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Formulation of Herbal Face Wash for Facial Purification

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Abstract: *The herbal drug industry which is present in the India is Probably the oldest medical care system in the World . The history of the herbs in ancient India is so old that the ancient form of herbal healing has even Been mentioned in the Vedas, anancient religious Work of the Indians.[1] .*

Keywords: *herbal drug*

I. INTRODUCTION

The herbal drug industry which is present in the India is Probably the oldest medical care system in the World . The history of the herbs in ancient India is so old that the ancient form of herbal healing has even Been mentioned in the Vedas, anancient religious Work of the Indians.[1]

Herbal face wash is a natural skincare product made from plant-based ingredients, designed to gently cleanse the skin without the use of harsh chemicals. It combines the goodness of herbs, such as neem, aloe vera, turmeric, and tea tree oil, to remove dirt, excess oil, and impurities while nourishing and soothing the skin. Ideal for all skin types, herbal face washes offer a chemical-free alternative to conventional products, promoting healthier, clearer, and naturally glowing skin.[2]

Natural Ingredients: Herbal face washes use plant-based ingredients like neem, aloe vera, and turmeric, which are gentle on the skin and have natural healing properties. Allopathic face washes often contain synthetic chemicals that can be harsh or cause side effects. Fewer Side Effects: Herbal products are less likely to cause irritation, dryness, or allergic reactions, making them safer for sensitive skin.No Harsh Chemicals: Many allopathic face washes contain parabens, sulfates, or artificial fragrances, which can strip the skin of natural oils. Herbal face washes avoid these additives.Skin-Friendly:Herbal ingredients often have antibacterial, anti-inflammatory, and antioxidant properties that support healthy skin without disrupting its natural balance.Environmentally Friendly: Herbal products are usually biodegradable and eco-friendly, while chemical-based products may have a bigger environmental impact.

In recent years, there has been a growing demand for herbal cosmetic products due to increasing awareness of the harmful effects of synthetic chemicals on skin health. Herbal formulations are gaining popularity because they are considered safe, gentle, eco-friendly, and rich in bioactive compounds derived from natural sources like plants and herbs.[3]

A herbal face wash is a semi-liquid cosmetic formulation designed to cleanse the face by removing dirt, oil, dead skin cells, and other impurities. Unlike chemical-based products, herbal face washes incorporate plant-based ingredients known for their skin-benefiting properties such as antibacterial, anti-inflammatory, antioxidant, and moisturizing effects.

The primary aim of this study is to formulate and evaluate a herbal face wash using selected herbal extracts that are effective in facial purification. Herbs like Neem (Azadirachta indica), Tulsi (Ocimum sanctum), Aloe vera, and Turmeric (Curcuma longa) are well-known for their skincare properties and have been traditionally used in Ayurveda and natural medicine. These ingredients not only cleanse the skin but also help prevent acne, soothe irritation, and promote a healthy complexion.[4]

In today's world, the preference for herbal and natural skincare products has significantly increased due to growing concerns over the side effects of synthetic chemicals found in commercial cosmetics. Herbal products are derived from plant extracts and are believed to be safer, more biocompatible, and eco-friendly.[5]

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A herbal face wash is a semi-solid or liquid preparation formulated to cleanse the face by removing dirt, oil, dead skin cells, and environmental pollutants without stripping the skin of its natural moisture. Unlike conventional face washes, herbal face washes utilize plant-based ingredients that not only purify but also nourish and protect the skin.

The purpose of this study is to develop a herbal face wash using selected medicinal herbs known for their skin-purifying and therapeutic properties. Commonly used herbs such as Neem (Azadirachta indica), Tulsi (Ocimum sanctum), Aloe vera, and Turmeric (Curcuma longa) are chosen for their well-documented antimicrobial, anti-inflammatory, antioxidant, and wound-healing activities.

his study aims not only to provide a chemical-free alternative for skincare but also to support the use of traditional herbal knowledge in modern cosmetic formulations.

Table no.1 - Ingredients And It's Quality :

Sr no.	Ingredients	Quality
1	Turmeric	3.5 gm
2	Neem	3.5 gm
3	Tulsi	1 gm
4	Giloy Powder	4 gm
5	Carbopol 934	1 gm
6	Sodium Lauryl Sulphate	3 gm
7	Rose Oil	1 ml
8	Vitamin E Capsule	1 ml
9	Triethanolamine	3 ml
10	Distilled Water	25 ml
11	Methyl Paraben	4 ml

II. LITERATURE REVIEW

1. Patel et al. (2012) formulated a neem-based face wash that showed effective antibacterial activity against acne-causing bacteria such as Propionibacterium acnes and Staphylococcus aureus. The formulation also showed good stability and user satisfaction.

