



FORMULATIONS AND EVALUATION OF HERBAL FACE CLEANSER

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ABSTRACT :

Herbal face cleansers have gained significant attention due to their natural ingredients, skin-friendly properties, and minimal side effects. This study focuses on the formulation and evaluation of a sandalwood-based herbal face cleanser, leveraging the well-known skincare benefits of sandalwood (*Santalum album*). Sandalwood is rich in anti-inflammatory, antibacterial, and skin-soothing properties, making it an ideal ingredient for cleansing and rejuvenating the skin.

The formulation incorporates sandalwood powder or essential oil, along with other herbal ingredients such as aloe vera, rose oil and rose water, which enhance the cleanser's cleansing, moisturizing, and anti-acne properties. The prepared herbal face cleanser was evaluated for its pH balance, cleansing efficiency, stability, and antimicrobial activity. The results indicated that the formulation effectively removes dirt, excess oil, and impurities while maintaining the skin's hydration and natural glow.

Due to the absence of harsh chemicals, this sandalwood-based herbal face cleanser is suitable for all skin types, particularly sensitive and acne-prone skin. The study highlights the potential of herbal formulations in skincare and encourages further research to standardize and commercialize such natural cosmetic.

OBJECTIVES :

1. To formulate a chemical-free, herbal-based face cleanser utilizing sandalwood (*Santalum album*) and other natural ingredients beneficial for skin health.
2. To evaluate the cleansing efficacy of the formulation in removing dirt, excess oil, and impurities without stripping the skin's natural moisture.
3. To harness the skin-soothing, anti-inflammatory, and antimicrobial properties of sandalwood to help reduce acne, blemishes, and skin irritation.
4. To ensure the formulation maintains skin hydration and enhances skin brightness while preventing dryness and irritation.
5. To assess the physicochemical properties such as pH balance, stability, texture, and consistency for safe and effective application.
6. To compare the herbal cleanser's performance with commercially available synthetic cleansers to establish its advantages in terms of safety and efficacy.
7. To promote the use of natural and sustainable ingredients in skincare, reducing the risks associated with synthetic chemicals and artificial additives.

INTRODUCTION :

In recent years, there has been a growing demand for natural and herbal skincare products due to their mild action, minimal side effects, and eco-friendly nature. Among various natural ingredients, sandalwood (*Santalum album*) has been widely used in traditional medicine and cosmetics for its soothing, antimicrobial, and skin-enhancing properties.

Sandalwood is known to cleanse the skin effectively while providing hydration, reducing acne, and improving skin texture.

A herbal face cleanser formulated with sandalwood aims to offer a gentle yet effective cleansing solution that removes dirt, excess oil, and impurities while nourishing the skin. Unlike synthetic cleansers, which may contain harsh chemicals leading to dryness and irritation, herbal formulations utilize plant-based ingredients that are safe and beneficial for all skin types, including sensitive and acne-prone skin.

The formulation of this sandalwood-based herbal cleanser combines natural extracts such as aloe vera, neem, turmeric, and rose water, enhancing its antibacterial, anti-inflammatory, and skin-rejuvenating effects. These ingredients work together to provide deep cleansing, hydration, and skin protection without disrupting the skin's natural barrier.

This study aims to develop, evaluate, and standardize a sandalwood-based herbal face cleanser that not only ensures effective skin cleansing but also promotes healthy, glowing skin. The research focuses on its efficacy, stability, pH balance, and overall benefits compared to synthetic alternatives, emphasizing the importance of herbal cosmetics in modern skincare.

Advantages:

1. Gentle & Natural Cleansing – Effectively removes dirt, excess oil, and impurities without stripping the skin's natural moisture.
2. Soothes & Calms the Skin – Sandalwood has anti-inflammatory properties that help reduce redness, irritation, and rashes, making it ideal for sensitive skin.
3. Anti-Acne & Antimicrobial Action – The antibacterial nature of sandalwood helps fight acne-causing bacteria, preventing breakouts and blemishes.
4. Hydrating & Nourishing – Unlike harsh chemical cleansers, this herbal cleanser maintains skin hydration, leaving it soft and supple.
5. Brightens the Skin – Regular use can enhance the skin's natural glow, reduce pigmentation, and promote an even skin tone.
6. Free from Harsh Chemicals – Contains no parabens, sulfates, or artificial additives, reducing the risk of allergies or long-term skin damage.
7. Anti-Aging Benefits – The antioxidants in sandalwood help fight free radicals, slowing down the signs of aging such as fine lines and wrinkles.
8. Suitable for All Skin Types – Works well for dry, oily, sensitive, and combination skin without causing irritation.
9. Environmentally Friendly – Made from biodegradable, plant-based ingredients, making it a sustainable skincare option.
10. Aromatherapeutic Effect – The natural fragrance of sandalwood has a calming and stress-relieving effect, enhancing the skincare experience.

