



## A Review on Anti-Acne Cream

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### ABSTRACT

The majority of Indians nowadays suffer from acne vulgaris, a chronic skin condition. Acne is a persistent inflammatory skin disorder that is related to sebaceous glands. Everybody has problems with pigmentation, acne, makeup, and pimples at some point in their lives. Looks for a solution, like anti-acne cream, that can repair their skin problems and give them beautiful, healthy skin have begun. Many ingredients found in the majority of anti-acne creams on the market may cause adverse effects in certain people. This study was carried out to create and assess an anti-acne cream that contains honey, aloe vera, and tulsi extract.

**Keyword-** Anti acne, Aloevera, Tulsi extract, Honey, treatment of acne.

### Introduction

Many people choose herbal products over synthetic ones because the former have fewer negative side effects while the latter have multiple detrimental ones. These days, acne is the biggest issue affecting adults and affecting both genders (male, female). There are two forms of acne disorders that can affect a person: acne vulgaris and acne rosacea.

Similar to adult acne, acne rosacea is a common, persistent, and medically curable skin condition. The middle third of the face, especially the nose, is usually affected by acne rosacea, which can cause transient aggravation and relief.[1]

### Epidemiology

Acne vulgaris is a disturbing issue especially for teenagers and adolescents. According to global statistics, approximately 85% of the population will suffer this skin issue at age around 12-25 years, nearly 8% adults at age 23- 34 years old and only 3% of adults having acne vulgaris at age 35-44 years old.[2]

Acne (also known as Acne Vulgaris) is a persistent chronic skin inflammatory condition of the pilosebaceous follicles that affects people all over the world

A chronic inflammatory condition that affects the pilosebaceous unit, acne vulgaris usually has a protracted duration. Cutibacterium acnes, a bacterial species, frequently causes it throughout adolescence when normal amounts of dehydroepiandrosterone are present in the blood.[2]

### History

Acne vulgaris, another name for acne, is a persistent skin condition that arises from clogged hair follicles with oil and dead skin cells. Typical symptoms of the condition include greasy skin, blackheads or whiteheads, pimples, and possible scarring. The skin areas most typically affected include the face, upper chest, and back, which have a disproportionately large number of impacted oil glands.[2] Acne presents as a variety of polymorphic lesions from grade 1 to grade 4, starting with comedones, as listed below:

**Grade 1:** Also known as "comedones," and is categorised into two types, open and closed.

**Grade 2:** Inflammatory lesions present as a small papule with erythema.

**Grade 3:** Pustules.

**Grade 4:** Many pustules coalesce to form nodules and cysts called nodulocystic acne.[3]

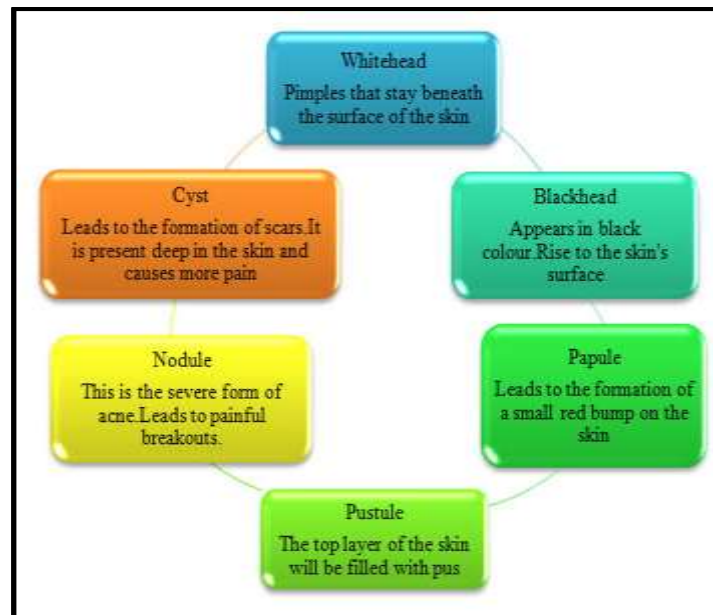


Figure no.1 Types of acne

#### Factors responsible for acne:[4]

- Propionibacterium acnes (P. acne)
- Altered follicular keratinization
- Inflammation
- Androgen-induced enhanced sebum hyper-production
- Medications.
- Due to the Cosmetics Used
- Stress
- Hormonal Changes and Menstruation
- Squeezing the Pimples.
- Diet
- Genetics
- Over Washing the Face with Cleansers

#### Treatment of acne:

- **Mild acne:** Benzoyl peroxide, Topical Clindamycin, Topical Erythromycin, Azelaic Acid, Topical Salicylic Acid
- **Moderate acne:** Topical retinoids/ antibiotics, Oral Isotretinoin
- **Severe acne:** Hormonal therapy

The pharmaceutical industry has developed a number of treatments, including anti-acne tablets, lotions, moisturisers, and creams, to address this issue. Creams are a kind of semisolid emulsion that are designed to be applied externally. They come in two varieties: water in oil (w/o) and oil in water (o/w).