2. Kumar and Bhowmik (2013) formulated a polyherbal face wash using extracts of neem, tulsi, aloe vera, and turmeric. The study found that the combination of these herbs provided synergistic effects, offering cleansing, antimicrobial, and skin-soothing actions. The formulation had an ideal pH and was well-tolerated by users

3. Sharma et al. (2015) evaluated the use of aloe vera gel in cosmetic formulations and reported its excellent moisturizing, anti-inflammatory, and healing properties. Aloe vera is known to soothe sunburns and irritated skin, making it an ideal base for herbal face washes.

4. Rai et al. (2016), turmeric helps brighten the skin, reduce pigmentation, and prevent acne formation. Turmeric (Curcuma longa) has been extensively studied for its curcumin content, which possesses anti-inflammatory and antioxidant properties.

5. A study by Sharma et al. (2018) formulated a polyherbal facewash using neem, aloe vera and turmeric, and found it effective in reducing acne lesions and improving skin texture According to Singh and Gupta (2020), herbal facewash formulations showed better skin compatibility and fewer side effects compared to conventional facewashes

6. Patil et al. (2022) demonstrated that herbal facewashes maintained the skin's natural pH And had significant antimicrobial activity The use of herbal formulations in skincare has been widely explored in recent years due to the increasing awareness of the side effects caused by synthetic cosmetic ingredients. Herbal face washes, formulated using medicinal plant extracts, have gained popularity for their ability to cleanse the skin naturally while providing therapeutic benefits such as antibacterial, anti-inflammatory, and antioxidant actions

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Several studies have highlighted the effectiveness of Neem (Azadirachta indica) in treating acne and other skin infections due to its powerful antibacterial and antifungal properties. Neem is also known to help in controlling excess oil and soothing irritated skin

Tulsi (Ocimum sanctum) has been traditionally used in Ayurvedic medicine for its antimicrobial and purifying properties. It helps detoxify the skin, reduce acne, and prevent skin eruptions, making it a valuable ingredient in facial cleansers.

Aloe vera has been extensively studied for its hydrating, soothing, and wound-healing properties. It enhances skin elasticity, soothes inflammation, and provides a cooling effect, making it suitable for sensitive or acne-prone skin

Turmeric (Curcuma longa) is another well-researched herb that has strong anti-inflammatory antioxidant, and antibacterial properties. It helps in reducing blemishes, evening out skin tone, and providing a natural glow to the skin.,

Previous formulations of herbal face washes have focused on combining these extracts with appropriate bases and excipients to achieve desirable qualities such as good spreadability, adequate foaming, acceptable pH, and stability. Evaluations in such studies generally include physicochemical tests, microbial tests, and user acceptability trials to ensure the formulation is safe and effective for regular use.

Herbal cosmetics have been used for centuries in traditional systems of medicine such as Ayurveda, Siddha, and Unani. With increasing awareness of the harmful effects of synthetic chemicals, herbal formulations have become a preferred alternative in skincare due to herbal formulations have become a preferred alternative in skincare due to their natural origin, fewer side effects, and therapeutic benefits.

Sangeeta H. Sahasrabuddhe et al.,2024 According to the World Health Organization, 80 percent of people use natural medicines for any aspect of their primary health care, exposing them to lesser-known side effects and dangers associated with chemically synthesized pharmacological drugs. As a result, bioactive extracts of medicinal plants, as well as their herbal medicine formulations, are a viable alternative to chemically synthesized medicines . Indian medicinal plants are a promising field for treatment of several diseases. Ayurveda and Siddha practices originated in India and are still widely used among the Indian population. In addition, identification of Phyto-components of medicinal plants may be helpful for alleviate the infection. Hence, Indian medicinal plants can be considered as new option for their role to overcome viral transmission

