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## Review Article

# Advances in Herbal Lip Balm for the Treatment of Cheilitis and Other Lip Disorders: A Review

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## ABSTRACT

Because of their moisturizing, anti-inflammatory, antimicrobial, antioxidant, and wound-healing qualities, herbal lip balms have emerged as a natural and safer alternative to conventional lip care products. Environmental factors, microbial infections, allergies, nutritional deficiencies, and excessive exposure to sunlight are major causes of lip disorders, including cheilitis. Dryness, cracking, inflammation, soreness, and discomfort of the lips are the hallmarks of these conditions. Lip problems are mostly caused by environmental factors, microbial infections, allergies, nutritional deficiencies, and excessive sun exposure. Long-term usage of conventional lip care products may result in allergic reactions or irritation due to the synthetic ingredients they contain. Because of their moisturizing, anti-inflammatory, antibacterial, antioxidant, and wound-healing qualities, herbal lip balms have become a natural and safer substitute. Herbal lip balm compositions frequently contain herbal constituents such as aloe vera, turmeric, neem, coconut oil, beetroot, shea butter, and beeswax. These organic components support healing and hydration while shielding lips from dryness and infections. This review addresses the causes and types of cheilitis, herbal ingredients used in lip balm formulations, methods of preparation, evaluation parameters, therapeutic applications, recent advancements, limitations, and future prospects of herbal lip balm therapy in the treatment of lip disorders. Keywords: Herbal lip balm, Cheilitis, Lip disorders, Herbal cosmetics, Aloe vera. The causes and types of cheilitis, herbal substances used in lip balm formulations, preparation techniques, evaluation criteria, therapeutic applications, current developments, drawbacks, and future prospects of herbal lip balm therapy in the treatment of lip problems are all covered in this review.

## INTRODUCTION

Cheilitis is an inflammatory condition of the lips characterized by redness, scaling, fissuring,

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dryness, and pain. It can be caused by infections, allergies, nutritional deficiencies, excessive lip licking, dehydration, or exposure to harsh environmental conditions. Common lip disorders include angular cheilitis, actinic cheilitis, exfoliative cheilitis, allergic cheilitis, and chapped lips. Because lips lack sebaceous and sweat glands, they are more vulnerable to dryness and environmental damage than normal skin. Maintaining moisture and avoiding infections, irritation, and cracking requires proper lip care. Redness, scaling, fissuring, dryness, and tenderness are the symptoms of cheilitis, an inflammatory illness of the lips. Infections, allergies, malnutrition, excessive lip-licking, dehydration, or exposure to adverse environmental conditions can all cause it. Angular cheilitis,

actinic cheilitis, exfoliative cheilitis, allergic cheilitis, and chapped lips are common lip conditions.

Researchers have been motivated to create sophisticated herbal lip balm formulations with enhanced efficacy, stability, and patient acceptability due to the growing demand for herbal cosmetics and natural therapeutic treatments.

## 2. Causes and Pathophysiology of Cheilitis

Cheilitis is caused by a variety of factors that affect the delicate lip tissue. Depending on the severity and duration of exposure to causative agents, the condition can be either acute or chronic.

