



## HERBAL HAIR OIL

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### ABSTRACT:

The increasing incidence of hair loss and related scalp disorders has led to a surge in demand for natural hair care products. This study focused on the formulation and evaluation of a Polyherbal Hair Oil incorporating extracts from traditionally effective herbs like Bhringraj, Amla, Hibiscus, and Kalonji (Black Seed). The primary objective of this formulation was to stimulate hair growth, strengthen hair follicles, and address issues like dandruff.

The prepared oil was thoroughly assessed for physicochemical parameters (pH, viscosity), organoleptic properties, and stability. The results confirmed the oil's safety, optimal physical attributes, and shelf life. Furthermore, evaluation of its antioxidant activity (via DPPH assay) and antimicrobial potential showed a significant inhibitory effect against fungal growth (dandruff-causing species) and high free radical scavenging capacity.

In vivo studies demonstrated a notable improvement in both hair growth rate and density, establishing the formulation's efficacy and safety. This research concludes that the polyherbal oil offers a potent, natural, and effective alternative for hair care with a superior safety profile compared to synthetic products.

**Keywords:** Polyherbal, Hair Growth, Antioxidant, Formulation, Evaluation, Safety.

### INTRODUCTION

Hair disorders are rising due to pollution and chemical cosmetics. To counter this, herbal oils, as described in Ayurveda, offer a safe and effective alternative. Herbal hair oils are rich in antioxidants, antifungals, and nourishing phytochemicals that strengthen hair follicles and control dandruff. This research focuses on the formulation of a polyherbal hair oil, aiming to promote hair growth and provide a side-effect-free treatment through rigorous scientific evaluation using natural ingredients. .

### 1. HERBAL:

The term 'Herbal' refers to products and components derived solely from plant origins, utilized extensively for both medicinal and cosmetic purposes. These materials are obtained from various plant parts (roots, leaves, seeds), reflecting thousands of years of traditional use, notably in systems like Ayurveda. Herbal formulations are distinguished by their high concentration of bioactive compounds, such as antioxidants, flavonoids, and saponins. Unlike synthetic chemicals, these natural constituents offer a superior safety profile with minimal side effects. The efficacy of a herbal product is directly attributable to the combined therapeutic properties of these naturally occurring compounds.



## HERBALPRODUCT

## **HARBAL HAIR OIL:**

Herbal Hair Oils are essential for hair nourishment and health, primarily due to their natural composition. They are rich sources of vitamins, antioxidants, and nutrients, acting as food for the hair. Key benefits include: Promoting Hair Growth by stimulating follicles (e.g., Bhringraj, Rosemary). Reducing Hair Fall and strengthening roots. Treating Scalp Issues like dandruff, thanks to anti-fungal/antimicrobial properties (e.g., Neem, Amla). Moisturizing the scalp and preventing hair damage. Herbal oils are preferred over synthetics for having



## HERBAL HAIR OIL

## DIFFERENT TYPES OF HERBAL OIL:

- Bhringraj oil
- Hibiscus oil
- Neem oil
- Rosemary Essential oil
- Castor oil
- Fenugreek oil
- Jatamansi oil

## DIFFERENT HERBS USED ARE AS FOLLOWS:

S.NO.	BOTANICAL NAME	COMMON NAME	FAIMILY
1.	<i>Azadirachta indica</i>	Neem	Meliaceae
2.	<i>Phyllanthus emblica</i>	Amla	Phyllanthaceae
3.	<i>Cocos nucifera</i>	Coconut	Arecaceae
4.	<i>Rosasinensis</i>	Hibiscus	Malvaceae
5.	<i>Ocimum tenuiflorum</i>	Tulsi	Lamiaceae
6.	<i>Eclipta prostrata</i>	Bhringraj	Asteraceae
7.	<i>Senegalia rugata</i>	Shikakai	Fabaceae
8.	<i>Allium cepa</i>	Onion	Amaryllidaceae
9.	<i>Aloe vera</i>	Alovera	Aphodelaceae
10.	<i>Asparagus racemosus</i>	Shatavari	Asparagaceae
11.	<i>Bacopa monnieri</i>	Brahmi	Plantaginaceae
12.	<i>Chrysopogon zizanioides</i>	Vetiver	Poaceae
13.	<i>Glycyrrhiza glabra</i>	Liquorice	Fabaceae
14.	<i>Nardostachys jatamansi</i>	Jatamansi	Caprifoliaceae

