



# HEARB USE IN THE TREATMENT OF ACNE

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## Abstract

Acne is produced when hair follicles in the skin get clogged and inflamed with germs. Acne is most common in teenagers and young adults. Two types of bacteria that are known to induce acne pus are Propionibacterium acne and Staphylococcus epidermis. The present study aims to address this etiologic component of acne vulgaris by developing and evaluating a herbal cream. The present study aim to address this etiologic component of acne vulgaris by developing and evaluating a herbal cream. The ingredients in the current formulation are: Tulsi, aloe vera gel, coconut oil, neem oil, tea tree oil, bees wax, glycerine,etc. Use the aqueous phase to create the herbal cream.

**Keywords:** Acne cream, Tulsi, Neem, Bees wax, Tea oil.

## Introduction

Acne is a widespread skin ailment that primarily affects teenagers and adults. It is simply defined by the two: Inflammatory (papules, pustules and nodules) and the non-inflammatory (comedones, open And closed) lesions[1]. Propionibacterium acnes and Staphylococcus epidermidis are the Common pus-forming bacteria responsible for the development of various forms of acne vulgaris[2].

An extremely troubling problem for teenagers throughout adolescence is acne vulgaris. Global statistics show that over 85% of people will experience this skin condition between the ages of 12 and 25; nearly 8% of adults will experience it Between the ages of 23 and 34; and only 3% of adults will get acne vulgaris between the ages of 35 and 44[3].

## Types of acne:

- Nodule

- Pustule
- Blackhead
- Whitehead
- Papule

#### Causes of acne:

- Genetic
- Hormone
- Menstruation
- Bacteria

Market research indicates that the fastest-growing industry in India is herbal cosmetics. Indians employed most of the medical plants that have been found to have therapeutic characteristics as cosmetic remedies, but in order to be as effective as possible, the plants should be produced in dosage form. Herbal goods, sometimes known as cosmetics, are created by combining one or more herbal ingredients with a few different types of approved cosmetic chemicals. Products intended solely for cosmetic purposes are referred to as “herbal cosmetics.” The lack of negative effects in herbal treatments makes them highly sought after. Herbs’ natural ingredients have no negative effects; on the contrary, they improve it by offering beneficial minerals and vitamins that are necessary. Many therapeutic plants are frequently used for the treatment of skin conditions, all the while displaying antibacterial properties.

The Greek word “kosmesticos” which originally denoted any substance used to improve or enhance appearance, is where the word “cosmetic” originated[5]. The cream’s composition is seen as an emulsion of water and oil. Its key advantage is that it has an extended effect at the application site, where it is administered to the skin’s epidermis.[6]

#### Mechanism of Action:

Acne is a complicated skin disorder that is caused by-

##### 1.Increased Sebum Production-

**Mechanism-** The skin’s sebaceous glands, which generate sebum (skin oil), react to hormonal changes, especially during adolescence. Androgens, such as testosterone, stimulate the sebaceous glands, which results in an excess of sebum production. Clogged pores can be caused by excess sebum.[18]

##### 2.Hyperkeratinization of Follicular Epithelium-

**Mechanism –** The follicular epithelium, which borders hair follicles, forms comedones (clogged pores) as a result of aberrant differentiation. The follicle accumulates dead skin cells as a result of the increased keratinocyte production, which causes hyperkeratinization[19].

### **3. Propionibacterium acnes bacterial colonization-**

**Mechanism-** The skin naturally harbors the bacterium \*Propionibacterium Acnes\*, which is currently referred to as \*Cutibacterium acnes\* is found on the skin naturally. When pores are clogged, the bacteria can multiply and cause inflammation. The lipases produced by this microbe convert sebum into free fatty acids, which can irritate skin and cause inflammation. [20]

### **4. Inflammation-**

**Mechanism-** When \*C. Acnes\* is present in clogged pores, the immune system is activated, starting an inflammatory cascade. Redness, swelling, and the development of inflammatory acne lesions including papules, pustules, and cysts are the results of this recruitment of neutrophils, macrophages, and other inflammatory mediators. [21]

### **5. Reaction of the Immune System-**

**Mechanism-** Toll-like receptors (TLRs) on immunological and skin cells are activated as part of the immune response to \*C. Acnes\*. Pro-inflammatory cytokines are produced as a result, which adds to the typical acne lesions include redness and edema. [22]

