

## FORMULATION AND EVALUATION OF HERBAL FACEWASH: A RESEARCH

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## ABSTRACT

Due to the perception that they are safer and have fewer adverse effects, natural therapies are more widely accepted. For many years, herbal medicines have been used for societal well-being not only in Asian nations but also throughout the world. The formulation and assessment of the vitamin E and herbal apple cider vinegar are the topics of this work. According to reports in contemporary science, these plants have antibacterial, antioxidant, anti-inflammatory, and anti-diabetic properties. A range of formulation batches, denoted as F1 through F3, were created by varying the quantity of material in different concentrations. The prepared formulations were assessed for a number of factors, and batch F2 and F3 was determined to be the best formulation overall for every metric.

**KEYWORDS:** herbal face wash, Apple cider vinegar, *Tocopherol*, Acne vulgaris.

## INTRODUCTION

Throughout history, the utilization of plants, their parts, and isolated phytochemicals as remedies for various health ailments has stood the test of time. These natural healing aids, known as herbal products, have played a significant role in traditional medicine. Interestingly, a staggering 25% of globally prescribed drugs are derived from plants, showcasing their immense therapeutic potential. According to the WHO's essential medicine list, approximately 11% of the listed drugs are exclusively of plant origin, comprising 121 active compounds. The skin, being one of the largest organs in the human body, carries immense importance. Not only does it provide physical protection, but it also acts as a vital defense mechanism against diseases. It serves as a barrier that shields our bodies from harmful microorganisms. However, certain health issues can affect the skin, such as acne. Acne primarily manifests on facial skin due to multiple factors, including excess oil production, hormonal imbalances, and various environmental factors.

To combat aging and prevent acne, maintaining proper facial hygiene is crucial. The first step in this skincare regimen involves facial cleansing. Facial soap, being a surfactant, possesses properties that help reduce surface tension and interfacial tension. This face wash is capable of saponification, dispersibility, emulsification, and cleaning. Its unique cleansing abilities enable it to remove dust, dirt, and excess oil from the face, thereby preventing acne initiation.

The skin constituting materials such as amino acids, lipids, and carbohydrates, signifies an individual's health. Nourishing the skin with a balanced diet becomes crucial for maintaining its clarity, radiance, and overall health. Even in ancient times, women displayed great awareness of their beauty, seeking natural remedies to enhance their appearance. To this day, people, especially in rural and hilly regions, continue to embrace the power of nature-derived cosmetics, such as neem, aloe vera, Tulsi, orange rose, among others. These herbal cosmetics serve to purify and beautify the skin without causing any harmful side effects.

## Understanding Acne Vulgaris

Acne vulgaris, a prevalent skin disorder affecting the pilosebaceous unit, affects almost everyone at some point in their lives. While it primarily emerges during adolescence, a considerable number of adults aged between 20-30 years also suffer from this condition. Acne can be categorized into several types, including comedonal, popular, pustular, cystic, and nodular acne. Comedonal acne, which is noninflammatory, can be further divided into two subtypes: whiteheads and blackheads. Whiteheads present as raised bumps with a fresh or white appearance, while blackheads are open pores containing dark skin roughage consisting of melanin, sebum, and follicular cells. Additionally, papules are red, solid, elevated lesions usually measuring less than 5mm in diameter, while pustules are defined as skin elevations containing pus. Lastly, cysts and nodules are solid, elevated lesions that extend deeper into the dermal and subcutaneous tissue. Cysts typically measure less than 5mm in diameter, while nodules exceed 5mm.

Acne vulgaris, the most prevalent form of acne, has a multifactorial pathogenesis. While various factors play a role, genetics is a major underlying cause. The development of acne occurs due to the interplay of four main factors.

1. **Follicular Epidermal Hyperproliferation:** This process involves the excessive growth of skin cells within the hair follicles, leading to blockages.
2. **Excessive Sebum Production:** An overproduction of sebum, the natural oil that lubricates the skin, can contribute to the development of acne.
3. **Propionibacterium acnes:** This type of bacteria can be found on the skin and, when present in high numbers, can contribute to inflammation and acne formation.
4. **Inflammation:** Inflammatory processes within the pilosebaceous follicles contribute to the redness, swelling, and discomfort associated with acne.

Acne, the common skin condition, can have long-lasting physical and psychosocial effects. Regardless of its severity, acne is often associated with depression and anxiety, which may persist even after receiving treatment. In some cases, acne can result in permanent scarring, challenging to correct. It is essential to understand the broader implications of acne and the significance of its prevention and treatment. It is a complex chronic condition that affects the pilosebaceous follicle. It manifests in various forms, such as comedones, papules, cysts, pustules, and abscesses, which can ultimately lead to scarring. Treating acne effectively requires identifying the appropriate treatment for each individual patient.

With the rich history of herbal remedies, the significance of skincare, and the understanding of acne, we gain valuable insights into natural and effective practices for maintaining healthy, radiant skin. Embracing both traditional wisdom and modern advancements, we can unlock the true potential of nature to enhance our well-being.