Cream is classified as an oil and water emulsion. Its key advantage is that it lasts longer at the application site. It is applied to the skin's outermost or most superficial layer. The cream's functions include protecting the skin from the elements, healing infections, removing tans and acne, and soothing the skin.[5]

#### Cream

Creams are semi-solid emulsions of water and oil. They are further divided into two groups: creams with small water droplets scattered in a continuous oily phase (W/O) and creams with small oil droplets scattered in a continuous water phase (O/W).

- **Oil-in-Water (O/W):** An oil-in-water (O/W) emulsion is one in which the oil is spread as droplets throughout the aqueous phase. Oil-in-Water (O/W) creams are formed of minute droplets of oil dispersed in a continuous phase.
- **Water-in-Oil (W/O):** Creams that are made of tiny water droplets scattered throughout an ongoing oily phase are known as "water-in-oil" (W/O) products. The water-in-oil (W/O) kind of emulsion is created when an oil serves as both the dispersion medium and the dispersed phase.[6][7][8]

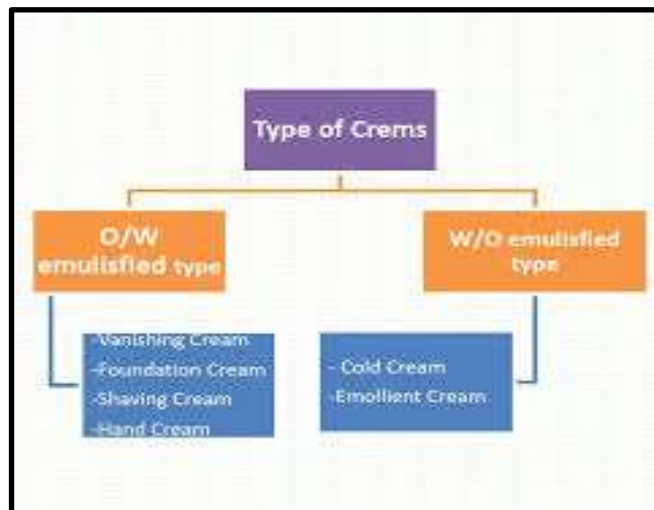


Figure no.2 Types of cream

#### Benefits of topical drug delivery system:[9]

- Preventing first-pass metabolism.
- The ability to quickly stop taking the drugs if necessary.
- A rather broad application area when compared to the nasal or buccal cavities.
- The ability to more precisely target a specific spot for medicine delivery.
- Utilising medications with a brief biological half-life and enhancing pharmacological and physiological response.
- Patient compliance will be improved.
- Offer suitable self-medication options

#### Disadvantages:[10]

- peeling,
- itching,
- irritation,
- reddened skin
- dry skin,
- scaling
- burning
- stinging

#### Dermal Symptoms:

Long-term therapy may cause steroidal acne, steroidal skin (skin atrophy, telangiectasis) and changes of the skin such as thinning, purpura, hirsutism and hypopigmentation.

**Role of ingredients:**

Sr. No	Ingredients	Roles
1.	Aloe Vera	Anti-ageing, anti-inflammatory, moisturiser, reduce acne and pimples.
2.	Tulsi extract	Antibacterial, adds glow to the face.
3.	Beeswax	Emulsifying agent, stabiliser and gives thickness to the cream.
4.	Liquid paraffin	Lubricating agent
5.	Borax	Alkaline agent which reacts with emulsifying agent to form soap
6.	Methyl paraben	Preservative
7.	Honey	It can help to kill the bacteria that contribute to inflamed pores.
8.	Rose water	Fragrance

**Table no.1**

Sr.no	Equipment
1.	Beaker
2.	Stirrer
3.	Weighing balance
4.	spatula
5.	Tripod stand
6.	Measuring cylinder
7.	Container

**Table no. 2**

- **Borax**



**Figure no.3**

In the cosmetics sector, borax is used to stop the growth of bacteria. Dead skin cells and skin bacteria are also eliminated with it. Cold creams made with added borax were more stable, but the oil and water components were less likely to separate on standing borax due to the emulsifier produced by the chemical reaction.[11][12][13]

- **HONEY**



**Figure no.4**

The thick golden liquid known for its capacity to properly moisturise skin is why honey is used in many winter face packs.

Honey not only relieves dry skin but also keeps it from getting dry in the winter.[11] [12, 13]

**Uses:**

- Deeply hydrates the skin
- Serve as pore cleaners
- Helpful for sunburn
- Add a healthy glow
- Age reverse

- **TULSI EXTRACT**



**Figure no.5**

Tulsi herb, also known as basil leaf, is a perfect addition to any beauty routine because of its many skincare benefits. These are a few ways Tulsi might improve the appearance of your skin.