Analgesic It is more acceptable to believe that natural remedies are safer with synthetic subjects with fewer side effects. The global market demand is increasing due to the fusion of herbs. Current work Herbal anti-acne is the development and evaluation of flammable extracts with facial spray containing leaf extract of Tulsi (Ocimum Sanctum),Hydroalcoholic extract of turmeric (curcuma longa), Although there are some specific local herbal formulas available on the market, we propose to make pure herbal formulations without using any artificial ingredient . The plants have been reported in the literature with microorganisms, anti oxidants and anti-inflammatory activity.Ayurvedic face wash was prepared from the extract of various ingredients such as Neem leaves, Turmeric rhizomes, Nutmeg seed, Liquorice root, Honey, Orange tincture, Lemon juice, Xanthan gum, Orange peel extract, Rosewater, Propyl paraben, Methyl paraben, Sodium laury sulfate. The prepared face wash was evaluated for various Physical parameters such as Washability, Colour, pH, Viscosity, Spreadability and Irritansy test.

AIM AND OBJECTIVES

Aim:

• To develop a natural, effective, and skin-friendly herbal facewash using plant-based ingredients that cleanse the skin, reduce acne, and maintain skin hydration without causing side effects.

• To formulate a herbal face wash using natural plant extracts with the objective of achieving effective facial cleansing, purification, and skin protection without the use of harmful synthetic chemicals.

Objectives:

• To identify and select herbal ingredients with proven skin benefits (e.g., neem, aloe vera, turmeric,tulsi).

• To formulate a facewash using natural extracts with minimal or no synthetic chemicals.

• To formulate the physicochemical properties (pH, texture, shelf life) of the herbal facewash.

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• To assess the antimicrobial and antioxidant properties of the formulation.
• To conduct skin compatibility and effectiveness tests through user trials.
• To ensure the final product is eco-friendly, safe, and suitable for regular use.

PLAN OF WORK

1. Procurement of raw material (crude drug).
2. Morphological screening of raw material .
3. Microscopical screening of crude drug .
4. Physicochemical screening

a) Moisture content
b) Foreign organic matter

5. Extraction of active constituents .
6. Phytochemical screening of various extract .
7. Formulation of semisolid dosage form (facewash)

MATERIAL AND EQUIPMENT

Material :

1 .Turmeric Rhizome:

Figure no.1 – Turmeric

• Synonym :-
Curcuma Longa , Indian Saffron.
• Family :-
Zingiberaceae
• Biological Source:-
Turmeric consist of dried , as well as fresh rhizomes of plant is known as curcuma longa linn.
• Description :-
Colour – Yellow
Obour – Aromatic
Taste – Bitter
• Chief chemical constituents :- Curcumin ,Curcuminoids

2. Neem :

Figure no.2 – Neem Leaves Powder

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• Synonym :-
Nim
• Biological Source:-
It consist of dried of leaves of Azidirachta Indika
Belongs to family Meliaceae
• Description :-
Colour – Green
Obour – Pungent
Taste – Bitter Chief chemical constituents :- Nimbinin, Nimbidin,Quercetin

3.Tulsi Leave Powder:

Figure no.3 – Tulsi Leaves Powder

• Synonym :-
Tulsi
• Biological Source:-
It mainly consist of dried leaves of Ocimum
Sanctum L
• Description :-
Colour – Green
Obour – Aromatic
Taste – Pungent
• Chief chemical constituents :-
Oleanolic acid,ursolic acid, rosmarinic acid

4. Giloy Powder:

Figure no.4 – Giloy powder

• Synonym :- Amorita
• Biological Source:-
It mainly consist of dried leaves of Tinospora Cordifolia
Brlongs to family menispermaceae.
• Description :-
Colour –Green
Obour –Aromatic

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Taste – Bitter

• Chief chemical constituents :-

Alkaloids , diterpenoid lactones , glycosides , Steroids.

5. Carbopol :

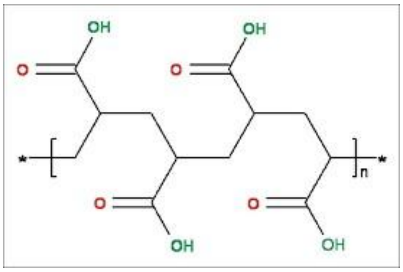

Figure no. 5 – Carbopol

z IUPAC Name :-

Poly (acrylic acid)

• Other names :-

PAA,PSSc, Acrysol

• Chemical Formula :-

(C3H402)n

• Molar mass :-

variable

6.Sodium Lauryl Sulphate:

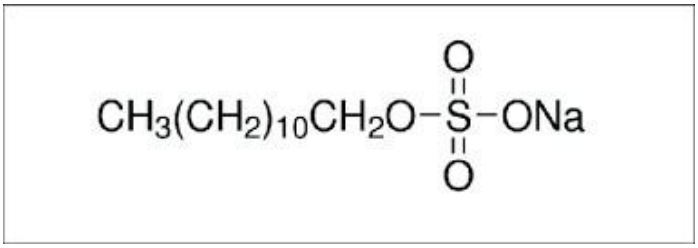

Figure no. 6 – Sodium Lauryl Sulphate:

• IUPAC Name :-

Sodium Lauryl Sulphate:

• Other names :-

Sodium Lauryl Sulphate

• Chemical Formula :- NaC12H25SO4

• Molar mass :-

288.372 g/mol

• Density:-

1.01g/cm3 Melting point:-

206 C (403 F; 479 k)

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7.Rose Oil :-

Figure no. 7 –Rose Oil :

• Synonym :- Rose oil
• Biological Source :-
Rose oil is obtained from the fresh petals of Rosa damascene (Damask rose) and other related species like Rosa centifolia.
• Description :-
Colour – Pale yellow to yellow Odour – Sweet, floral, and characteristic
Taste – Sweet and pleasant
• Chief Chemical Constituents :-
Citronellol, Geraniol, Nerol, Phenyl ethyl alcohol, and Eugenol

8. Vitamin E Capsule :-

Figure no. 8. Vitamin E Capsule

• Synonym :-
Vitamin E capsule
• Biological Source :-
Vitamin E is mainly derived from natural sources like wheat germ oil,sunflower oil, soybean oil, or synthetically prepared as dl-alpha- tocopherol.
• Description :-
Colour – Clear to pale yellow
Odour – Odourless or slightly characteristic
Taste – Bland or slightly oily
• Chief Chemical Constituents :- Tocopherols (mainly alpha-tocopherol) and Tocotrienols

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9. Triethanolamine :-

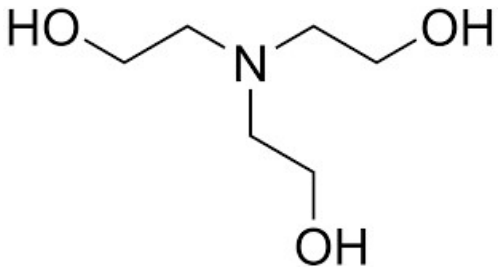

Figure no. 8. Triethanolamine

• IUPAC Name :-
2,2',2''-Nitrilotriethanol
• Other Names :-
Triethanolamine (TEA), Trolamine
• Chemical Formula :- $C_6H_{15}NO_3$
• Molar Mass :- 149.19 g/mol
• Density :- 1.124 g/cm³
• Melting Point :- 21.6 °C (70.9 °F; 294.8 K)

10. Distrilled water :-

Figure no. 10 : Distrilled water :-

• IUPAC Name :-
Oxidane (common name: Water)
• Other Names :-
Distilled Water, Purified Water
• Chemical Formula :- H_2O
• Molar Mass :-
18.015 g/mol
• Density :- 1.0 g/cm³ at 4°C
• Melting Point :- 0 °C (32 °F; 273.15 K)

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11 . Methyl Paraben:-

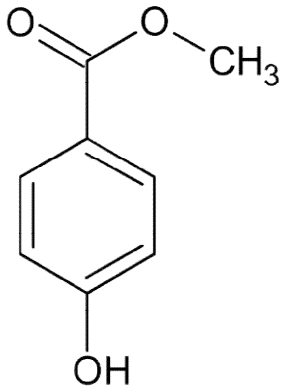

Figure no. 11 : Methyl Paraben

• IUPAC Name :-
Methyl 4-hydroxybenzoate
• Other Names :- Methylparaben
• Chemical Formula :-
$C_8H_8O_3$
• Molar Mass :- 152.15 g/mol
• Density :- 1.185 g/cm³
• Melting Point :- 125 °C (257 °F; 398 K)

Equipment

Sr no.	Equipment
1	mixing vesse
2	grinder
3	sieve
4	weighing scale
5	filling machine
6	storage containers