When it comes to preventing aging and acne, the first step is simple yet essential: facial cleansing using a high-quality facial soap. Facial soap, being a type of surfactant, possesses remarkable properties that can effectively reduce surface tension and interfacial tension. With its saponification, dispersibility, emulsification, and cleaning properties, facial soap becomes a reliable tool to cleanse the face thoroughly. By eliminating dust, dirt, and excess oil from the face, this soap works wonders in preventing the onset of acne.

#### **The Gentle Effect of Face Wash**

Face wash, also commonly referred to as a "cleanser," is a product that takes facial cleansing to the next level. Unlike traditional soap, face wash is specifically designed to cleanse the face without causing dryness. It is equally beneficial for all skin types, making it a versatile choice for anyone seeking a healthy and radiant

complexion. By removing dirt, oil, and impurities, face wash not only cleanses the skin but also provides essential moisture, particularly for those with dry skin. Whether it's dirt, oil, or pollution, both face washes and cleansers work effectively to rid your face of these unwanted elements. However, while a cleanser targets oil-soluble impurities, a face wash ensures a more gentle and thorough cleanse for the delicate facial skin. Ordinary soaps may cause the facial skin to lose moisture, which can lead to dryness and other issues. This is where a face wash comes into play. Acting as a mild cleanser, a face wash diligently performs the vital task of keeping the skin clean, smooth, fresh, and germ-free by moisturizing the outermost layer of the skin without causing any harshness or irritation. This gentle approach helps the skin maintain its youthful and energetic appearance. The benefits of a face wash go beyond mere cleansing; they include imparting cleansing, anti-wrinkle, anti-acne, moisturizing, and skin-brightening effects.

#### **Skin Whitening and Its Agents**

In the pursuit of flawless skin, skin whitening agents have gained popularity. These agents target the production and metabolism of melanin, the pigment responsible for skin color, by inhibiting its production in melanocytes. Propanediol, vitamin C, and its derivatives are examples of the compounds used in whitening cosmetics due to their low toxicity to melanocytes.

#### **Types of Face Wash**

Typically, a face wash can be suitable for all skin types. However, advancements in skincare have led to the development of different face washes specifically formulated to cater to various skin conditions. Let's explore the different types available in the market.

1. Oily Skin Face Wash
2. Dry Skin Face Wash
3. Normal Skin Face Wash

#### **Oily Skin Face Wash: Addressing Sebum Production**

Oily skin, characterized by oversized sebaceous glands producing excessive sebum, often poses a cosmetic challenge. To tackle this issue, a unique formulation of face wash is designed to provide a solution. By ensuring appropriate hydration, barrier maintenance, desquamation, and plasticity through the natural moisturizing factor (NMF), this face wash effectively addresses the concerns of greasy skin. It is crucial to strike a balance between thorough cleansing and maintaining hydration, as over-cleansing can strip away the essential NMF, leaving the skin dehydrated and malnourished.

#### **Dry Skin Face Wash: Restoring Moisture to Your Skin**

Dry skin, a common problem that tends to worsen with age, can cause discomfort and affect overall quality of life. Symptoms such as itching, burning, and tightness are often experienced by individuals with dry skin. The

affected areas, predominantly on the extremities and the face, exhibit roughness, increased skin markings, and a scaly appearance. The primary cause of dry skin is a decrease in water content within the stratum corneum. To combat dryness effectively, a specifically formulated face wash aims to restore moisture and alleviate these symptoms. By replenishing the skin's hydration levels, this face wash addresses the issue of dryness, ensuring a softer and healthier complexion.

### **Normal Skin Face Wash: Maintaining the Perfect Balance**

For those fortunate enough to have normal skin, maintaining its pH balance and oil secretion is key. A face wash designed for normal skin ensures the equilibrium of natural processes, allowing the skin to thrive in its healthy state.

### **The Advantages Of Acne Treatment Or Use Of Face Wash**

Acne treatment goes beyond simply addressing the visible symptoms. It offers numerous benefits that promote overall skin health.

- **Hydration:** Effectively treating acne involves keeping the skin hydrated, which contributes to its health and vitality.
- **Anti-Aging Effects:** By implementing the right treatment, it is possible to slow down the signs of premature aging, ensuring a youthful appearance.
- **Addressing Acne:** Tailored treatment options effectively target acne, helping to alleviate current breakouts and prevent future ones.
- **Improved Blood Circulation:** Certain acne treatments stimulate blood circulation, enhancing overall skin health and promoting a vibrant complexion.
- **Multifunctionality:** The right treatment can address multiple skin issues simultaneously, offering a comprehensive solution for various concerns.

### **Understanding The Drawbacks**

While proper acne treatment can lead to positive outcomes, it is essential to be aware of potential drawbacks.

- **Sensitivity Concerns:** Some face wash products may cause allergic reactions in individuals with sensitive skin. It is important to consider this aspect when choosing a treatment option.
- **Skin Reactions:** Certain treatments may lead to temporary skin reactions, such as peeling, itching, or redness. These typically subside with time but should still be taken into account.
- **Dryness and Breakouts:** In some cases, acne treatment can result in dryness, potentially leading to breakouts or even infections. It's crucial to find a balance and monitor skin's response.

