



## **FORMULATION AND EVALUATION OF HERBAL HAIR OIL TREAT THE HAIR FALL**

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### **ABSTRACT**

*Herbal preparations always have less or no side effects compared to synthetic preparations. Pharmaceutical factories are used to manufacture and produce countless medicines. In addition, herbs are used to beautify the body in the preparation of cosmetics, flavors and dyes. The purpose of this review is to study the parameters regarding Formulation of herbal hair oil, using scientific research to make herbal hair oils using herbal ingredients like amla, hibiscus, flower curry, leaves, coconut oil, onion, neem, almond, tushi, alovera, Fenugreek, sesame oil, Shatavari, shikakai, drumstick. Based on the above observation, a crude herbal mixture was prepared in the form of herbal hair oil using the boiling method. The preparation has anti-hair loss and other useful properties such as anti-dandruff effect, improves blood circulation of the scalp and roots, reduces hair pigmentation, anti-fungal effect, reduces hair graying. The formulated vegetable oil was evaluated and parameters such as acid content, viscosity, saponification value, pH, skin irritation etc. were determined and described in this*

**KEYWORDS :** -hair oil, herbs, formulation, preparation, evaluation, results and discussion

### **INTRODUCTION**

Hair plays an important role in human life. In India, the traditional process is the preparation of hair oils put together with various hair growth promoting drugs. Indian women are known for their long, shiny and healthy hair, so it is not surprising that hair care features prominently in their self-care rituals. The Charaka Samhita (the definitive book on Ayurvedic medicine) describes the importance of oiling the hair and scalp to maintain good hair health and prevent hair loss. The daily hair oiling was recommended with appropriate herbs filled to suit other constituents and this practice also continues until today. The hair oil preparations are included to treat various dandruff, hair fall process, split ends etc. The hair oil preparations are mainly used to cool the scalp for luxurious growth of hair in both men and women. Various types of oils like almond oil, castor oil, onion oil are applied to scalp in admixture with suitable herbal drugs. Among these oils, coconut oil is the foremost worthy oil base because it gets absorbed into the hair strands better than other oils and is also economical compared to other oils. Hence, coconut oil added with herbal drugs is mentioned as the best method for hair growth. Hair on our head is the first line of defense against the sun's UV rays. Hair care products are nothing but it is those formulations which are used for modifying the texture of hair. Herbal cosmetics are highly used due to their less adverse effects and the ingredients used are easily available. Now a days hair care cosmetics are added with herbs and they are well recognized compared to synthetic ones. Hair oils are formulated with both synthetic and natural ingredients. Synthetic hair oils are those hair care products which are made by chemical or artificial substances. They are used to provide shine and excellent conditioning and they also help to reduce frizz. Natural hair oils are the hair care products which are rich in Vitamins, Minerals and Fatty acids which are replete.

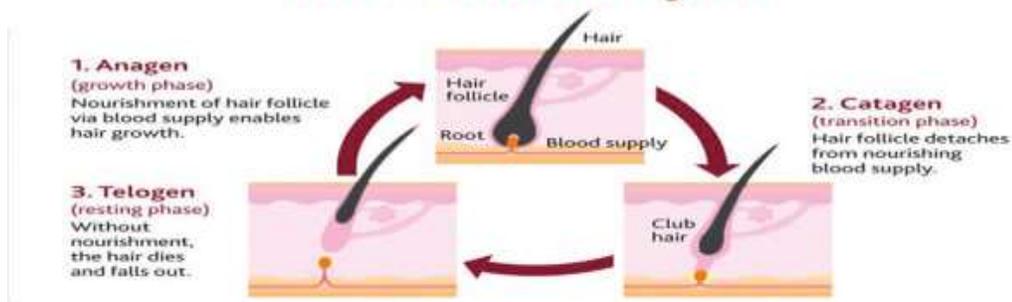
### **STATEMENT OF THE PROBLEM**

1. Hair loss such as genetic factor or predisposition, vitamin and mineral deficiency
2. Hair growth disorder, poor diet, hormonal problem, certain internal disease, drug use
3. Stress and depression, cosmetic factor and nutrient deficiencies, Avoiding heat



**Hair Follicle**

### Hair Growth Cycle



The hair follicle is where hair begins to grow and where it is held in place. It is a stocking-like structure that starts in the epidermis. It extends to the dermis. The follicle is lined by an inner and outer sheath that protects and molds the growing hair and ends just before the opening of sebaceous gland.