Apparatus
• Weighing Scale: Accurate digital scale is essential for precise measurements of ingredients, particularly powders and extracts.Measuring Cups & Spoons: For measuring liquid ingredients, particularly essential oils or extracts.
• Mixing:
Glass Beakers or Bowls: For mixing ingredients in different stages of the process.
• Mixing Spatula or Stirring Rod: For thoroughly blending the ingredients.
• Blender or Mixer (Optional): For creating emulsions or smoothing out thicker consistencies.
• Packaging:
• Sterilized Bottles or Jars: Containers to store the final product.
Labels: To clearly identify the product and its ingredients.
• Sieves or Strainers: For filtering out large particles or impurities from the face wash.
• Safety Gear:
• Gloves: To maintain hygiene and prevent skin irritation.
• Safety Glasses: To protect eyes from splashes or accidental contact with ingredients.

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Additional Equipment

• Heating Plate (Optional): For gentle heating of ingredients if required by a specific recipe.

• pH Meter (Optional): For checking the pH of the final product to ensure it is within the appropriate range for facial use.

Container And Storage Conditions

Store in well closed mouth bottle at room temperature.

Direction For Use

• To be applied externally .

• Apply gently on the skin with the help of finger.

• Moisten face, apply a small quantity of FACE wash & gently work up lather with circular motion. Wash off & pat dry.

Uses

• Hydrates and moisturizes

• Improves complexion

• Anti-ageing

• Treats sun damage and tan

• Reduces blacheads

• Treats acne and balances oil

• Exfoliates and eliminates dead skin

Formulation

Sr no.	Ingredients	Quality
1	Turmeric	3.5 gm
2	Neem	3.5 gm
3	Tulsi	1 gm
4	Giloy Powder	4 gm
5	Carbopol 934	1 gm
6	Sodium Lauryl Sulphate	3 gm
7	Rose Oil	1 ml
8	Vitamin E Capsule	1 ml
9	Triethanolamine	3 ml
10	Distilled Water	25 ml
11	Methyl Paraben	4 ml

EXPERIMENTAL WORK

Method of preparation:

A small amount of purified water was taken in a beaker as the base medium.

↓

Propylene glycol and Sodium Lauryl Sulphate, both acting as preservatives and surfactants, were added to the water and mixed thoroughly

↓

Carbopol was gradually added to the above solution while stirring continuously to avoid lump formation.

↓

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The mixture was stirred well until a gel-like dispersion was formed.

↓

The herbal extracts – including Turmeric ,Neem , Giloy, Rose oil, Tulsi extract , Vitamin E capsule and other selected medicinal plant extracts –were slowly added to the gel base and blended thoroughly to ensure uniform distribution.

↓

Triethanolamine was added to the mixture to adjust the pH and obtain the desired gel texture.

↓

Final Herbal Face Wash Gel ready

Formula :

Sr no.	Ingredients	Quantity given	Quantity taken	Uses
1	Turmeric	3.5 gm	3.5 gm	Antibacterial
2	Neem	3.5 gm	3.5 gm	Antiseptic
3	Tulsi	1 gm	1 gm	Purifier
4	Giloy Powder	4 gm	4 gm	Detoxifier
5	Carbopol 934	1 gm	1 gm	Gelling
6	Sodium Lauryl Sulphate	3 gm	3 gm	Cleansing
7	Rose Oil	1 ml	1 ml	Fragrance
8	Vitamin E Capsule	1 ml	1 ml	Antioxidant
9	Triethanolamine	3 ml	3 ml	pH-Adjuster
10	Distilled Water	25 ml	25 ml	Solvent
11	Methyl Paraben	4 ml	4 ml	Preservative

RESULT AND DISCUSSION

Results:

1. Successful extraction: The herbal extracts were successfully prepared using [extraction method].
2. Desired consistency: The face wash formulation had a suitable consistency and texture.
3. Homogeneous mixture: The herbal extracts were evenly distributed throughout the formulation.

Discussion:

The preparation of the herbal face wash was successful, with:

1. Effective extraction method: The chosen extraction method yielded a high-quality herbal extract.
2. Optimal mixing: The ingredients were well-mixed, ensuring a uniform product.
3. Suitable formulation: The prepared face wash had a desirable consistency and texture.

OUTCOMES

The prepared herbal face wash formulation meets the required standards for further evaluation, including:

1. Quality assessment: Evaluation of physical and chemical properties.
2. Stability testing: Assessment of shelf life and storage conditions.
3. Efficacy evaluation: Determination of the product's effectiveness.

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