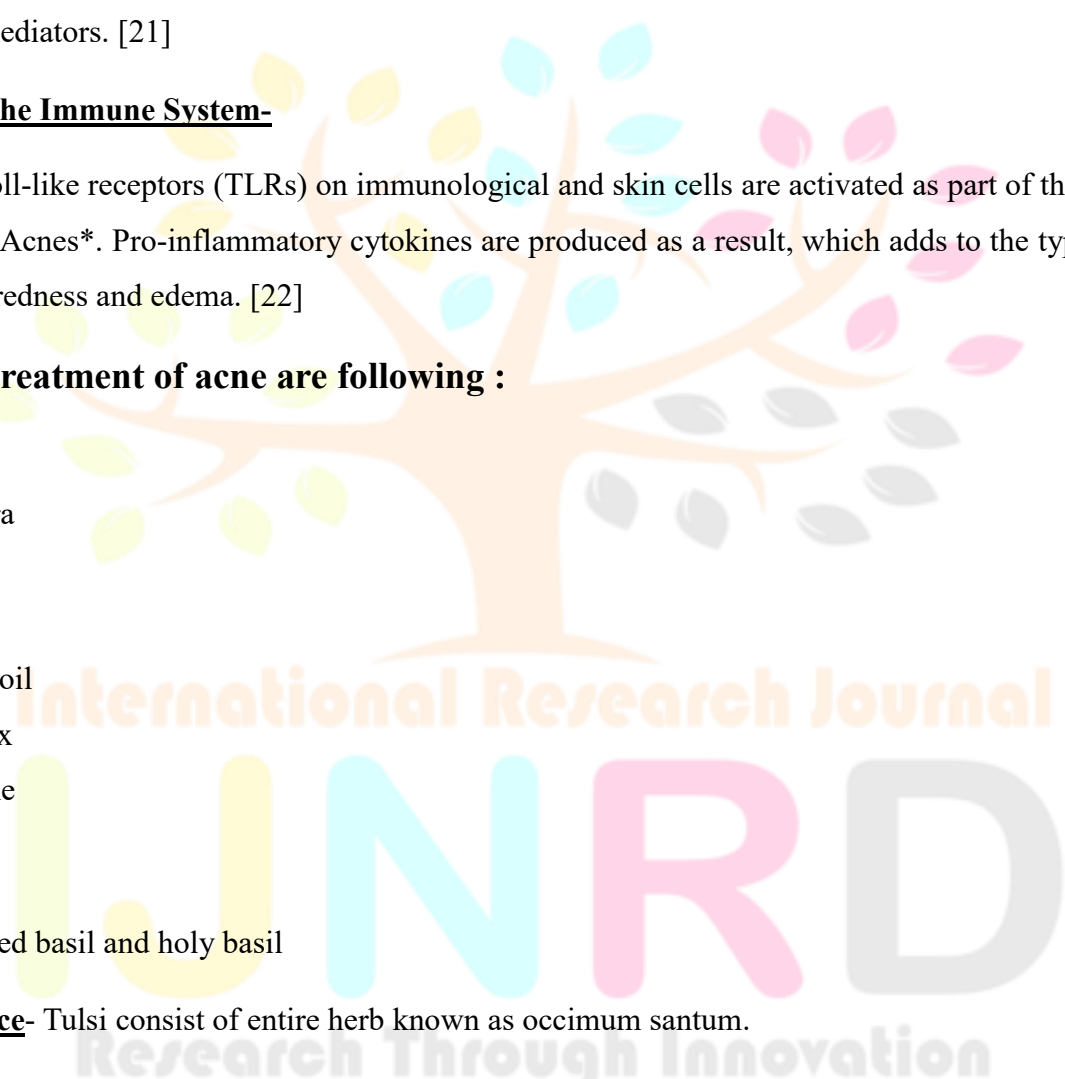
### **Herb use in treatment of acne are following :**

