

# Systemic Review on Formulation & Evaluation of Hair

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**Abstract:** The scientific study of the physical, chemical, and biological properties of raw medicines as well as their manufacturing, collection, marketing, and storage histories is known as pharmacognosy. Hair has a significant impact on a person's personality, and cosmetics may help. Herbal hair oil is always safer than allopathic hair oil. Herbal medicines and herbs have been proved in clinical research to stimulate hair growth. Dandruff, hair loss, and fading are the main problems associated with hair loss, which is a major worry for both men and women. Herbal cosmetics are incredibly popular on the international market and are a priceless gift from nature. In addition to moisturizing the scalp, herbal hair oils also reverse dry scalp and dry hair issues. Amla, Hibiscus, Aloe Vera, Jasmine, Fenugreek, Onion, Curry leaves, Black cumin, Almond oil, Coconut oil, and other plant materials were used in the current study to create a herbal oil that could be applied to hair. In evaluating the herbal oil, a number of parameters were identified and reported, including the acidity, viscosity, saponification, pH, and skin irritation, among others. Important components include: herbs, herbal hair oil, healthy hair, cosmetics, preparation, analysis, findings, and discussion.

**Key Elements:** Cosmetics, herbs, Herbal hair oil, Healthy Hair, Preparation, evaluation, results and discussion.

## INTRODUCTION

Overview In a world where artificial hair care products abound and promise miracle outcomes, there is a rising desire to reconnect with time-tested customs and turn back to natural therapies. Our concept draws inspiration from this culture of respect for natural health. The ancient Indian medical system known as Ayurveda has millennia's worth of botanical knowledge. Ayurveda, which has its roots in the ideas of harmony and holistic health, places a strong emphasis on using nature's gifts to nourish the body, mind, and soul. One of the traits of mammals is their hair, which serves a variety of purposes, including providing protection from the elements, such as heat, cold, etc. One of the key bodily components that is taken into consideration is hair. introduction to the body's protective appendages, sebum glands, sweat glands, and integumentary structures.[1]

The idea that genuine wellness starts with a balanced state of being is at the core of this holistic approach, and nowhere is this more apparent than in the field of hair care. Our concept, which aims to create an Ayurvedic hair oil that goes beyond traditional beauty products, is a harmonic blend of traditional Ayurvedic knowledge and contemporary scientific advancement. The bulb, root, and shaft are the fundamental components of hair.[2].

### ➤ Classification:

#### 1. Cosmetic Product Development:

This project involves the formulation and development of a cosmetic product, specifically an Ayurvedic hair oil, aimed at enhancing hair health and promoting scalp wellness.

#### 2. Traditional Medicine Integration:

It integrates traditional Ayurvedic principles and botanical remedies into modern hair care practices, bridging the gap between ancient wisdom and contemporary cosmetic formulations.

#### 3. Natural Product Innovation:

The project focuses on innovation within the realm of natural products, leveraging the therapeutic properties of botanical ingredients to create an effective and sustainable hair care solution.

#### 4. Holistic Wellness Promotion:

It promotes holistic wellness by addressing not only external factors affecting hair health but also internal imbalances that may contribute to hair issues, aligning with the holistic approach of Ayurveda.

#### 5. Research and Development (R&D):

The project involves extensive research and experimentation to optimize the formulation, efficacy, and safety of the Ayurvedic hair oil, highlighting its classification as an R&D endeavor.

techniques for Making Hair Oil and Its Market Availability

Measure out 200 milliliters of coconut oil in a beaker. Heat the oil in the beaker over a heat source until it gently boils. Give it two minutes to boil.

Five hibiscus blossoms and six hibiscus leaves should be gently added to the heating coconut oil after two minutes. Next, add two teaspoons of fenugreek seeds, ten to twenty curry leaves, and two tablespoons of amla powder.

#### ➤ Coconut Oil

Because it softens, hydrates, and strengthens those brittle, broken strands, coconut oil .



#### The advantages of coconut oil

All hair types see less protein loss when coconut oil is applied to their hair. Additionally, this oil works well as a daily conditioner due to its high lauric acid content and ease of penetration into the hair shaft. The milk of the coconut palm fruit is used to make coconut oil. In addition to being used as cooking oil, coconut oil is also utilized in the manufacturing of detergent and cosmetics.[3]

Additionally, coconut oil for hair helps retain moisture, giving it a stunning sheen. A natural method to promote quicker, thicker, and longer hair growth is to use coconut oil. Coconut oil's naturally occurring vitamins and vital fatty acids support the scalp and aid in the removal of sebum accumulation from hair follicles.

