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Review Article

A Comprehensive Insights into Face Wash: Formulation, Function, and Applications

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ABSTRACT

A face wash is a skincare product specifically formulated to cleanse the facial skin by removing impurities such as excess oil, dirt, dead skin cells, and makeup residues. Also referred to as a "cleanser," face washes are designed to clean the skin without causing excessive dryness. They are gentle in nature and perform several essential functions, keeping the skin clear, smooth, hydrated, and free from harmful microbes. By maintaining the moisture balance of the skin's outer layer (stratum corneum), face washes help preserve a fresh, vibrant, and youthful appearance. Many face wash formulations claim to offer multiple skincare benefits, including deep cleansing, hydration, acne prevention, wrinkle reduction, and improvement in skin tone. These effects are achieved by carefully selecting and balancing active ingredients and excipients. To ensure product safety and effectiveness, formulations are typically evaluated for key parameters such as pH, skin irritability, viscosity, foaming ability, texture, and stability under accelerated conditions. This review also explores the use of essential oils and herbal ingredients commonly incorporated into face wash formulations. Natural components such as lavender, peppermint, turmeric, black cumin seed, jasmine, and cinnamon oils are known for their therapeutic properties, including antimicrobial, anti-inflammatory, and antioxidant effects. These botanical ingredients make face washes suitable for all skin types, offering a mild yet effective approach to facial skincare.

Keywords: Skin care, Face Wash, Herbal ingredients, Acne.

Introduction

Hygiene plays a critical role in maintaining healthy skin. Daily exposure to outdoor environments—such as sunlight, dust, bacteria, and pollution—can cause various skin issues, including dullness, irritation, and loss of skin elasticity. As the skin is the outermost barrier of the human body, it is constantly subjected to environmental stressors such as UV radiation, fluctuating temperatures, and varying humidity levels. Prolonged exposure to polluted and dusty conditions can compromise the skin's natural balance, leading to clogged pores, irritation, and premature aging. Healthy facial skin is a universal desire, and achieving it requires consistent skincare [1]. One of the most

fundamental steps in any skincare routine is cleansing the face to remove accumulated impurities. This can be done using cleansing milk, creams, solutions, or facial washes. Washing the face with plain water is not sufficient, as water alone cannot effectively remove oil-based dirt or pollutants.

Therefore, using a facial cleanser or face wash becomes essential for thoroughly cleaning the skin. Face washes are specifically formulated cleansing agents designed to clean the face without stripping it of natural moisture [2]. They help remove makeup residues, dead skin cells, excess sebum, dirt, and

environmental pollutants. In doing so, face washes help unclog pores and reduce the risk of common skin concerns such as acne and inflammation. Unlike regular soaps that may dry out or irritate delicate facial skin, face washes are gentler and are developed to preserve the skin's natural moisture barrier. They clean and hydrate the outer skin layer, leaving the skin feeling refreshed, smooth, and youthful [3].

In recent years, essential oils have gained popularity in the skincare industry for their multifunctional properties. These natural ingredients exhibit antimicrobial, antioxidant, anti-acne, anti-inflammatory, anti-aging, and skin-brightening effects. Many cosmetic formulations now incorporate essential oils to enhance skin protection against environmental stress, maintain a youthful appearance, and support overall skin health [4].

A proper skincare routine may include a combination of a facial cleanser, toner, and moisturizer to maintain skin cleanliness and balance. Cleansing not only removes impurities but also prepares the skin to absorb other skincare products more effectively. Acne is a common skin concern, and studies show it tends to affect females more than males, likely due to hormonal fluctuations during puberty.

The severity and occurrence of acne can vary based on numerous internal and external factors, highlighting the importance of regular and appropriate skin care practices [5].

Functional Properties and Ingredients

Face washes are multifunctional skincare products formulated to offer a variety of benefits, including cleansing, anti-acne, anti-wrinkle, moisturizing, and skin-brightening effects. One of the key goals of skin-brightening face washes is to reduce melanin synthesis in the skin.

This is typically achieved by inhibiting the activity of melanocytes—the cells responsible for melanin production. Ingredients commonly used in such formulations include propanediol, Evodia rutaecarpa fruit extract, arbutin, kojic acid, and vitamin C and its derivatives, all of which have demonstrated low toxicity to melanocytes and effective melanin suppression [6].

These ingredients work through multiple mechanisms:

- Restoring skin's natural balance
- Preventing pore blockage by normalizing sebum production
- Eliminating *Propionibacterium acnes* bacteria
- Providing anti-inflammatory effects
- Influencing hormonal activity

Given the adverse side effects associated with synthetic chemicals, the cosmetic industry is increasingly turning to natural alternatives.

Herbs like marigold, licorice, and orange peel are not only rich in antioxidants and free radical scavengers but also possess antimicrobial and anti-inflammatory properties, making them effective against acne and other skin disorders.