1. Tulsi
2. Aloe vera
3. Neem
4. Coconut
5. Tea tree oil
6. Bees wax
7. Glycerine

#### **1. Tulsi-**

**Synonym-** Sacred basil and holy basil

**Biological source-** Tulsi consist of entire herb known as *occimum santum*.



**Family-** Labiate**Fig.1: Tulsi****Chemical Constituents-**

One of the distinctive features of Tulsi leaves is the bright yellow volatile oil that adds to their pleasant scent. Usually, the oil concentration is between 0.1% and 0.9%. About 70% of the material is made up of eugenol, 3% is carvacrol, and 20% is Eugenol-methyl ether. Furthermore, it contains cIn Hinduism, is considered a deity and has a sacred shrine. Tulsi, botanically known as *Ocimum sanctum*, or Holy Basil, is a member of the Labiatae family. Owing to its many medicinal properties, it has made a substantial contribution to science from ancient times to the present. Popular natural remedy for a variety of ailments, including as wounds, bronchitis, liver problems, stomach problems, skin diseases, various poisonings, and psychological stress disorders, is tulsi. Grown for its volatile oil, which is also used in traditional Indian medicine and religious rituals. One of the main ingredients in a well-known herbal tea that is widely utilized in Ayurveda is tulsi[9].

**Advantages of tulsi leaves powder -**

- Fights acne
- Helps well in ageing of skin.
- Helps treating eczema.
- Good for skin healing.
- Source of vitamin K
- Greatly beneficial for skin
- Prolongs aging process.
- Good glycemic control.
- Helps preventing the renal stone formation.[10]

## 2. Aloe vera-



**Fig.2: Aloe vera**

**Synonym-** Kumari, hindi-musabbar

**Biological source** –

Aloe is the dried juice collected by incision from the bases of the leaves of various species of aloes.

