

## Herbal Anti-Acne Face Wash: A Review

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### ABSTRACT

Acne vulgaris is a common chronic inflammatory skin disorder affecting approximately 80-90% of adolescent and many adults worldwide. It is characterized by the formation of comedones, papules, pustules, nodules, and cysts, primarily on the face, chest, and back. Conventional anti-acne treatments such as antibiotics, retinoids, and benzoyl peroxide are effective but may produce adverse effects including skin irritation, dryness, and antibiotic resistance. Herbal cosmetics have emerged as a promising alternative due to their safety, efficacy, and minimal side effects. Herbal anti-acne face washes contain plant-derived ingredients possessing anti-microbial, anti-inflammatory, antioxidant, and wound healing properties. This review discusses the pathophysiology of acne, commonly used herbal ingredients, formulation aspects, evaluation parameters, advantages, limitations and future prospects of herbal anti-acne face washes.

**Keywords:** Acne vulgaris, Herbal cosmetics, Neem, Alove-vera, Turmeric, Tea tree oil, face wash.

### INTRODUCTION

The skin is the largest organ of the human body and acts as a protective barrier against environmental hazards. Acne vulgaris is one of the most prevalent dermatological disorder, especially among adolescents and young adults. The condition develops due to excessive sebum production, follicular hyperkeratinization, bacterial colonization, and inflammation.

In recent years there has been growing interest in herbal cosmetic products because of consumer preferences for natural ingredients. Herbal anti-acne face washes are formulated using medicinal plants that possess anti-bacterial, anti-inflammatory, antioxidant and skin-soothing properties. These formulations provide effective acne management while minimizing adverse effects associated with synthetic chemicals.

### 2. OBJECTIVE

1. To understand the causes and pathophysiology of acne vulgaris.

2. To review medicinal plants used in anti-acne face wash formulations.
3. To highlight the advantages and limitations of herbal cosmetics.
4. To discuss formulation methods and evaluation parameters.
5. To identify future prospects for herbal anti-acne products

### 3. PATHOPHYSIOLOGY OF ACNE

#### 3.1 Increased sebum production

Androgen hormones stimulate sebaceous glands, leading to excessive oil secretion.

#### 3.2 Follicular hyperkeratinization

Dead skin cells accumulate within hair follicles, causing blockage, and formation of comedones.

#### 3.3 Bacterial colonization

Cutibacterial acnes proliferates within blocked follicles and contributes to inflammation.

**Relevant conflicts of interest/financial disclosures:** The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

### 3.4 Inflammatory Response

Bacterial growth triggers immune responses resulting in redness, swelling, and pustule formation

## 4. HERBAL INGREDIENTS USED IN ANTI-ACNE FACE WASH

### 4.1 Neem

**Biological name -** *Azadirachta indica*

**Family -** *Meliaceae*

#### Properties

Antibacterial, Anti- inflammatory

Antifungal, Antioxidant

#### Role in Acne treatment:

Neem inhibits acne- causing Microorganisms and reduces inflammation.

### 4.2 Turmeric

**Biological name -** *curcuma longa*

**Family -** *zingiberaceae*

**Active constituent:** curcumin

#### Properties

Anti- inflammatory

Antioxidant

Anti- microbial

#### Role in Acne treatment:

Reduces redness, swelling, and post acne pigmentation.

### 4.3 Aloe vera

**Biological name -** *Aloevera*

**Family -** *Asphodelaceae*

#### Properties

Moisturizing

Wound healing

Anti- inflammatory

#### Role in Acne treatment

Soothes irritated skin and accelerates healing.

### 4.4 Tea tree oil

**Biological name -** *Melaleuca alternifolia*

#### Properties

Broad spectrum antimicrobial activity

Anti-inflammatory effect

#### Role in Acne treatment:

Reduces bacterial growth and acne lesions.

### 4.5 Tulsi

**Biological name -** *Ocimum sanctum*

**Family -** *Lamiaceae*

#### Properties

Antibacterial

Antioxidant

Anti-inflammatory

#### Role in Acne treatment:

Control bacterial infection and improves skin health.

## 5. FORMULATION OF ANTI- ACNE FACE WASH

Ingredients	Function
Neem extract	Antibacterial agent
Termeric extract	Anti- inflammatory agent
Aloe Vera gel	Moisturizer
Tea tree oil	Antimicrobial agents
Carbapol 940	Geling agent
Glycerin	Humectant
Purified water	Vehicle

## Method of Preparation

1. Disperse Carbopol 940 in purified water with continuous stirring.
2. Add glycerin and mix thoroughly.
3. Incorporate neem extract, turmeric extract, and aloe vera gel into the base.
4. Add tea tree oil slowly with constant stirring.
5. Adjust the pH to 5.5–6.5 using triethanolamine.
6. Make up the final volume with purified water.
7. Transfer the prepared face wash into suitable containers.

## 6. EVALUATION PARAMETERS

### 6.1 Physical Appearance

The formulation is evaluated for color, odor, consistency, and homogeneity.

### 6.2 pH Determination

The pH should be within the skin-friendly range (5.5–6.5).

### 6.3 Viscosity

Measured using a viscometer to ensure appropriate consistency.

### 6.4 Foamability

Determines the cleansing efficiency and consumer acceptability.

### 6.5 Spreadability

Assesses ease of application on the skin.

### 6.6 Stability Study

The formulation is stored under different temperature conditions to evaluate physical and chemical stability.

### 6.7 Skin Irritation Test

Performed to ensure the safety of the formulation.

## 7. ADVANTAGES OF HERBAL ANTI- ACNE FACE WASH

1. Contains natural and biodegradable ingredients.
2. Lower risk of skin irritation and adverse effects.
3. Possesses antimicrobial and anti-inflammatory properties.
4. Suitable for long-term use.
5. Environmentally friendly and consumer preferred.

## 8. LIMITATIONS

1. Variability in herbal raw materials.
2. Limited shelf life compared to synthetic products.
3. Possible microbial contamination if preservatives are inadequate.
4. Lack of standardization in some herbal formulations.

## 9. FUTURE PROSPECTS

The demand for herbal cosmetics is increasing globally. Advances in phytochemical research, nanotechnology, and standardized herbal extracts can improve the efficacy and stability of herbal anti-acne face washes. Future studies should focus on clinical evaluation, quality control, and large-scale commercialization of herbal formulations.

## CONCLUSION

Herbal anti-acne face washes represent a promising alternative to conventional acne treatments. Medicinal plants such as neem, turmeric, aloe vera, tea tree oil, and tulsi possess significant antimicrobial, anti-inflammatory, antioxidant, and wound-healing properties that help manage acne effectively. These formulations provide safer and more sustainable skincare options with fewer side effects. Continued research and standardization will further enhance their therapeutic potential and consumer acceptance.

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**HOW TO CITE:** Ankita B. Chatte\*, Rupali K. Bagwale, Pornima P. Zende, Piyusha S. Landge, Rupali R. Bendgude, Herbal Anti-Acne Face Wash: A Review, *Int. J. Sci. R. Tech.*, 2026, 3 (6), 1234-1237. <https://doi.org/10.5281/zenodo.20796345>