#### Benefits of Coconut Oil for Health:

##### 1. May promote fat burning

Saturated fats called medium-chain triglycerides (MCTs) are abundant in coconut oil. Generally speaking, there are three categories of saturated fats, and each has unique physiological consequences. These subcategories of Trusted Source include:

- long-chain
- middle-chain
- short-chain

MCT supplementation, for example, dramatically reduced body weight, BMI, and waist circumference when administered with a low-calorie ketogenic diet, according to a 2023 research Trusted Source.

Given that coconut oil contains 65% MCT fat, it could have fat-burning qualities comparable to those of pure MCT oil TrustedSource

##### 2. Could serve as a rapid energy source

Long-chain triglycerides (LCTs) are encapsulated in molecules known as chylomicrons, which are then carried into your bloodstream by the lymphatic system. Chylomicrons are transported to your liver and other tissues after leaving your lymphatic system, where they are either stored or converted into energy. Therefore, it takes time to obtain energy from LCTs.

##### 3. Potential antibacterial properties

Coconut oil possesses antifungal and antibacterial properties. Lauric acid is a fatty acid that accounts for around half of the MCTs in coconut oil, making it a Trusted Source because of its MCT level. According to research, it could have antibacterial properties against germs that cause sickness, like Trusted Source. Lauric acid may have bacteriostatic properties, according to studies. Without really killing the germs, this chemical stops them from growing.

##### 4. Could reduce hunger

MCTs have the intriguing potential to enhance sensations of fullness, or satiety. Reliable Source and aid in lowering food consumption reliable source.

Ketones may be recognizable to you from the recent surge in popularity of ketogenic diets. On a ketogenic diet, people tend to consume a lot of fat but few carbohydrates. Their bodies therefore frequently use ketones as fuel. Actually, according to a 2017 research (Trusted Source), coconut oil is less filling than MCT oil.

##### 5. Could lessen seizures

Keto diets, which are extremely low in carbohydrates and rich in fats, have long been used to treat a variety of illnesses, including children's drug-resistant epilepsy. Researchers think that the decrease in seizure frequency in epileptics on ketogenic diets may be due to a shortage of accessible glucose to power brain cells.

Taxonomical classification of Coconut oil:

Rank	Scientific name and common name
Kingdom	Plantae
Family	Arecaceae
Genus	Cocos; L.
Species	C. nucifera
Biological name	Cocos nucifera
Other names	Coconut Oil, Copra Oil, Coconut Oil

Table No.1.T.c.Cocount Oil

Applications for Coconut Oil:

Aid in keeping the scalp hydrated and eliminate the dead hair follicles; moisturizer, vehicle; clear pores to promote hair development.

➤ Hibiscus blossom

The plant Hibiscus rosa sinensis, which belongs to the Malvaceae family, is known in Telugu as Dasarratau, Javapushpama, and mandara.

In addition to being used as a brain tonic, aperient, diuretic, antiscorbutic, depuritive, emollient, anodyne, and aphrodisiac, it is also used to treat bronchial catarrh, emmenagogue, laxative, skin conditions, hair growth, blackening, and luster.

The leaves are oblong to lanceolate, alternating, and often have a lobed or serrated edge. The trumpet-shaped, huge, showy blooms have five or more petals. In tropical and subtropical regions, this plant is often grown as an ornamental.[4]



Benefits of Hibiscus for Hair Growth Hibiscus is a flowering plant that, because of its health benefits, is frequently utilized in hair care products. Hibiscus may help with hair growth in the following ways:

1.Nourishing Properties.

Vitamin C, vitamin B6, iron, and other minerals are found in hibiscus, which is good for hair health. Healthy hair growth can be encouraged by these nutrients' ability to nourish the hair follicles.

2 .Stimulates Hair Growth.

Hair development can be promoted by the amino acids found in hibiscus, which can aid to increase blood circulation in the scalp. The hair shaft may become stronger and less brittle as a result.

3.Conditions The Hair .

Hair that has been conditioned by hibiscus may become smoother and easier to handle. It can also aid to make hair glossy and less frizzy.

4.Prevents Hair Fall.

