2025 Volume: 01 Issue: 07 www.ijrpa.com ISSN 2456-9995 Review Article

International Journal Research Publication Analysis

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A REVIEW ON HERBAL ALOE VERA FACE WASH

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Article Received: 12 November 2025
Article Revised: 02 December 2025
Published on: 22 December 2025

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DOI: https://doi-doi.org/101555/ijrpa.7401

ABSTRACT:

Herbal Aloe Vera Face Wash is a natural cleansing lotion designed to purify the skin from environmental pollutants, excess sebum, and microbial contaminants. Skin damage mainly results from the accumulation of dirt, oil, and dead skin cells, whereas long-term exposure to pollutants can lead to more serious conditions like acne, premature aging, and dermatitis. Ideally, a face wash should protect against both bacterial infection and dehydration. This study aimed to create a topical face wash formulation using fixed oils combined with selected medicinal plants. Consistent use of herbal face wash can lower the risk of acne vulgaris, comedones, and skin dullness. Face wash, also referred to as a facial cleanser, functions by emulsifying surface oils and lifting impurities to safeguard the skin. With the rising rates of skin sensitivity and the damaging effects of urban pollution, the demand for effective natural cleansing agents has increased. These agents have been shown to help alleviate symptoms associated with environmental skin damage. An effective face wash should be safe, nonirritating, non-toxic, stable, and provide complete removal of impurities without stripping natural oils. The developed face wash lotion includes skin-friendly components like aloe vera, butterfly pea flower, coconut oil, rose water, and vitamin E. Testing criteria included pH, spreadability, foaming ability, and skin feel. The prepared face wash exhibited a strong cleansing rating, excellent uniformity, consistency, and appearance, with no indications of phase separation, making it safe and non-irritating for skin application.

KEYWORDS: Herbal Cleanser, Clitoria ternatea ingredients, Aloe Barbadensis, Sebum Control, and Natural Face Wash.

INTRODUCTION:

Face washes are substances that remove dirt, oil, and urban pollutants by emulsifying them with water. They help prevent harmful effects such as acne breakouts, which can cause skin scarring, inflammation, and other problems associated with clogged pores. The active ingredients in face washes are classified into synthetic and herbal based on their mode of action and chemical structure. Synthetic elements often strip the skin of natural oils, while herbal elements protect the skin by nourishing it while cleansing. These products are widely widely available in supermarkets and pharmacies, and in the United States, they can even be recommended by dermatologists for specific skin conditions. In Italy, they are sold in paramedical stores, and in Australia, they are offered by organizations focused on skin health and cancer control.

Vitamin E is a fat-soluble antioxidant with protective properties, which is important for human health. Vitamin E obtained from food (RRR tocopherol) is different from vitamin E found in supplements (synthetic all-rac-alpha-tocopherol). Since plants can synthesize vitamin E, it should be consumed in limited quantities, mainly from external sources. Coconut oil, which is primarily obtained from the dried seeds of coconut trees (known as copra), contains large amounts of lauric acid. This oil has been used historically as a moisturizer and to treat dry skin due to its rich, smooth texture. Formulations incorporating cleansing coconut oil can reduce inorganic pollutant exposure, thereby meeting the demand for more natural products, while research has also shown that humans exhibit remarkable skin barrier protection levels when using natural oils.

The skin is the largest organ of the human body and acts as a primary barrier against the external environment. However, this barrier is constantly bombarded by particulate matter, smoke, UV radiation, and bacteria. A proper cleansing routine is the foundation of dermatology. While water alone can remove some dust, it is ineffective against lipid-soluble debris like sebum and makeup. Therefore, the formulation of a herbal face wash that utilizes the concept of "oil dissolves oil" (using coconut oil) alongside soothing agents (Aloe Vera) provides a superior alternative to harsh synthetic soaps.

SELECTION OF SUNSCREEN BASED ON SKIN TYPE:

Selecting the correct face wash is critical for maintaining skin homeostasis.

The choice depends largely on the sebaceous activity and sensitivity of the user's skin.

1. Oily/Acne-Prone Skin Seek out "oil-free" (or non-comedogenic oil) and "non-comedogenic" options that won't block pores.

- Opt for gel-based or water-based formulas with a matte finish.
- Ingredients like salicylic acid (naturally found in some plants) or citrus extracts are beneficial.
- The goal is to remove excess sebum without triggering a rebound effect where the skin produces even more oil.

2. Dry Skin

- Choose cream-based or lotion face washes.
- Look for products enriched with moisturizing agents like hyaluronic acid, aloe vera, or glycerine.
- Refrain from using alcohol-laden items or high-sulfate formulas that may exacerbate dryness.
- A face wash for dry skin should leave a thin emollient film behind to prevent Transepidermal Water Loss (TEWL).