## 2. PLANTPROFILE:

### CASTER: (*Ricinuscommunis*)

Kingdom	Plantae
Order	Malpighiales
Family	Euphorbiaceae
Genus	<i>Ricinus</i>
Species	<i>Communis</i>

Castor oil for hair is a traditional remedy gaining scientific attention due to its unique component, ricinoleic acid (RA). RA constitutes 85-95% of the oil, possessing anti-inflammatory and antimicrobial properties crucial for maintaining a healthy scalp environment. Research suggests that topical application of castor oil may support hair health by acting as a powerful moisturizer and strengthening the hair shaft, which prevents breakage. Furthermore, some studies indicate that RA might act as an inhibitor of Prostaglandin D2 (PGD2), a molecule linked to hair loss. While human clinical trials are limited, the oil is widely recognized for its potential to improve hair thickness, condition, and overall follicular health. Regular use, often diluted with lighter oils, is recommended for best results.



Castor hair oil is very beneficial for hair. Given as below:

- ✓ Moisture & Shine
- ✓ Thickness
- ✓ Promotes Hair Growth
- ✓ Reduces Hair Fall
- ✓ Forms a Protective Barrier etc.

## BENEFITS OF CASTOR:

Castor oil have ricinoleic acid ,vitamine E, and anit microbial properties, which can be used to—

- ✓ Deeply moisturizes and conditions the hair shaft, effectively reducing dryness and breakage..
- ✓ Reduces skin inflammation and soothes irritation (due to the anti-inflammatory properties of Ricinoleic Acid)..
- ✓ Hydrates skin and is often used to soothe dry patches, scars, and stretch marks. Prevents blemishes and pimples.
- ✓ May promote hair thickness and volume when massaged into the scalp.

## ALMOND:((*Prunus dulcis*)

Kingdom	Plantae
Order	Rosales
Family	Rosaceae
Genus	<i>Prunus</i>
Species	<i>P. dulcis</i>

Almond (*Prunus dulcis*) Oil, extracted from almond kernels, is a popular emollient rich in Vitamin E, oleic acid (\$\Omega\$-9\$), and linoleic acid (\$\Omega\$-6\$), making it highly beneficial in dermatology and cosmetology.

Almond hair oil is very essential for hair. Given below:

- ✓ Hair growth
- ✓ Hair Shine and Conditioning
- ✓ Hair Strength & Reduced Breakage
- ✓ Hair shine and softness



## BENEFITS OF ALMOND:

Almond is very beneficial, which we can use to-

- ✓ They reduce cholesterol
- ✓ Regulate blood sugar
- ✓ They are rich in nutrients
- ✓ They make your skin soft and smoother
- ✓ Are good for your eyes

## Coconuts

Kingdom	Plantae
Order	Arecales
Family	Arecales
Genus	Arecales
Species	Nucifera

Coconut (*Cocos nucifera*), whose name is derived from the Spanish and Portuguese word 'coco', which means 'grinning face' or 'eerie face' due to the three indentations, is renowned for its culinary, health, and industrial applications. Its components—including the water, milk, and oil—are rich in medium-chain triglycerides (MCTs), fiber, vitamins (like B vitamins and vitamin C), and minerals (like potassium, copper, and iron).

The oil is particularly valued in both food and cosmetics for its high content of saturated fat, primarily lauric acid, which is beneficial for moisturizing skin and hair (DebMandal M., Mandal S. 2011). Although the nutritional benefits of coconut are widely studied, it is generally accepted to be a highly versatile and beneficial crop due to its wide range of uses, from hydrating drinks to potent moisturizers (Fife B. 2019).