Because it strengthens hair follicles and lessens breakage, hibiscus can help prevent hair loss. Both healthy hair development and general hair health may be enhanced by this.

5.Anti-Inflammatory Properties.The anti-inflammatory qualities of hibiscus can aid in calming the scalp and lowering irritation. By fostering a healthy environment for the hair follicles, this can aid in promoting healthy hair development.

Taxonomical Classification of Hibiscus Flower

Rank	Scientific name and common name
Kingdom	Plantae
Family	Malvaceae
Subfamily	Malvoideae
Order	Malvales
Species	H.Rosa-sinensis
Biological name	Hibiscus Rosa-sinensis
Other names	Hibiscus arnottiGriff.Ex mast. Hibiscus Boryanua DC.

Table .T.c.Hbicus Flower

Hibiscus protects your scalp from environmental stressors

Hibiscus soothes and shields your sick scalp from UVB radiation by acting as an astringent. Hibiscus's purifying qualities help to regulate oil accumulation and balance the pH of your scalp. Relief from itching and thicker hair follicles are further benefits of a calmed scalp.

Uses of Hibiscus: Improves hair growth, Cures dandruff and itchiness.

## Hibiscus Leaves

Originating from the Hibiscus plant (*Hibiscus rosa-sinensis*), hibiscus leaves are well known for their therapeutic and aesthetic qualities.



### Medicinal Uses

#### 1. Hair Care.

Ayurvedic and traditional medicine make extensive use of hibiscus leaves to feed the scalp, encourage hair development, and stop hair loss.

Stronger and healthier hair is thought to result from their stimulation of hair follicles and enhancement of scalp circulation.

#### 2. Skin Health.

The anti-inflammatory and antioxidant qualities of hibiscus leaf extract are well recognized, and they can help calm inflamed skin, lessen redness, and improve skin health in general.

#### 3. Digestive Health.

When ingested as a tea or infusion, hibiscus leaves contain chemicals that may have modest laxative effects, assisting in digestion and alleviating digestive distress.

### Cosmetic Uses

Hibiscus leaves are frequently used to strengthen hair follicles, encourage hair growth, and give shine to hair in DIY hair care products including hair oils, masks, and rinses.

#### Preparation and Usage

In order to extract the beneficial chemicals from dried hibiscus leaves, they can be steeped for a few weeks in a carrier oil, like coconut or olive oil, to create hibiscus leaf-used oil. You can then apply the infused oil topically to your skin and hair.

You may also make a tea with hibiscus leaves by steeping fresh or dried leaves in boiling water for five

to ten minutes. For its health benefits, the resulting tea can be taken every day. It can also be used as a face toner or hair rinse.

### Taxonomical Classification of Hibiscus Leaves

Rank	Scientific name and common name
Kingdom	plantae
Sub-kingdom	Trachebionta
Super-division	Spermatophyta
Division	Magnolipsida
Sub-class	Dilleniidae
Order	Malvales
Family	Malvaceae
genus	Hibiscus
Species	Hibiscus rosa- sinensis

Table .T.c.Hibiscus Leaves

### Cautions

While hibiscus leaves are generally considered safe for most people when used in moderate amounts, individuals with allergies to plants in the Malvaceae family (such as marshmallow and okra) may experience allergic reactions.

Hibiscus leaves offer a multitude of benefits for both health and beauty, making them a valuable ingredient in natural remedies and cosmetic formulations.

#### ➤ Amla Powder

In the ancient Indian medical system known as Ayurveda, amla, formally known as *Phyllanthus emblica* and often called Indian gooseberry, is highly esteemed. Since ancient times, amla powder—which is made from the dried fruit of the amla tree—has been prized for its exceptional health and cosmetic properties.

Our project involves creating an Ayurvedic hair oil, and amla powder is a crucial component because it has several therapeutic benefits that strengthen hair follicles, nourish the scalp, and enhance overall hair health. It appears smooth and stiff. It's a light greenish yellow color.[6]



### Chemical constituents

Amla is rich in phenolic compounds, vitamin C, pectin, gallic acid, ellagic acid, corilagin, phyllanthidine, and phyllantine (both alkaloids). Ascorbic acid levels range from 1000 to 1700 mg/100 grams. There are also pedunculagin, punigluconin, and emblicanins A and B, which are hydrolyzable tannins. Nearly spherical in shape, the fruit features six vertical stripes or furrows.[7]

### Benefits of Amla Powder

#### 1. Stimulates Hair Growth.

Amla contains a lot of vitamin C, which helps to stimulate hair follicles and encourages the growth of healthy hair. Moreover, the phytonutrients it contains feed the scalp and foster the growth of hair.