Common pharmaceutical treatments for acne include benzoyl peroxide, topical and oral antibiotics, retinoids, hormonal therapies, salicylic acid, alpha hydroxy acids, azelaic acid, nicotinamide, and keratolytic soaps. However, herbal face washes offer a milder, more sustainable solution [7].

Advantages of Using Face Wash

Face washes provide numerous skincare benefits:

1. Remove dead skin cells and promote the regeneration of new cells
2. Maintain skin freshness and health
3. Impart a radiant, glowing appearance
4. Prevent pore blockage by exfoliating excess oil and dead skin
5. Delay the onset of wrinkles by promoting regular skin turnover
6. Keep skin hydrated, soft, and youthful
7. Improve blood circulation, enhancing skin vitality
8. Combat early signs of aging
9. Enhance the absorption and effectiveness of other skincare products



Figure 1: Benefits of using face wash.

Table 1: Benefits of using face wash and its description.

Benefit	Description
Skin Cleansing	Removes dirt, oil, and impurities from the skin.
Hydration	Maintains skin moisture and prevents dryness.
Acne Prevention	Helps in reducing acne by clearing pores.
Skin Whitening	Brightens complexion using plant-based extracts.
Anti-Inflammation	Calms redness and reduces irritation.
Herbal Benefits	Uses natural ingredients for healthy skin care.
Anti-Aging	Improves skin texture and reduces signs of aging.

Possible Disadvantages

Although generally safe, some users may experience [8]:

- Itching
- Skin rashes
- A warm or tingling sensation upon application

Common Uses of Face Wash

- Remove makeup residues
- Daily cleansing of facial skin
- Anti-aging treatment support
- Skin renewal and exfoliation

- Unclog pores and maintain skin hygiene

Properties of Effective Face Wash

An ideal face wash should [9]:

1. Promote exfoliation to boost blood circulation and skin regeneration
2. Manage excess sebum in oily skin
3. Include anti-inflammatory and antioxidant herbs for soothing effects
4. Treat acne and pimples without stripping the skin of essential nutrients
5. Have a stable formulation with an appealing appearance

6. Spread easily and feel non-greasy on the skin
7. Leave behind a light emollient layer without residue build-up
8. Open pores rather than rely on absorption alone

Types of Face Wash

Cream-Based Face Wash

Rich and moisturizing, these face washes are ideal for dry skin. They often contain botanical oils and offer thorough cleansing without stripping away natural skin oils.

Gel-Based Face Wash

Gel face washes, made with flower and essential oil extracts, are typically water-based and recommended for sensitive or irritated skin. They help balance the skin's pH and provide deep cleansing by unclogging pores without excessive dryness.

Liquid-Based Face Wash

These can be monophasic (completely dissolved active ingredients) or biphasic (suspended ingredients). They are versatile and tailored to the solubility and function of the active agents used in the formulation.

Powdered Face Wash

Less common but effective, these are activated upon contact with water and are often used for exfoliating and brightening purposes.

Evaluation Criteria for Face Wash Formulations

To ensure the efficacy and safety of a face wash, various parameters are assessed [10]:

- Organoleptic Properties: Appearance, color, and floral odor
- Consistency: Should exhibit a uniform, liquid consistency
- Greasiness: Should not leave a greasy residue
- pH: Ideal range is 5.5–5.7, close to the natural skin pH
- Washability: Should rinse off easily with water
- Homogeneity: No lumps or particles; uniform texture

- Grittiness: Smooth texture without granules
- Extrudability: Easy to dispense from the container
- Skin Irritability Test: Should not cause redness, inflammation, or irritation
- Foamability: Should produce stable foam when shaken in water
- Viscosity: Measured using a viscometer to ensure optimal thickness
- Spreadability: The ease with which the product spreads across the skin, which affects absorption and comfort

Spreadability formula: $\text{Spreadability} = M \times L/T$

M = Weight applied on upper slide

L = Length of slide

T = Time taken in seconds

Packaging and Labelling

Packaging not only protects the product but also serves to inform and attract consumers. A well-packaged face wash [11]:

- Prevents contamination and spoilage
- Facilitates transport and storage
- Communicates brand identity and usage instructions
- Enhances convenience and user experience
- Supports sustainability (through reuse, recycling)

Containers

Foaming face washes are often stored in white PET (polyethylene terephthalate) bottles with specialized foaming pumps. These pumps mix air with the product to produce a gentle foam without using gas propellants [11].

Conclusion

Face washes serve a crucial role in skincare by cleansing the skin, improving texture, and preventing common problems like acne, dullness, and premature aging. Herbal and natural formulations offer the added benefit of being gentler and more biocompatible. Regular use helps to restore skin vitality, maintain pH

balance, and promote a youthful glow. A properly formulated face wash meets all safety and performance standards, making it suitable for daily use across all age groups. The research and testing of face wash products have demonstrated their importance in maintaining healthy, nourished, and radiant skin, especially when used as part of a comprehensive skincare routine.

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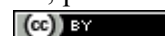
Conflict of Interest

None declared.

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