## COCONUT

USES: Coconut is essential for, given as below:

- ✓ Deep Moisture and Conditioning
- ✓ Prevents Protein Loss
- ✓ Fights Dandruff and Scalp Infection
- ✓ Adds Shine and Reduces Frizz)
- ✓ Protection from Sun Damage

## TULSI OIL(Lamiaceae):

Kingdom	Plantae
Order	Lamiales
Family	Lamiaceae
Genus	Ocimum
Species	Tenuiflorum

## TULSI OIL

Tulsi is very essential for human life, given as below:

- ✓ Immunity Booster
- ✓ Hair oil
- ✓ Respiratory Relief
- ✓ Heart Health
- ✓ Skin care etc.

## BHRINGRAJ OIL :

Kingdom	Plantae
Order	Asterales
Family	Asteraceae
Genus	Eclipta

Bhringraj is a traditional Ayurvedic herb known for its powerful benefits, especially for hair care. Bhringraj oil, often prepared with other herbs, nourishes the hair from the roots, promoting hair growth, reducing hair fall, and improving overall scalp health. It is valued for its ability to reduce premature graying and add shine and strength to the hair.



BHRINGRAJ OIL

## USES:

- ✓ Promotes Hair Growth Stops hair loss
- ✓ Reduces Hair Fall
- ✓ Prevents Premature Greying
- ✓ Treat dandruff
- ✓ Improves Scalp Health etc.

JATAMANSI(*Nardostachys*):

Kingdom	Plantae
Order	Dipsacales
Family	Caprifoliaceae
Genus	<i>Nardostachys</i>
Species	<i>Jatamansi</i>

*Nardostachys jatamansi*, commonly known as Jatamansi or Spikenard, is a perennial herb native to the Himalayan region, belonging to the Caprifoliaceae family (or Valerianaceae in older classifications). The oil obtained from its rhizomes and roots contains active compounds like Jatamansone, Nardostachone, Aristolenes, and other sesquiterpenes, which contribute to its intense aroma and potent health benefits. Studies show Jatamansi's health benefits, including neuroprotective (protects nerve cells), anti-stress and sedative (reduces anxiety and promotes sleep), antifungal, antioxidant (fights free radicals), antidepressant, and hypotensive (helps lower blood pressure) properties.

## USES:

- ✓ Hair Growth
- ✓ Reduces hair fall
- ✓ Reduces Stress
- ✓ Calms the scalp
- ✓ Cancer prevention etc.



## JATAMANSI OIL

### ROSEMARY ESSENTIAL OIL(*Salvia officinalis*):

Kingdom	Plantae
Order	Lamiales
Family	Lamiaceae
Genus	Salvia
Species	Officinalis

Rosemary, a member of the Lamiaceae family, is a fragrant evergreen shrub native to the Mediterranean region. Its name Rosmarinus is derived from Latin, meaning "dew of the sea." Rosemary is a well-known culinary herb and medicinal plant recognized for its distinctive aroma and various health-promoting compounds, including rosmarinic acid, camphor, and carnosic acid. The essential oil is typically extracted from its leaves and flowering tops through steam distillation. Studies suggest that rosemary essential oil can inhibit DHT, a hormone that often contributes to hair loss. Research indicates that topical application of rosemary oil can stimulate hair growth and improve hair thickness. ROSEMARY