3. Combination Skin

- Pick lightweight, hydrating formulations that won't obstruct pores.
- Find gel or fluid-based face washes that provide moisture to dry areas (cheeks) without a greasy feel on the T-zone (forehead, nose, chin).
- Balancing ingredients like Rose Water are ideal for this skin type.

4. Sensitive Skin

- Choose products that are fragrance-free and hypoallergenic.
- Herbal cleansers with Aloe Vera or Chamomile are generally safer, as they are less likely to irritate.
- Steer clear of ingredients such as sodium lauryl sulfate (SLS) and artificial parabens, which can often irritate the skin.
- The pH of the product should closely match the skin's natural pH of 5.5.

CLASSIFICATION OF SUNSCREEN:

Face wash is classified as cosmetic or therapeutic depending on its intended use. Based on their physical form and formulation base, topical face washes are further divided into two classes:

Organic (Herbal) Face Wash

By penetrating the pores and dissolving impurities using natural surfactants

(saponins), organic face wash works. It is gentle and ideal for everyday use, making it easy to incorporate skincare ingredients. Chemicals based on natural carbon chains make up the active ingredients in organic face wash. It contains non-synthetic active ingredients derived from plants like Aloe barbadensis and Clitoria ternatea.

Inorganic (Synthetic) Face Wash

Because these products physically scrub or chemically strip oils using harsh alkalis, they act as a strong barrier remover. They are often considered "broad spectrum" cleansers because they remove everything, including the good bacteria. Inorganic face wash is also known as synthetic detergent or "syndet" bars. While effective at degreasing, they often disrupt the acid mantle of the skin.

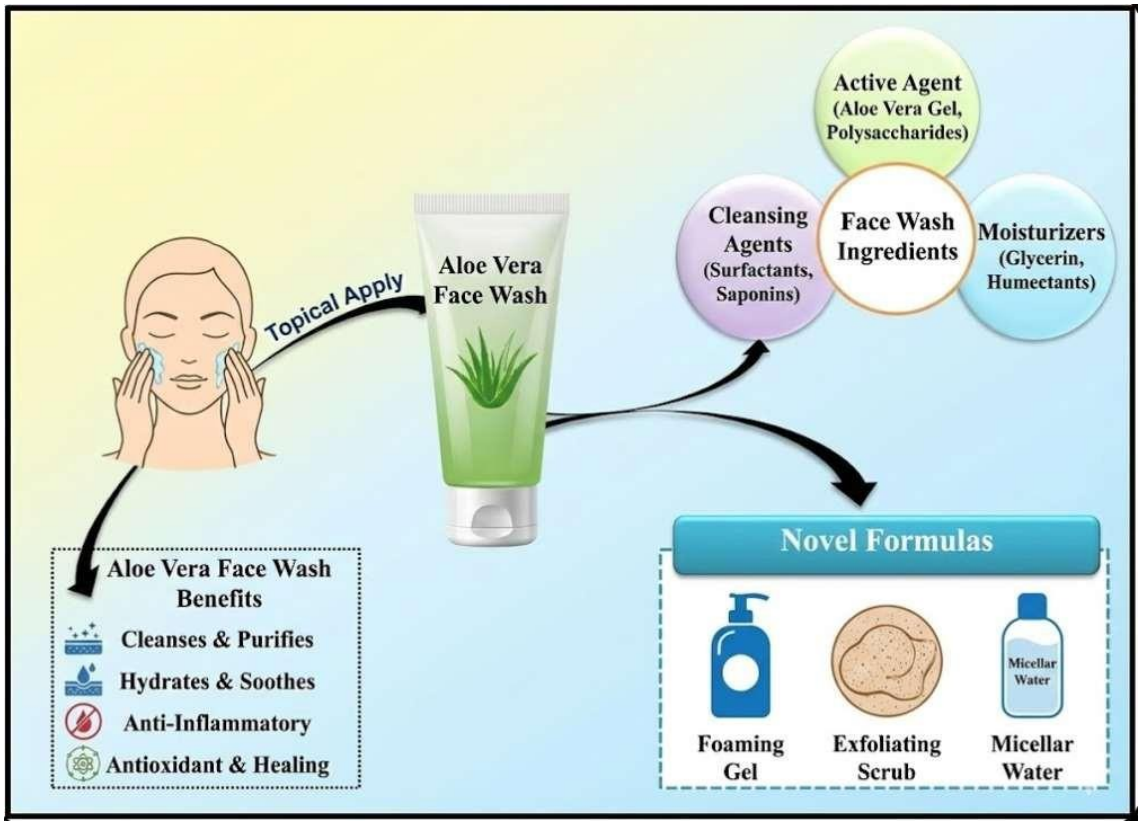
MACHANISM OF PHOTO PROTECTION:

Herbal Face Wash has been shown to prevent and minimize the harmful effects of bacterial accumulation and oxidation, thereby increasing the skin's tolerance to environmental exposure. Two mechanisms are employed by them:

1. Emulsification and Solubilization: The primary mechanism involves the interaction of hydrophobic (water-hating) and hydrophilic (water-loving) components. The natural oils (like Coconut oil) in the formulation bind with the sebum and dirt on the skin's surface. When water is added, the natural surfactants (saponins from herbs) allow the oil and

water to mix, creating an emulsion. This emulsion lifts the dirt away from the skin so it can be rinsed off.

2. Antioxidant Protection: Organic face wash reduces the negative effects of oxidative stress caused by pollution. Ingredients like Vitamin E and Butterfly Pea flower absorb free radicals and turn them into harmless byproducts, preventing them from damaging the collagen matrix of the dermis. This prevents premature aging while cleansing.



Photooxidative and Pollution Damage: Damage caused by pollution and UV radiation enters the dermal capillaries through the epidermis and dermis. This results in the depletion of enzymatic and non-enzymatic antioxidants in the stratum corneum, oxidation of pre-existing lipids, and immediate and long-lasting inflammation (redness).

It has been shown that herbal face wash increases the skin's tolerance to these stressors. By removing the particulate matter that generates free radicals, the face wash stops the cycle of damage. In vitro testing of cleansing efficacy often involves measuring the removal of a standard soil (artificial sebum) from a substrate. In this example, both the actual removal of dirt and the hydration of the skin as a result of exposure to the face wash are measured. The

hydration should be measured using a corneometer, and the results typically show that herbal formulations retain moisture better than synthetic ones.

Material and Method:

1.Butterfly Pea Flower:

Clitoria ternatea is the scientific name of the butterfly pea flower, which has a beautiful blue color. It promises potential health benefits. It may discolor your mixed drinks. It is also useful for cosmetics lovers. It is said to be rich in antioxidants, which probably gives it its vivid color.

Additionally, Sturdieck suggests that they have health-promoting properties. [6]

Fig 1) Butterfly Pea Flower

Synonyms:

Blue Pea Flower, Asian Pigeanwing ,Cordofan Pea Biological Source: Clitoria Ternatea L Family: Fabaceae (The family is Leguminosae.) Chemical constituents:

Proteins, Peptides, Polyphenols, Alkaloids, Saponins, Anthocynins, and Flavonoids. Uses: Butterfly pea flowers are used in herbal teas, cosmetics, natural food coloring, and traditional medicine due to their high antioxidant content. Because of its high antioxidant content, pea flowers (Clitoria ternatea) may have sun-protective properties. Particularly flavonoids like quercetin and kaempferol, as well as anthocyanins (ternatins).

2. Aloe Vera:

The Aloe vera plant has been known and used for centuries for its health, beauty, medicinal and skin care properties. The name Aloe vera derives from the Arabic word “Alloeh” meaning “shining bitter substance,” while “vera” in Latin means “true.” 2000 years ago, the Greek scientists regarded Aloe vera as the universal panacea. The Egyptians called Aloe “the plant of immortality.[7]

Fig .2 Aloe Vera

Synonyms:

Aloe, Mussbar,Aloe Forex, Nomens, Aloe indica Royle nudum, Aloe Perfoliatavae.

Biological Source:

It consists of dried and fresh mucilage of Aloe Vera Family:

Asphodelaceae Liliaceae

Chemical Constituents :

Polysaccharides (like glucomannan and acemannan), vitamins (A, C, and E), enzymes, amino acids, fatty acids, and minerals.

Uses:

Rich in Minerals and Vitamins

Rich in fatty and amino acids

Aloe Vera is an effective adaptogen

Aloe aids in digestion

Aids in detoxification

Alkalizes the body

Encourages the heart

Strengthens the immune system

Excellent for the skin

Antibacterial disinfectant Antiviral, antifungal, and antiseptic

Aloe Aids in Inflammation Reduction

3.Coconut Oil

Coconut oil prevents the skin from aging too quickly while maintaining its smoothness and softness. Use coconut oil to moisturize your skin and get rid of dead skin cells. Dry skin, including that of those with eczema, is moisturized by coconut oil. Its antibacterial, antifungal, and antiviral qualities aid in wound healing by preventing free radicals from harming the skin. Because of its anti-inflammatory qualities, coconut oil can help with both dry and oily skin conditions by lowering skin inflammation.[8]

Fig.3 Coconut oil

Synonyms :

Coconut oil,

Coconut butter,

Copra oil.