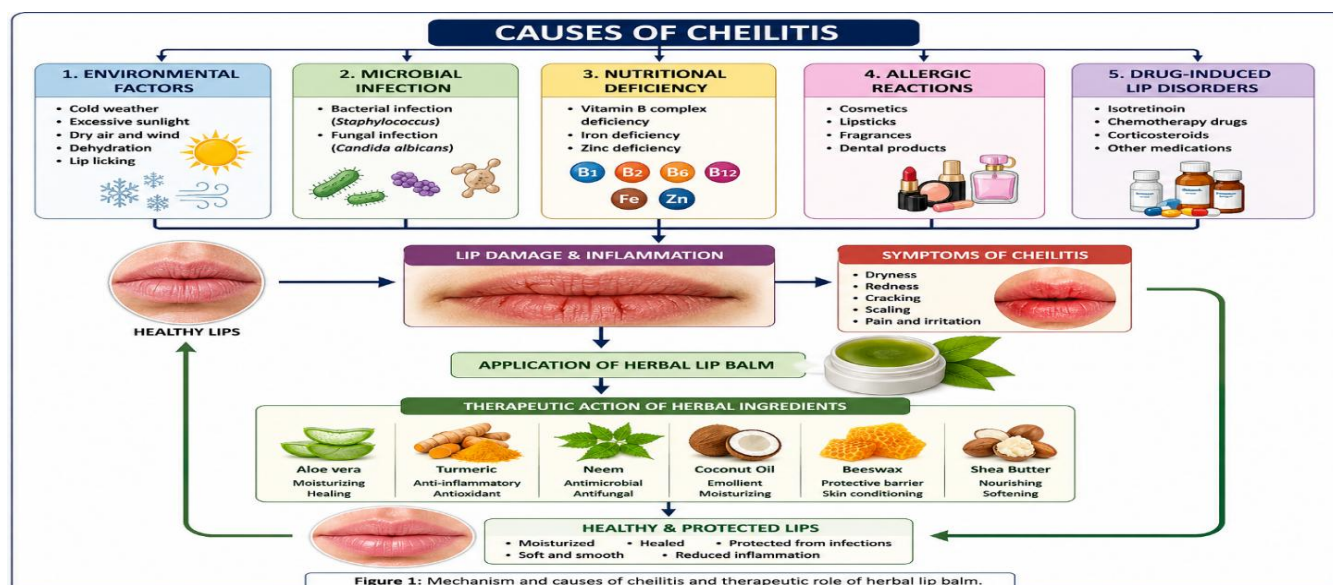


Figure 1: Mechanism and causes of cheilitis and therapeutic role of herbal lip balm.

### 2.1 Environmental Factors

The protective layer of the lips can be harmed by environmental factors such as cold temperatures, dry air, wind, dehydration, and prolonged exposure to sunlight, which results in moisture loss and dryness and cracking. Constant exposure results in moisture loss, which causes dryness and cracking.

### 2.2 Microbial Infection

Angular cheilitis is largely caused by bacterial and fungal infections. Organisms including *Candida albicans* and *Staphylococcus aureus* frequently infect injured lip tissues and exacerbate inflammation. Damaged lip tissues are frequently infected by bacteria like *Staphylococcus aureus* and *Candida albicans*, which exacerbate inflammation.

## 2.3 Nutritional Deficiency

Lip inflammation and ulcers can result from vitamin deficiencies, including iron, zinc, and vitamin B complex. A nutritional imbalance promotes vulnerability to infections and impairs tissue repair systems.

## 2.4 Allergic Reactions

Allergic responses to some cosmetics, lipsticks, toothpaste components, scents, and preservatives can induce allergic cheilitis, which manifests as redness, swelling, irritation, and itching of the lips. Redness, stinging, swelling, and irritation of the lips are symptoms of allergic reactions.

## 2.5 Drug-Induced Lip Disorders

Dryness and inflammation of the lips are side effects of certain medications, including corticosteroids, accutane, and chemotherapy treatments. Damage to the lip barrier, moisture loss, inflammation, microbial invasion, and tissue irritation are all part of the pathophysiology of cheilitis. Chronic discomfort and severe fissures can result from persistent inflammation.

## 3. Herbal Lip Balm: Concept and Advantages

Plant oils, herbal extracts, waxes, butters, and other natural ingredients are used to create the semisolid mixture known as herbal lip balm. It is administered topically to hydrate lips and shield them from infections and dryness.

### 3.1 Advantages of Herbal Lip Balm

Herb	Active Constituents	Therapeutic Action
Aloe vera	Aloin, polysaccharides	Moisturizing and wound healing
Turmeric	Curcumin	Anti-inflammatory and antioxidant
Neem	Nimbidin	Antimicrobial
Coconut oil	Lauric acid	Emollient and moisturizing
Beetroot	Betalains	Antioxidant and natural coloring
Shea butter	Fatty acids	Softening and nourishment

## Natural Composition

Plant-based components used in herbal lip balms are typically safer and more environmentally friendly.

## Moisturizing Effect

Natural waxes and oils hydrate lips and stop them from losing moisture.

## Anti-inflammatory Activity

Aloe vera and turmeric are two examples of herbs that lessen irritation and inflammation.

## Antimicrobial Property

Coconut oil and neem aid in the prevention of fungal and bacterial diseases.

## Antioxidant Action

Antioxidant-rich herbal components shield lips from environmental harm and oxidative stress.

## Better Patient Acceptance

Because they have less negative effects than synthetic ones, natural products are favoured.

## 4. Medicinal Herbs Used in Herbal Lip Balm

Because of their therapeutic qualities, a number of medicinal herbs are included in herbal lip balm formulations.



Beeswax	Esters and fatty acids	Protective barrier formation
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#### 4.1 Aloe Vera

Because of its calming, hydrating, and therapeutic qualities, aloe vera is utilized extensively. It lessens inflammation and encourages tissue healing.

#### 4.2 Turmeric

Curcumin, an ingredient in turmeric, has antibacterial and anti-inflammatory properties that can be used to heal swollen and cracked lips.

#### 4.3 Neem

Strong antibacterial and antifungal properties of neem aid in the management of microbial diseases linked to cheilitis.

#### 4.4 Coconut Oil

Coconut oil is a great emollient and moisturizer. It keeps lips from drying out and creates a protective barrier.