Adding tulsi to your skincare routine can help transform your skin and give you a healthy, young glow, regardless of whether you have dry, sensitive, acne-prone, or ageing skin. Tulsi is a multipurpose plant with many advantages for the skin.[14]

**Uses:**

- Expectorant, bronchitis.
- Refrigerant.
- Stomachic.
- Carminative.
- Spasmolytic Property.
- Stimulant
- Antifungal.
- **ALOEVERA**



**Figure no.6**

It was used in the past to treat burns and infections. Aloe vera, however, has been shown to be a crucial ingredient in cosmetics thanks to advancements in cosmetology.

Aloe Vera in Ayurvedic herbal creams is a rich concentration of natural lubricants that create a thick layer of moisture on the epidermis, slowing down the pace at which water is lost from the skin. Consequently, this process stops aging.[11] [12] [13]

**Uses:**

- It is used to treat painful inflammatory symptoms
- Skin wounds are treated wrinkles and ageing

- It helps reduce wrinkles and ageing
- It is also used for acne
- **ROSE WATER**



**Figure no.7**

Rose water is used in a lot of beauty products.because of its capacity to lessen ageing's symptoms. Rose water plumps the skin and reduces the visibility of wrinkles when applied to a specific area.

Rose water can be added to cold cream or used directly. Give the skin a little more miniaturisation. It leaves the skin glowing and healthy. suitable for increasing hydration.[11] [12] [13]

- **Beeswax**



**Figure no.9**

One product made from the honeycomb of bees and other bees is beeswax.

Beeswax has the ability to coat the skin with protection. In addition, it draws water since it is a humectant. These two attributes have the potential to keep the skin moisturised.

Another excellent natural exfoliant for removing dead skin cells is beeswax.[11][12][13]

#### Uses

- Moisturizes skin
- Clear Acne
- Heal dry skin
- Reduces stretch marks
- Anti-inflammatory
- Protects liver.

- **METHYL PARABEN**



**Figure no.10**

microbial growth prevention, product stability improvement, broad-spectrum activity, and low-concentration safety.[19]

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### **FORMULATION :**

- In borosilicate glass beaker liquid paraffin and beeswax and heated together at temperature 75°C. (oil phase)
- In another beaker dissolve borax and methyl paraben in distilled water and heat at temperature 75°C. ( aqueous phase)
- Add slowly aqueous phase in oily phase.[15][16]
- Then add a measured amount of Aloe Vera and Tulsi extract.
- Stir it vigorously until it forms a smooth cream.
- Then add a few drops of rose water.
- Then put this cream on the slab and then add a few drops of distilled water.
- If necessary then the water will be added.
- Then the cream mixes in a geometric manner on the slab to give a smooth texture.
- Mix all the ingredients properly.
- The preparation of the cream is done.[17]

### **Evaluation of cream[18]**

#### **Irritancy test**

Mark an area on left hand dorsal substance upto (1 Sq cm)The cream was applied to the specified area And time was noted. Irritancy was checked if any up to 24 hrs For regular intervals.

#### **Physical evaluation**

The cream was observed for the colour, odour and appearance.

#### **Wash ability**

Easily washable.

#### **PH**

The pH metre was calibrated with the help of a Standard buffer solution.

#### **Spreadability**

A cream's spread ability refers to its capacity to cover skin.The spread ability was measured in terms of the number of seconds it took for two slides to separate from the cream that was positioned in between them when subjected to a specific load. The ability to spread is improved by a shorter separation period between the two slides. Standard-sized glass slides were taken in two sets. After that, a slide with the right dimensions was chosen, and the cream formulation was put on it. The formulation was then topped with another slide. The cream between the two slides was then uniformly compressed to form



a thin layer by applying a weight or other load to the upper slide. Then the weight was removed and excess of formulation adhering to the slides was scrapped off.

The upper slide was allowed to slip off freely by the force of weight tied to it. The time taken by the upper slide to slip off was noted.

Spread ability =  $mx l/t$

m= Standard weight which is tied to or placed over the upper slide (30g)l= length of a glass slide (5cm)

t= time taken in seconds.

#### Uses

It is used to remove acne.

It cures inflammation.

Control excess of oil.

It shows an emollient effect.

It reduces redness around spots.

#### Direction of use

After cleansing, apply the cream over your face

#### Precautions

Avoid contact with products that get into your eyes, rinse thoroughly with water. If eyes..

#### Storage

It should not be permitted to freeze.

#### Labelling information

- The label information should contain
- Manufacture and expiration date
- Conditions under which it should be stored.

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## CONCLUSION

Tulsi extract cream, when combined with honey, aloe vera, and other herbal ingredients, demonstrated a multitude of uses, each with notably distinct properties.

It is safe to use on skin, according to the results and debate.

Based on the aforementioned findings, it can be said that the cream's formulation demonstrated good homogeneity, pH, consistency and spreadability, non-greasy texture, and lack of phase separation throughout the research period. Given that the polyherbal acne cream is made of herbal extract, it is safe to use, according to the study mentioned above.

It would be much preferred if a herbal cream that uses herbal extracts to promote patient compliance and is safe, non-toxic, and effective could replace synthetic ones.

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