#### Hair shaft

The hair shaft is the part of the hair that is made up of three layers of keratin.

Those layers are;-

- The inner layer:- Also called as medulla. Depending on type of hair, the medulla is not always present.
- The middle layer:- This is called the cortex which makes the majority of the hair shaft.
- The outer layer:- Also called as cuticle, which is formed by tightly packed scales in an overlapping structure that resemble roof shingles

#### Hair Oil

Hair oil are hair care products. Hair care products are defined as the formulations which are used for the purpose of cleansing, modifying the hair texture, providing nourishment to the hair and maintaining the healthy appearance of hair. Hair oil are hair care formulation applied to the hair for the treatment of hair disorder such as baldness, greying of hair, hair fall, dry hair and also helps in providing nourishment to hair. Herbal cosmetics are high in demand due to increasing interest of mankind towards them also herbal cosmetics are more effective with negligible side effects and ingredients are easily available. Herbal hair oil is an essential part of herbal cosmetics. Herbal hair oil is more preferred and used in many ailments of hair. They not only promote hair growth but also provide necessary moisture to the scalp rendering in beautiful hair. Herbal oil which contain herbal drugs are known as hair tonic. Herbal hair oil provides a number of essential nutrient which are important to maintain the normal function of sebaceous gland and promote natural growth of hair. These are one of the most well recognized product for the treatment of hair. The use of hair oil is increasing everyday in line with the improvement in standard of living of people To give natural flavours and colours to hair oil the herbal essences and

**Their benefits are as follow:**

- It provides natural goodness to hair. Herbal oil contains vitamins and micro nutrients which acts as a food for hair.
- Hair oil helps in preventing hair loss and fames frizzy hair. Hair ends needs special care and herbal oil pampers them throughout their nourishment.
- Regular use of hair oil of hair oils cure problem of premature grey hair.
- Keeps the scalp hydrated.
- Improves hair growth.
- Prevents dandruff.
- Offers shine glow.
- Stress relief.

**Formulation :**

Sr no	Ingredients	Quantity
1	Coconut oil	50 ml
2	Amala	2 gm
3	Alovera	2 gm
4	Bringraj	1 gm
5	Onion	One onion
6	Shikakai	1 gm
7	Drumstick	10 leaves
8	Shatavari	1 gm
9	Fenugreek	2 gm
10	Sesam oil	2 ml
11	Neem	10 leaves
12	Tulshi	10 leaves
13	Hibiscus	5 flower

**Coconut oil**



### Coconut oil

Coconut oil is obtained from the milk of the fruit of the coconut palm. Coconut oil is used as an edible oil and used industrial application to produce cosmetics and detergents

Family - Aceraceae

**Scientific name** - *cocos nucifera* L

**Parts used** - kernal oil

**Geographical location** - southern india

**Activ constituents** - fatty acid ,caprin acid lauricacid

### Role

- Mask hair
- Moisturizer hair
- Seal hair
- Makes hair look shinier

### Amala



**Botanical name** - *phyllanthus embica*

**Kingdom** - plantae

**Order** - malpighiales

**Family** - phyllanthaceae

**Genus** - *phyllanthus*

*Phyllanthus emblica* is an important medicinal plant in Indian traditional system of medicine.[13] The tree is of 1-8 meter in height. The leaves are simple and intently set alongside branchlets. The flowers are of greenish yellow colour. The fruit is nearly round in shape and having hard appearance.

### Role

- Condition your scalp.
- Minimize greys
- Reduce dandruff
- Promote healthy hair growth.
- Strengthens the hair roots



## Alovera



### Alo vera

**Botanical name** - Aloe vera

**Kingdom** - plantae

**Order** - Aspiragales

**Genus** - Aloe

**Species** - A.vera

Aloe vera is a stemless or very short stemmed plant growing to 60-100 centimeters tall. Leaves are thick and fleshy, grey to green. Aloe vera is a species Aloe that is particularly known for its medicinal properties. Aloe species are distributed widely in the eastern European continents and are spread almost throughout the world.