Disadvantages:

1. Shorter Shelf Life – Herbal formulations lack synthetic preservatives, leading to a shorter shelf life compared to chemical-based cleansers.
2. Mild Cleansing Action – May not be as effective in removing heavy makeup, waterproof sunscreen, or deep-seated impurities as synthetic cleansers.
3. Potential for Allergic Reactions – Although natural, some herbal ingredients may still cause allergies or skin irritation in sensitive individuals.
4. Slow Visible Results – Unlike chemical-based products, herbal cleansers may take longer to show noticeable improvements in skin conditions.
5. Storage Concerns – Some formulations require special storage conditions, such as refrigeration, to prevent spoilage.
6. Variable Quality & Consistency – The efficacy of herbal cleansers depends on the source, purity, and processing of natural ingredients, which may vary.
7. Higher Cost – High-quality herbal products can be more expensive due to the use of pure, natural ingredients and labor-intensive production methods.
8. Limited Availability – Not all herbal cleansers are widely available in markets, and some may be difficult to find in certain regions.
9. Fragrance Sensitivity – While natural, some herbal scents (e.g., sandalwood, essential oils) might be strong for individuals sensitive to fragrances.
10. Risk of Contamination – Without proper preservatives, herbal cleansers are more prone to microbial contamination, affecting safety and efficacy.

Material and equipment:

1. Sandalwood:

When used in a herbal face cleanser, sandalwood enhances cleansing efficacy while providing nourishment and protection for the skin.

- Scientific name: *Santalum album*
- Synonym: Chandan
- Family: Santalaceae
- Chemical constituents: linalool, santal, tannins, resins, flavonoids

Uses:

1. Used in herbal face cleansers, soaps, creams, and lotions for its cleansing, anti-inflammatory, and moisturizing properties.
2. Helps in treating acne, blemishes, pigmentation, and dark spots.
3. Acts as a natural skin brightener, improving complexion and reducing tanning.



2. Aloe vera:

Aloe vera is a powerful natural ingredient that makes a face cleanser gentle yet effective, ensuring clean, hydrated, and healthy skin. Its cooling and soothing effects make it ideal for all skin types, including sensitive and acne-prone skin

- Scientific name :Aloe barbadensis miller
- Synonym:Aloe vulgaris Lam
- Family:Asphodelaceae
- Chemical constituet: vitamins, minerals, enzymes, amino acids, polysaccharides, and phenolic compounds.

Uses:

1. Deep Cleansing & Detoxification – Removes dirt, excess oil, and impurities from the skin without over-drying.
2. Natural Moisturizer – Hydrates the skin, preventing dryness and keeping it soft and smooth.
3. Soothes Irritated & Sensitive Skin – Reduces redness, inflammation, and itching, making it ideal for sensitive skin.
4. Fights Acne & Pimples – Its antibacterial and antimicrobial



3. Rose water:

Rose water is a gentle, natural, and effective ingredient in herbal face cleansers, making the skin clean, fresh, and radiant while providing hydration and protection.

- Scientific name:Rosa centifolia **uses:**
 1. Deep Cleansing & Detoxification – Removes dirt, excess oil, and makeup while refreshing the skin.
 2. Natural Toner – Tightens pores and balances sebum production, preventing breakouts.
 3. Hydrates & Moisturizes – Keeps the skin soft, supple, and prevents dryness.
 4. Glycerin :
 5. Glycerin is a powerful yet gentle ingredient in herbal face cleansers, ensuring deep hydration, nourishment, and protection while keeping the skin soft, smooth, and healthy.



4. Glycerin :

Glycerin is a powerful yet gentle ingredient in herbal face cleansers, ensuring deep

- Scientific name:Glycerol

Uses:

1. Deep Hydration & Moisture Retention – Attracts moisture to the skin, preventing dryness and dehydration.
2. Gentle & Non-Irritating – Suitable for all skin types, including sensitive and acne- prone skin.



5. Sodium benzoate:

Sodium benzoate is a gentle, effective, and widely accepted preservative in herbal face cleansers, ensuring safety, longevity, and product stability without compromising the natural benefits of herbal ingredients.

- Scientific name: sodium salt of benzoic acid Uses:

1. Prevents Microbial Contamination – Inhibits the growth of bacteria, fungi, and mold, ensuring product safety.
2. Extends Shelf Life – Keeps herbal face cleansers fresh and effective for a longer time.

**6. Sodium Lauryl sulfate:**

While Sodium Lauryl Sulfate (SLS) is an effective cleanser and foaming agent, it can be harsh on sensitive skin. Many herbal and natural face cleansers opt for gentler, plant-based alternatives to ensure effective cleansing without stripping moisture.

- Scientific name: Sodium dodecyl sulfate

Uses:

1. Powerful Cleansing Action – Breaks down oil, dirt, makeup, and impurities, providing a deep cleanse.
2. Creates a Rich Lather – Improves foaming, making the cleanser feel luxurious and easy to rinse off.