#### 4.5 Beetroot

Beetroot offers antioxidant defense and natural pigmentation. It is frequently utilized in formulas for tinted herbal lip balms.

### 5. Formulation and Evaluation of Herbal Lip Balm

#### 5.1 Formulation Method

The fusion procedure is frequently used to make herbal lip balm. Beeswax, oils, and herbal extracts are among the ingredients that are melted and evenly combined.

#### General Procedure

1. Oils and beeswax are heated until they melt.
2. Add the herbal extracts gradually while stirring constantly.
3. A combination of coloring and flavoring ingredients.
4. The mixture is poured into molds or containers.
5. The item is stored after cooling.

#### 5.2 Evaluation Parameters

##### Physical Appearance

The product should smell good, be uniformly colored, and have a smooth texture.

##### pH Determination

To prevent irritation, the pH should be suitable with the lip tissue.

##### Spreadability

The lip balm shouldn't be very firm and should spread easily.

##### Melting Point

Stability during storage and application is ensured by an appropriate melting point.

##### Stability Study

Over time, the formulation's color, odor, texture, and microbiological stability are assessed.

##### Irritation Test

Redness, itching, or allergic responses shouldn't be brought on by the product.



Evaluation Parameter	Purpose
pH	Skin compatibility
Spreadability	Ease of application
Melting point	Product consistency
Stability	Shelf life assessment
Irritation test	Safety evaluation

## 6. Therapeutic Applications of Herbal Lip Balm

Many lip conditions are treated with herbal lip balms.

### 6.1 Angular Cheilitis

Herbal ingredients with antimicrobial activity help control fungal and bacterial infections associated with angular cheilitis.

### 6.2 Chapped Lips

Natural oils and waxes provide hydration and prevent moisture loss from dry lips.

### 6.3 Lip Inflammation

Anti-inflammatory herbs such as turmeric and aloe vera reduce swelling and irritation.

### 6.4 Lip Pigmentation

Beetroot and natural antioxidants help improve lip appearance and reduce pigmentation.

### 6.5 Sun Protection

Certain herbal lip balms contain SPF ingredients that protect lips from harmful ultraviolet radiation.

## 7. Recent Advances in Herbal Lip Balm

Recent developments in herbal technology have improved the therapeutic effectiveness of herbal lip balm formulations.

### 7.1 Nano-Herbal Formulations

Herbal compounds' stability and penetration in lip balm formulations are enhanced by nanotechnology.

### 7.2 SPF-Based Herbal Lip Balm

In order to reduce UV-induced lip damage, modern formulations include natural sun-protective ingredients.

### 7.3 Preservative-Free Formulations

To lessen chemical exposure, researchers are creating formulations with natural preservatives.

### 7.4 Organic Herbal Lip Balm

Consumer demand for organic products made from plant ingredients devoid of chemicals is rising.

### 7.5 Medicated Herbal Lip Balm

Advanced formulations improve the treatment of severe lip problems by combining medicinal drugs with plant extracts.

## 8. Limitations and Challenges

Herbal lip balms have certain drawbacks despite their many benefits.

- The challenge of standardizing herbal components
- Contamination risk
- Restricted clinical research
- Issues with stability while storing
- Sensitive people may experience allergic responses.
- To increase the efficacy and safety of herbal formulations, appropriate quality control and scientific validation are required.

## **FUTURE PROSPECTS**

Future studies on herbal lip balm concentrate on:

- The creation of cutting-edge delivery methods
- Utilizing nanotechnology
- Durable moisturization
- A clinical assessment of herbal components
- The commercialization of customized herbal lip care items

Global demand for herbal lip balms is anticipated to rise as people become more conscious of natural cosmetics.

## **CONCLUSION**

Medicinal herbs like aloe vera, turmeric, neem, coconut oil, and beetroot greatly contribute to lip protection and tissue repair. Recent advancements like nano-herbal formulations, SPF-based products, and preservative-free preparations have improved the quality and therapeutic effectiveness of herbal lip care products, but more clinical research and standardization are needed to establish their long-term safety and efficacy. Herbal lip balms are promising natural formulations used in contemporary

pharmaceutical and cosmetic practice. With little adverse effects, they offer moisturizing, antibacterial, anti-inflammatory, antioxidant, and therapeutic properties. Aloe vera, turmeric, neem, coconut oil, and beetroot are examples of medicinal plants that greatly aid in tissue repair and lip protection. The quality and therapeutic efficacy of herbal lip care products have been enhanced by recent developments, such as nano-herbal formulations, SPF-based treatments, and preservative-free preparations. To determine their long-term safety and effectiveness, more clinical research and standardization are necessary. In contemporary pharmaceutical and cosmetic practices, herbal lip balms can function as efficient and secure substitutes for synthetic lip care products.

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