To maximize the effectiveness of acne treatments, it is valuable to consider additional properties they may offer.

1. **Anti-inflammatory Effects:** A treatment with anti-inflammatory properties can help reduce redness, swelling, and discomfort associated with acne.
2. **Anti-fungal Benefits:** In some instances, fungal infections may contribute to or exacerbate acne. Employing treatments with anti-fungal effects can address this underlying issue.
3. **Skin Moisturization:** Ensuring the skin is adequately moisturized is crucial for maintaining its health and protecting it from drying out. This can be achieved through suitable treatment options.

By approaching acne treatment with a comprehensive understanding of its causes and the unique needs of each individual, we can provide tailored solutions that promote clear and healthy skin. Remember, it's essential to seek professional guidance and monitor your skin's response for optimal results.

### **Enhancing Treatment with Beneficial Properties**

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### **Needs**

1. Face washes are designed to remove impurities, germs, dirt and makeup that can irritate the skin.
2. Face washes can hydrate the skin, it is necessary to moisturize the skin cells and improve the skin's ability to absorb nutrients.
3. When it comes to washing your face, generally you have two options a soap or a facewash both will clean your face but there are difference in the way they do it.
4. For the people having acne prone skin it is necessary to use appropriate face wash to clean the oil and dirt of the skin.
5. The soap and other make up products are hard chemicals use in the making yet the facial skin is too delicate the face wash of suitable pH is use.
6. Dermatologist recommended to use the face wash twice a day to reduced pigmentations.

7. Some anti- acne facewashes are help to ride the pimples and dark spots.
8. Stimulates blood circulation over all the surface of face.
9. Deals with multiple skin related issues.
10. Slows down signs of premature aging's

**OBJECTIVES**

1. Increase skin complex.
2. Clear and radiant skin.
3. Using a face wash is essential, as it cleanses your skin and improves skin health while keeping it away from skin ailments.

4. Not washing the face can cause your pores to become clogged, resulting in the development of serious acne.
5. Removes the dirt and grime from the skin surface.
6. Assists in getting rid of chemicals from makeup and other cosmetics products.
7. It sets a good foundation for other skincare products to work better.
8. When you apply heavy makeup, use an oil based cleanser to clean aways the makeup and rinse it with water. Then use a face wash to clear up the residues.
9. Facewash remove dirt's, grime, and dead skin cells and improve the new skin cells.
10. Face wash can gently nourish the skin while washing off dead skin cells.

**Drug Profile**

Table no. 1: of drug profile.

Sr.No.	Herbal material	Use
01	Apple cider vinegar	ACV is used in salad dressings, marinades, vinaigrettes, food preservatives, and chutneys, among other things.
02	Vitamin E	E has been considered an anti-inflammatory agent in the skin, as several studies have supported its prevention of inflammatory damage after UV exposure
03	Glycerin	It can increase skin hydration, relieve dryness, and refresh the skin's surface

**Apple cider vinegar**

Botanical name is *Malus pumila*

Family is *Pomoideae*

Fermentation is the process by which apple cider vinegar is created. The procedure is divided into two phases.

First, the apples are crushed, and yeast is added to accelerate the fermentation process so that the sugar may be converted into alcohol within a few weeks. The alcohol is then broken down by natural microorganisms into acetic acid, which gives vinegar its sour flavor and odor. Some attribute ACV's health advantages to its mother. It's also considered to contain trace levels of probiotics (healthy bacteria) that are beneficial to intestinal health. However, studies has not proved that the mother provides any specific health advantage.

**Vitamin E**

*Tocopherol* is the chemical term for vitamin E. Vitamin E is a fat-soluble vitamin that comes in numerous forms, but the human body exclusively uses alpha-tocopherol. Its primary function is to act as an antioxidant, scavenging loose electrons known as "free radicals" that can cause cell harm. It also improves immunological function and prevents blood clots from developing in the arteries of the heart. Antioxidant vitamins, such as vitamin E, first came to public notice in the 1980s, when scientists realized that free radical damage was implicated in the early stages of artery-clogging atherosclerosis, and that it might also contribute to cancer, eyesight loss, and a variety of other chronic

illnesses. Vitamin E may both protect cells from free radical damage and inhibit free radical formation in certain settings. However, contradicting research.

**METHODOLOGY**

**Procedure**

1. Extraction of natural ingredients
2. A little quantity of water was added with preservative like, sodium lauryl sulfate and dissolve properly.
3. To the above solution add stearic acid slowly and stirred until a semi gel like dispersion obtained.
4. While preparing the solution add glycerin it will thick the solution.
5. Boiling the solution at continuously stirred and add surfactants (30 min).
6. After the solution is like gel add colorant and other natural extracted products.
7. Pack it in a air tight container.

**Evaluation Parameters**

Table no. 2: evaluation parameter.

Sr.	Evaluation parameters	Observation
01	Colour	Redish white
02	Odour	Pungent
03	Consistency	Thick
04	pH	6-7
05	Washability	Washable
06	Foamability	Foam appear



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