#### 2. Strengthens Hair.

Amla powder for hair contains vital fatty acids and antioxidants that help strengthen hair follicles, preventing breakage and hair loss. Using amla powder on a regular basis can help build your hair strands, making them more resistant to harm.

#### 3. Prevents Premature Greying.

The natural pigmentation qualities of Amla powder help darken hair and delay the onset of graying. It can successfully conceal gray hair while encouraging the synthesis of melanin, the pigment that gives hair its color.

### Taxonomical classification of Amla powder

Rank	Scientific Name And Common Name
Kingdom	Plantae (Plants)
Subkingdom	Tracheobionta(Vascular plants)
Superdivision	Spermatophyta (Seed plants)
Division	Magnoliophyta
Class	Magnoliopsida
Sub-class	Rosidae
Order	Malpighiales
Family	Phyllanthaceae
genus	Phyllanthus
Species	Phyllanthus emblica

Table No..T.c.Amla powder

### ➤ Fenugreek Seeds

Fenugreek has been used since thousands of years ago. Archaeologists believe that this spice was

utilized as early as 4000 BC, based on the discovery of herb remnants in Tell Halal, Iraq. Ancient Egyptians considered fenugreek to be a medical medication and utilized it for this reason. Fenugreek was thought to have the ability to both induce childbirth and heal burns. It was also employed in mummification. Trigonella foenumgraecum, the fenugreek plant, is an annual herbaceous plant in the Fabaceae family that is grown for its leaves and seeds, which are used as a herb and spice. One stem or branches at the base of the stem may be present. The plant has small, trifoliolate leaves with oval leaflets that are green to purple in color. The seeds are yellow, rhomboidal, pebble-shaped, and have a plain surface. The nutritional fiber and protein that make up the majority of fenugreek seeds have no taste or flavor[8].



### Benefit of Fenugreek Seeds

#### 1 .Reverts Hair Loss.

Are you tired of dealing with the problems caused by hair loss? Fenugreek seeds may be exactly what you need, so look for them in your spice box. Fenugreek seeds work wonders for follicular issues and for strengthening hair from the ground up. These seeds combat two major causes of hair loss: dandruff and scalp inflammation.

#### 2. Fights Dandruff.

Dandruff can aggravate you and cause you to itch your head. Your hair may become weaker as a result, eventually causing it to fall out. This is the fault of germs and fungi! Even though they exist on the scalp in some form, dandruff might result from an imbalance in their numbers.

#### 3. For Shiny Conditioned Hair.

Who doesn't want naturally lush, lustrous hair? To start, switch to fenugreek seeds in your hair diet instead of chemical-based shampoos and conditioners for silky smooth hair. These seeds condition the hair follicles and roots in addition to the individual hair strands.

Effects on Hair

1. Androgenetic Alopecia .

Fenugreek seeds have gained a lot of attention on social media as a plant-based antiandrogen. It is unclear how exactly diosgenin in fenugreek works, however it has been demonstrated to have oestrogenic activity, which may decrease dihydrotestosterone.[9].

Trigonelline and flavonoids induce the scalp to dilate.[10]. Studies have also demonstrated the anti-inflammatory and anti-proliferative properties of flavonoids.[11]

2. Anti-Fungal Effect .

It has a fungicidal impact on *Aspergillus niger*, *Aspergillus flavus*, *Trichoderma viride*, and *Aspergillus oryzae*. It is also effective against *Fusarium graminearum*, a dangerous pathogenic fungus.[18]

3.Bactericidal Activity .

*S. Aureus*, *S. typhi*, and *E. coli* are all successfully combatted by the seed extracts.

Taxonomical Classification of Fenugreek Seeds

Rank	Scientific name and common name
Kingdom	Plantae
Family	Fabaceae
Subfamily	Fabiodeae
Genus	Trigonella
Order	Fabales
Species	T.Foenum-graecum
Biological name	Trigonella foenumgraecum
Other name	Fenugreek seed Trigonella

Table No.6.T.c.Fenugreek Seeds

Uses of Fenugreek

Revives damaged hair.

Fights dandruff.

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