### Role

- Strengthen and repair hair strands
- Deep cleans oily hair
- Calms an itchy scalp

## Bringraj



**Bringraj**

**Botanical name** - Eclipta prostrata

**Kingdom** - platae

**Order** - Asterales



**Species** -E.prostrata

**Family** - Asteraceae

**Genus** - Eclipta

Eclipta alba is an annual multibranched herbaceous plant. The height of plants is up to 30-50cm. It is found in tropical and subtropical region of the world such as South America, Asia and Africa at an altitude upto 2000 m. In the region of India it is mainly found in state of Bihar, Assam, Uttar Pradesh and Manipur.

#### Role

- Prevents hair fall
- Promotes hair growth
- Makes hair lustrous
- Repairs hair damage
- Treats baldness.

#### Onion



**Botanical name** - Allium

**Kingdom** - plantae

**Order** -Asparagales

**Family** - Amaryllidaceae

**Genus** - Allium

**Species** - A.cepa

The onion is also known as the bulb onion or common onion, is a vegetable that is most widely cultivated species of genus Allium. The onion plant has been grown and selectively bred in cultivation for at the least 7000 years. Modern varieties grow to a height of 15-45 cm. The leaves are yellowish to bluish green. They are hollow, cylindrical with one flattened side. Onion has been valued as a food and a medicine plant since ancient times.

#### Role

- Treats dandruff
- Inhibits hair thinning
- Fights scalp infection
- Slows down premature greying
- Nourishes dry or brittle hair.

#### Shkakai

**Botanical name** - senegalia rugata

**Kingdom** - plantae



**Order** - febales  
**Family** - fabaceae  
**Genus** - senegalia  
**Species** - S rugata



### Shikakai

Shikakai is a woody climber, shrub upto 5 metres tall. Leaves are bipinnate.

Shikakai has a naturally mild pH that gently cleans the hair without stripping it of natural oil. The regions having dry hot weather like South India is best suited for these trees. The extract from the bark, leaves, of shikakai is used as hair cleansing agent[15]. Shikakai is traditionally used in shampoo preparations for the purpose of hair growth.

### Role

- Makes hair soft and shiny
- Heals scalp and prevents the agony of the dry scalp
- Boosts hair growth
- Delaying greying of hair
- Works as natural hair cleaner



Drumstick



cleanses, prevents damage, dandruff, dryness, and boosts blood circulation, promoting hair growth. Its role includes boosting hair growth and leading to thicker, healthier hair. Drumstick is beneficial for hair and scalp due to its rich vitamin and mineral content. The role of the given text is to highlight how a certain product boosts hair growth, promotes hair growth, and ultimately leads to thicker and healthier hair.

### **Shatavari**

**Botanical name** - Asparagus

**Kingdom** - plantae

**Order** - Asparagales

**Family** - Asparagales

**Genus** - Asparagus

**Species** - A recement



**Shatavari**

Shatavari is a plant with small, shiny green photosynthetic branches that are uniform in appearance. It is known as a general tonic and specifically as a tonic for female reproductive health. The plant contains various secondary metabolites such as steroids, alkaloids, flavonoids, furan derivatives, and essential oils

### **Role**

a certain product, which includes smoothing the scalp, promoting hair growth, strengthening hair roots, and maintaining hair color and luster.

### **Fenugreek**



**Fenugreek**



scalp and hair as it moisturizes, stimulates hair growth, strengthens, and softens the overall texture. It also possesses anti-fungal, anti-inflammatory, antibacterial, and anti-pesticide properties that contribute to overall hair health.

- **Role :** - a certain product in increasing hair thickness and promoting growth,
- controlling scalp inflammation, fighting dandruff,
- adding shine and soft texture to the hair.

#### Till oil/ Sesam oil



family Pedaliaceae and is derived from the seeds of the plant with the scientific name *S. indicum*. The oil is extracted from the seeds and is commonly found in the Middle East states of India.

#### Neem

**botanical name** - *Azadirachta indica*.

**Kingdom** Plantae, -order Sapindales,

**family** -Meliaceae

**genus** -*Azadirachta*,

**species** - *A. indica*.



**Neem**



Neem trees are prevalent in India, Africa, and America, known for their medicinal properties utilized in ayurvedic medicine for millennia. The tree grows rapidly, reaching heights of 15-20 meters, with its Sanskrit name being Arista. The US National Academy of Science acknowledged the significance of the neem tree, releasing a report in 1992 titled "Neem - a tree for solving global problems." The leaves, bark, and gum are essential non-woody products of the neem tree.

