Retention was found to be: 5min Moisture Content in soap is:-6.66%

DISCUSSION

The present work is concerned with the formulation of soap using extract of neem and aloevera, sandal wood powder, vit E, rose water. The formulated soap was a dry, stable solid showing no color change and good appearance and is foamy in nature. It showed good skin compatibility and causes no irritation when tested on 5 volunteers.

LITERATURE REVIEW

History of soap making and basic ingredients of soap: - The precise nature in which soap came to be discovered is somewhat unclear and there are various legends surrounding its beginnings. The following timeline gives a broad indication of how it all started and how it progressed to the product we have come to enjoy as the modern soap. History of cleansing in India and China Before the advent of soap, the primary

cleansing agent in ancient India was taken from soap nuts also known as soap berries

(From the plant Sap Indus Sayonara). The literal translation of Sap Indus is sap = soap and Indus = India. In other words, soap from India! Patel Ana ET. al, IJSRR 2022, 11(2), 42-72 IJSRR, 11(2) April – June, 2022 Page 48 Fig-1 Cleansing agent- Aretha and Turmeric The nut was used in ancient China as well and its usage spread from India to Middle Asia and then Europe. The skincare routines of ancient Indians involved the addition of a variety of herbs such as turmeric, Tulsa (holy basil), neem (bark and leaves), lotus petals and sandalwood paste amongst others which were common ingredients in their skincare creams. Modern day soap-making practices Modern soaps benefit enormously from the industrial process, our advanced understanding of the chemistry of soap and an array of ingredients from around the world on the back of a global trading history. Historically, the fat component of the very early soaps was from animals as harvesting and processing of fats from vegetable sources were not discovered as yet. Notably, these fats tended to be tallow from the carcasses of animals i.e. fat from rendered beef, and there are very compelling reasons for using this.

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