Biological Source:

The dried solid portion of the endosperm of the coconut, Cocos nucifera L., a member of the Palmae family, is used to make coconut oil.

Family:

Palm (Arecaceae

Chemical constituents:

Coconut oil is used as concrete oil in temperate regions below 23°C. Coconut butter is a white or pearl white, creamy substance with a bland taste and either no smell or a strange coconut smell. It melts between 23 and 26 degrees Celsius. At 60°C,it dissolves in two volumes of alcohol, but it is very soluble in carbon disulfide, ether, and chloroform. When exposed to air, the oil quickly turns rancid. Among the common vegetable oils, coconut oil has the lowest iodine value (7–10) and the highest saponification value (250–264).

Uses:

In many parts of the world, coconut oil is used in food products. Fractionated coconut oil is referred to as “Thin vegetable oil” in the European pharmacopoeia. Certain medications can be administered orally using it as a nonaqueous medium. Drugs that are unstable in aqueous media are prepared as an oral suspension using fractionated coconut oil.

Conditions like cystic fibrosis, enteritis, and steatorrhea that are linked to poor fat absorption are treated with diets based on medium chain triglycerides, including preparations made from coconut oil. Patients following a diet based on medium chain triglycerides have reported experiencing diarrhea and abdominal pain.

4. Rose Water:

A rose water is either the flower it produces or a woody perennial flowering plant belonging to the Rosaceae family. There are tens of thousands of cultivars and more than three hundred species. They make up a group of plants with stems that are frequently covered in sharp prickles and can be upright shrubs, climbing, or trailing. The majority of species are indigenous to Asia, with smaller populations found in Europe, North America, and Northwest Africa. Rose plants come in a variety of sizes, from tiny, tiny roses to seven-meter-tall climbers. [9]

Fig 4) Rose water

Synonyms:

Rose hydrosol or gulab jal Biological

Source:

Rose water's biological source is the petals of various species of rose, most commonly the Damask rose (Rosa\ damascena)

Chemical Constituents:

The volatiles consisted mainly of 2-phenylethanol (69.7–81.6%), linalool (1.5– 3.3%), citronellol (1.8–7.2%), nerol (0.2–4.2%), geraniol (0.9–7.0%) along with rose oxides and all other characteristic minor rose compounds. Key Word Index:

Rosa damascena. Rosaceae.

Uses:

- Skincare: Hydrates and balances skin pH.
- Aromatherapy: Relieves stress and anxiety.
- Makeup: Natural toner or setting spray.
- Haircare: Adds shine, reduces frizz.
- Culinary: Flavoring in desserts and drinks.
- Medicinal: Anti-inflammatory and antiseptic properties.
- Relaxation: Calming face mist or bath additive.

5.Vitamin E Capsule:

Tocopherols and tocotrienols, which are fat-soluble antioxidants that shield cells from damage caused by free radicals, are abundant in vitamin E capsules, a popular dietary supplement. Although they are used for a variety of medical and cosmetic reasons, it is usually advised to get this nutrient from a balanced diet rather than taking large doses of supplements. [10]

Fig 5) VitaminE Capsule

Synonyms:

Multivitamin, vitamin pill, vitamin supplement, and nutrient capsule

Biological Source:

Vitamin capsules have a biological source from plants, animals, or microorganisms

Chemical constituents:

Plant-based oils (wheat germ, sunflower, safflower), nuts and seeds (almonds, peanuts, sunflower seeds), and certain fruits (avocado, kiwi, mango Uses:

Moisturizing skin: Hydrates and softens skin, reducing fine lines and wrinkles.

Fighting free radicals: Protects skin from damage caused by pollution, UV rays, and stress.

.Wound healing: Promotes collagen production and speeds up healing.

Skin issues: Helps with acne, eczema, and psoriasis.

Anti-aging: Boosts skin elasticity and reduces age spots.

Method and Preparation:

The preparation of the Herbal Aloe Vera Face Wash involves a meticulous blending process to ensure stability and efficacy.

Ingredients Required:

- One tablespoon of fresh or dried butterfly pea flowers.
- Two tablespoons of fresh or store-bought aloe vera gel.
- One tablespoon of coconut oil.
- One tablespoon of rose water.
- One (or half a teaspoon) liquid vitamin E oil capsule.