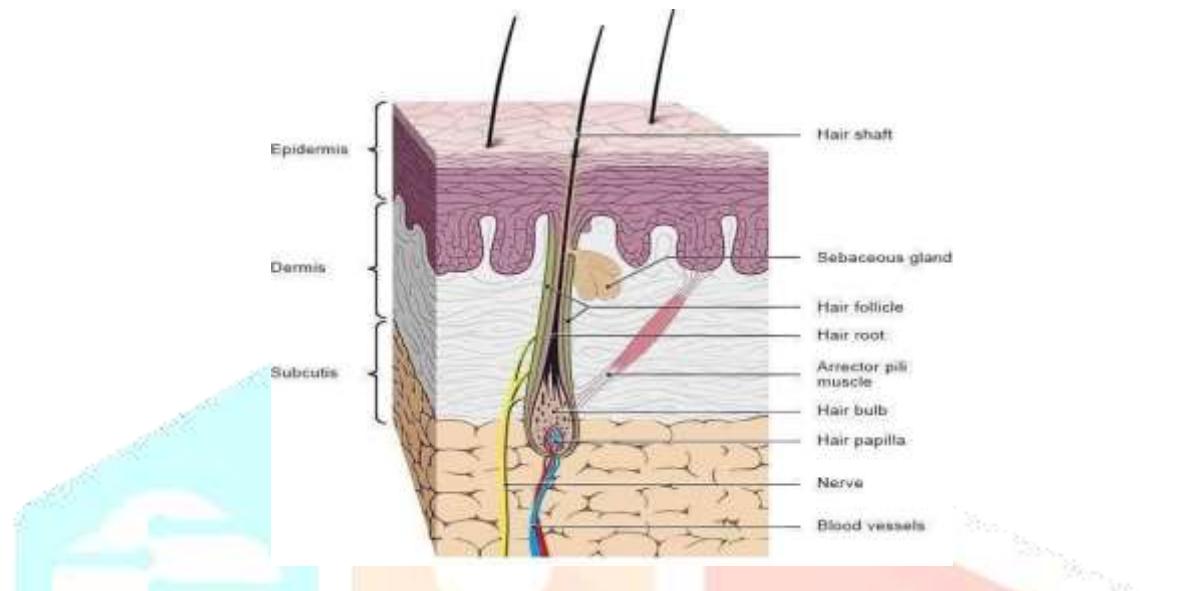
### USES:

- ✓ Revives damaged hair
- ✓ Fights dandruff
- ✓ Respiratory Health
- ✓ Pain Relief etc.



### 3. HAIRSTRUCTURE:

Hair structure consists of two main parts: the hair follicle and the hair shaft. The follicle is the living structure beneath the skin's surface, anchored in the dermis, where the hair growth cycle begins. It contains the dermal papilla, which supplies the necessary nutrients. The hair shaft is the visible, non-living part composed mainly of Keratin protein. It has three distinct layers: Medulla: The innermost core, often absent in fine hair. Cortex: The thick middle layer that provides hair's strength, elasticity, and color (pigment). Cuticle: The transparent outer layer made of overlapping, scale-like cells that protects the cortex and gives the hair its shine. These components define the hair's overall texture and health.



## HAIRSTRUCTURE

Sock-like structure from where hair begins to grow, it is called Hair Coup. Which extends from Epidermis to Dermis. The roots of the hair are found from the blood vessels named Nutrition Papilla. Rome also has a germinal matrix where new Romes are found (Grimorizc M, Rudnoika E. et. Al.2020).

## HAIR GROWTH CYCLE:

The hair on the scalp grows in three stages: Anagen (Growth Phase): The active phase where new hair is produced. It can last for several years. Catagen (Transition Phase): A short period (a few weeks) where hair growth slows, and the hair follicle shrinks, forming a club hair. Telogen (Resting Phase): The three-month resting period where the club hair fully detaches and eventually falls out, making way for new hair to begin the anagen phase (Grimovic M. et al. 2020). These stages continuously cycle to maintain hair density.



#### 4. CONCLUSION:

"Hair holds significance beyond mere aesthetics in human life, contributing substantially to self-esteem and overall well-being. However, the prevalence of hair issues is escalating, primarily due to excessive use of chemical products and increasing environmental pollution. In this context, this research paper underscores the critical importance of Herbal Hair Oils. These natural preparations, including traditional options like Amla, Almond, and Coconut Hair Oils, offer a therapeutic alternative with significantly reduced side effects compared to synthetic chemical formulations readily available in the market. Consequently, herbal hair oils are essential hair care products that provide a natural, effective solution for maintaining healthy, long, moisturized, smooth, and shiny hair.

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