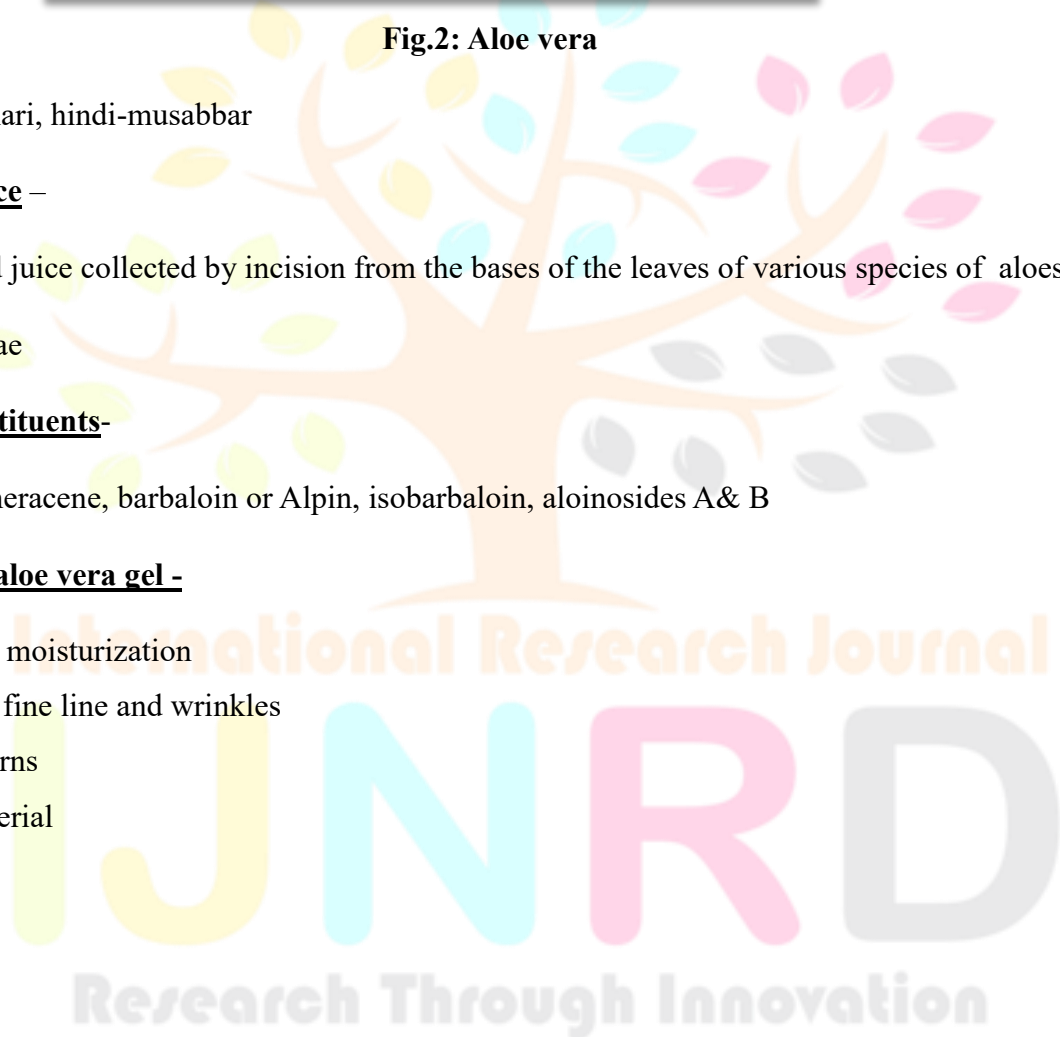
**Family-** Liliaceae

**Chemical Constituents-**

Glycosides, antheracene, barbaloin or Alpin, isobarbaloin, aloinosides A& B

**Advantages of aloe vera gel -**

- Provides moisturization
- Reduces fine line and wrinkles
- Heals burns
- Antibacterial



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### 3. Coconut Oil-



**Fig.3: Coconut Oil**

Coconut oil may improve the skin in a variety of ways. It may have antiviral, antibacterial, and anti-inflammatory qualities, according to research. For dry skin, coconut oil is also incredibly hydrating[15].

### 4. Neem Oil-



**Fig.4: Neem Oil**

The neem tree is used to extract neem oil. Neem oil is utilized by some traditional Chinese and Ayurvedic medical practitioners to treat a variety of ailments, including fungal. The fruits and seeds of the neem tree are the source of neem oil. The Indian subcontinent is where these trees are mostly found.

Fatty acids that promote healthy skin, like palmitic, linoleic, and oleic acids, are abundant in neem oil Trusted Source. As a result, the oil is a common component in skin care products.

The plant's leaf has additional health advantages. Flavonoids and polyphenols, which Are plant chemicals with antibacterial, anti-inflammatory, and antioxidant qualities, are found in the leaves[16].

## 5. Tea Tree Oil-



**Fig.5: Tea Tree Oil**

The leaves of the little Australian species *Melaleuca alternifolia* are the source of tea tree oil. Several substances found in tea tree oil, such as terpinen-4-ol, have the ability to specific viruses, fungi, and bacteria from a reliable source.

Because of its ability to combat germs, tea tree oil is a highly valued natural medicine for treating bacterial and fungal skin diseases, avoiding infections, and accelerating healing[17].

## 6. Vitamin E oil-



**Fig.6: Vitamin E Oil**

Vitamin E oil has several advantages for the skin, including hydrating it, curing psoriasis and eczema, and lessening the look of wrinkles and scars.

The benefits of vitamin E oil are mostly cosmetic and have not been well-supported by research.

Applied directly to the skin, vitamin E oil is different from vitamin E pills. Some individuals just crack open vitamin E capsules and apply the contents on their skin; manufacturer's concentrations [4,5].

## 7. Bees wax-



**Fig.7: Bees wax**

**Ability to Protect Against Irritants:** When applied topically, beeswax can serve as a barrier to keep out allergens. It can shield skin from dangerous pollutants and bad weather. Beeswax not only calms and moisturizes hair, but it also prevents moisture from escaping the hair. On the skin[11,12], beeswax can function as a barrier of defence. It draws water because it is a humectant. These two qualities might aid in maintaining the skin's moisture content. A great natural exfoliant for removing dead skin cells is beeswax. Beeswax's

antimicrobial qualities aid in skin healing and softening as well. It can be used to treat a variety of skin conditions, including acne, eczema, dry skin, and stretch marks[13,14].

## Conclusion

The study emphasizes the enormous potential of medicinal plants, particularly when it comes to creating topical medications like creams. The body's largest organ, the skin, is a vital defense against external stressors and a good indicator of general health. Due to its affordability and safety, herbal medicine-which uses plant components including leaves, stems, and roots-has long been used to treat a variety of illnesses. These plants work well because of their bioactive substances, which include tannins, alkaloids, and flavonoids. These substances have a variety of medicinal benefits, such as antibacterial, anti-inflammatory, and antioxidant effects various herbs, including tea tree oil, aloe vera, neem, and liquorice root, show potential as natural acne treatments due to their antibacterial, anti-inflammatory, and antioxidant properties.

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