Approach (Step-by-Step Formulation):

Step 1: Make the extract from butterfly pea flowers To extract the vivid purple color and antioxidants from dried butterfly pea flowers, steep them in warm water for ten to fifteen minutes. To preserve the liquid, strain out the flowers. To extract juice from fresh flowers, just crush or blend them. About two tablespoons of butterfly pea extract should be available. This extract serves as the aqueous phase of the emulsion and provides the active antioxidant components.

Step 2: Combine Coconut Oil and Aloe Vera Combine the coconut oil and aloe vera gel in a sanitized mixing bowl. Mix them until a creamy, smooth consistency is achieved. This step is crucial for creating the emulsion base. Aloe vera calms and heals the skin, while coconut oil helps hydrate and retains moisture. The saponins in the Aloe Vera will begin to interact with the Coconut Oil to create a mild cleansing action.

Step 3: Incorporate Rose Water To the mixture, add rose water gradually while stirring. Rose water adds a pleasant scent, revitalizes the skin, and aids in pH balance. It adjusts the viscosity of the face wash, making it easier to apply and spread over the face.

Step 4: Add Vitamin E Squeeze the oil into the mixture after puncturing the vitamin E capsule. Because of its antioxidant qualities, vitamin E is excellent for restoring and revitalizing the skin. It also acts as a natural preservative, preventing the oils in the face wash from going rancid.

Step 5: Add the extract from butterfly peas Lastly, incorporate the extract from butterfly pea flowers into the mixture. Anthocyanins, which are antioxidants that support healthy skin and fight free radicals, are abundant in butterfly pea flowers. This will turn the mixture a pleasing blue/purple color.

Step 6: Combine Well and Package Stir everything until the mixture is uniform and smooth. Transfer the lotion into a clean, air-tight container or pump bottle. The final product should be stored in a cool place away from direct sunlight.

ADVANTAGES OF HERBAL SUNSCREEN:-

- Easily available: Ingredients are found in most kitchens or local herbal stores.
- Do not provoke allergy: Hypoallergenic nature makes it suitable for sensitive skin.
- Cheap in cost: significantly more affordable than high-end dermatological brands.
- No side effect: Free from harsh sulfates and parabens.
- Renewable resources: Plant-based ingredients are sustainable.
- Be natural: 100% organic composition.
- Be stable: Good shelf life when stored correctly.
- Easy to manufacture: Can be made at home without complex machinery.
- Botanical ingredients are easily available.
- Lasts longer: A small amount is sufficient for effective cleansing.

DISADVANTAGES OF HERBAL SUNSCREEN:-

- Taste/Color: They are difficult to hide taste and color (natural ingredients vary batch to batch).
- Manufacturing: Manufacturing process is time consuming and complicated compared to mass-produced synthetics.
- Slower Effect: Herbal drugs have slow effect as compare to allopathic dosage forms; it also requires long term therapy to see significant reduction in acne or wrinkles.

- Stability: Natural emulsions may separate over time if not shaken before use.

Benefits of sunscreen

1. Reduce risk of skin infection: Removes bacteria that cause acne.
2. Protect against pollution: Removes particulate matter.
3. Avoid inflammation and redness: Soothing ingredients calm the skin.
4. Avoid blotchy skin and hyperpigmentation: Evens out skin tone.
5. Stop DNA damage: Antioxidants prevent cellular damage.
6. Prevent the early onset of wrinkles and fine lines: Keeps skin hydrated and elastic.
7. Lower skin cancer risk: By removing carcinogens from the skin surface.
8. Shields from harmful environmental rays: Antioxidant layer provides protection.
9. Maintain the brightness of your natural complexion: Removes dead skin cells.
10. Maintain the look and texture of your skin: Softens rough patches.
11. Delays premature signs of aging.
12. Reflects toxins: Creates a barrier against dirt.
13. Works immediately when applied on the skin: Instant feeling of freshness.

CONCLUSION:

Thus, the current study's findings indicate that the formulated herbal face wash has the energy to shield against environmental pollutants and bacteria, indicating cleansing exertion as well as the phrasings generated. Excerpts can be tailored to different skin types by incorporating different concentrations of Aloe Vera and Coconut Oil. Separately based on the cleansing value.

Crack-mending butterfly pea flower, potent antioxidant quercetin, skin-defensive resveratrol, moisturizing, and cooling rose water are all combined in current research to create an effective face wash product. In-depth research on the safety, effectiveness, and toxicity of specific skin defenders is advised in order to establish the product in request without any supporting evidence. The formulation was found to be stable, effective, and cosmetically acceptable, offering a viable natural alternative to synthetic cleansers.

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