**Equipment:**

1. Weighing balance
2. Beaker

- 3. measuring cylinder
- 4. stirrer

Formulation Table 1:

Sr.No	Ingredients	Quantity (50ml)
1	Sandalwood powder	2 g
2	Aloe Vera Gel	10 ml
3	Rose Water	25 ml
4	Glycerin	5 ml
5	Sodium Benzoate	0.5 g
6	Sodium Lauryl Sulfate	1.5 g

Preparation Method:

- Step 1: Ingredient Selection & Preparation Ensure all ingredients are pure, natural, and free from contaminants. Finely sieve sandalwood powder and to remove lumps for a smooth texture.
- Step 2: Mixing Dry Ingredients In a clean dry bowl pour sandalwood powder.
- Step 3: Adding Liquid Ingredients Gradually add rose water while stirring continuously to create a smooth paste. Mix in aloe vera gel, glycerin, and to enhance hydration and nourishment.
- Step 4: Preservative Addition If preparing for longer shelf life, add sodium benzoate
- Step 5: Final Mixing & Packaging Mix everything thoroughly until a smooth, creamy consistency is achieved. Transfer the cleanser into sterilized glass or plastic bottles with an airtight lid.

Evaluation Tests:

Physical & Organoleptic Evaluation

- Appearance & Color – Should have a uniform texture and natural color. □ Odor – Should have a pleasant, characteristic fragrance (sandalwood, rose, etc.).
- Texture & Consistency – Should be smooth, non-gritty, and easy to apply.

pH Determination (Skin Compatibility Test):

Check ideal pH range: 4.5 – 6.5 (suitable for skin).

Spreadability Test:

Evaluates how well the cleanser spreads on the skin.

A small amount is applied to a glass slide, and spreadability is measured by the area it covers under slight pressure.

4. Foamability Test (For Liquid & Gel Cleansers):

A measured quantity is shaken in water to observe foam formation & stability. The foam should be stable for at least 2-3 minutes.

Washability Test:

Determines how easily the cleanser can be rinsed off with water. Should not leave residue or dryness on the skin.

Irritation & Sensitivity Test (Patch Test):

A small amount is applied to a patch of skin (behind the ear or wrist) and observed for 24- 48 hours.

No redness, itching, or irritation should occur.

7. Cleansing Efficiency Test

A small amount is applied to skin with oil/dirt and then rinsed off. Effectiveness is judged by removal of impurities without excessive dryness.

Result:

A herbal face cleanser with sandalwood is great for soothing, brightening, and cleansing the skin.



Conclusion:

A herbal face cleanser with sandalwood is an excellent natural skincare solution that effectively cleanses, nourishes, and rejuvenates the skin. Sandalwood's cooling and anti- inflammatory properties help soothe irritation, reduce acne, and brighten the complexion. Combined with natural ingredients like aloe vera, and rose water, this cleanser provides deep hydration and gentle cleansing without harsh chemicals

REFERENCES:

1. V.K. Redasani, K.J. Baid and Drx. Jyoti Yadav. FORMULATION AND EVALUATIONS OF HERBAL FACE CLEANSER DOI:10.20959/wjppr 20205-17230.

2. Zinnia. Ayurvedic Facial produt for Glowing Skin. Style Craze, Feb 2017 [cited 2017 Apr 24]. Available from: <http://www.stylecraze.com/articles/5-ayurvedic-face-packs-for-glowing-skin>.
3. Shivani Singh and Shashikant Maury. Formulation and Evaluation of Herbal Face cleancer skin. www.wjpr.net ISSN 22777-7105.
4. Chanchal D, Swarnlata S. Herbal formulations, and their evaluation. *Open Nat Prod J* 2009; 2: 71-6.
5. Mithal BM, Saha RN. *A Handbook of Cosmetics* 2nd edn. 2004.
6. Rieger MM. *Harry's Cosmeticology*. In: Chapter 23, Face, scrub and cleansers. 8th ed.vol I. New York: Chemical Publishing Co., Inc.;2009,p.471-483.
7. Indian Standard, Face Cleanser Specification, IS 15153:2002, August 2002 [Cited 2016 Aug 05].
8. Millikan, Larry E. *Cosmetology, Cosmetics*, Rieger MM. *Harry's Cosmeticology*. In : Chapter 23, Face, Body & Hair Masks &cleanser New York: Chemical Publishing Co., Inc, 2009; 8(1):471-483.
9. Nagre, SS Khan, JP Joshi, VA Nawale.[07/03, 8:49 pm]
10. Nemade CT, Baste N. Formulation and evaluation of a herbal facial cleanser *World J Pharm Res* 2014; 3(3): 4367-4371.
11. Himaja N, Ashok kumar A, Bhart kumar B. Preparation and Evaluation of Herbal Face cleansers. [07/03, 8:52 pm]
12. Sinha N. K. Beauty and Skin Benefits of Milk Powder: Milk Powder Home Made Facial cleanser Recipes, available <http://nutankumarsinha.expertscolumn.com/article/10-beauty-and-skin-benefits-milk-powder-home-made-facial-cleanser> 2017.