The neem tree has various uses, including antifungal, antibacterial, insecticidal, and other biological activities.

#### Role

- Curve scalp problem
- Make lustrous and healthy hair
- Promotes thicker stronger hair growth
- Cooling and soothing effect

#### Tulshi



**Tulshi**

**Botanical name** - *ocimum tenuiflorum*

**Kingdom** - plantae

**Order** - lamiales

**Family** - lamiaceae

**Genus** - *ocimum*

**Species** - *o.tenuiflorum*

Tulsi, a herb from the Lamiaceae family, is well-known in the Indian subcontinent and has been utilized in Ayurvedic medicine for over 3000 years. It is an erect subshrub with many branches, typically 30-60 cm tall, and has a hairy stem. The leaves of Tulsi can be green or purple in color. This plant possesses various medicinal properties, with the leaves serving as a nerve tonic and aiding in memory enhancement.

#### Role

- Coagent remedy for hair loss
- Hair loss treatment
- Strengthening the hair roots
- Prevent bacteria and fungal infection



### Hibiscus Flower

**Botanical name** - Rose - sinensis

**Kingdom.** -plantae

**Order.** - malvales

**Family.** - malvaceae

**Genus.** - hibiscus



**Hibiscus flowers**

The leaves are alternate, oval or lanceolate, often toothed or serrated. The flowers are large, showy, trumpet-shaped, with five or more petals. This plant is widely cultivated as an ornamental plant in tropica and subtropical regions . This plant is commonly found throughout the tropics and as a houseplant worldwide .

### Role

- Stops hair loss
- Prevent premature grying
- Thicken hair and add valume
- Treat dandruff

### Method and Apparatus

Preparation of herbal hair oil used are the boiling method all herbal crud drungs

Are collected and proper magerment all used ingredients and heat the oil and step by step add the harbs and boil are the properly 30 min after and cool the oil and filter the oil .





**Apparatus :** -Measuring cylinder, beaker , china dish , tripod , spatula , filter paper , burettestand

### **Benifits of Herbal Hair Oil**

- It gives natural beauty to the hair. Vegetable oil contains vitamins and minerals nutrients that act ashair nourishment
- Hair oil helps prevent hair loss and reduces frizz. The ends of the hair need special care, andvegetable oil pampers them throughout the diet
- egular use of hair oils and hair oils cures the problem of premature grey hair
- Keeps scalp moist
- Improves hair growth
- Prevents dandruff
- Gives shine.
- To relieve stress
- For longer and stronger hair
- preservation of hair color
- maintaining hair health .

### **Ideal Characteristics of Hairs**

- Nourishing
- Moisturising
- Antioxidants properties
- Protect from damage
- Texture
- Density
- Porosity
- Elasticity
- Tenacity
- Formation

### **Various herbal oils are available in the market**

1. Amala Hair Oil
2. Coconut Hair oil
3. Bhringraj hair oil
4. Jasmine hair oil
5. Brahmi Hair Oil 6.Cantharidin hair oil7.Onion hair oil

### **EVALUATION PARAMETERS**

The prepared herbal oil was subjected to physical and biological evaluation.

**Saponification value:** 1 ml of oil was accurately weighed into a 250 ml Erlenmeyer flask and 10 ml of ethanol ether mixture (21) was added. 25 ml of 0.5 N alcoholic KOH solution was placed in this bottle. The flask was kept for 30 minutes and the flask in 0.5 N HCl. using a phenolphthalein indicator. Zero titration was also done without taking the oil (sample). The amount of KOH in mg that was calculate

**PH :** -Phof herhal oil was determined by PH meter. The most accurate cone method for measuring PH is a laboratory device called a probe and material, a PH meter. A glass electrode sensor through which a small voltage is passed. The Muter voltmeter measures the electronic impedance of the glass electrode and displays Pusits instead of volume. Typically, a pH meter must be calibrated with each use two standard solutions of known pH are prepared by dipping Meement into the probe liquid until the meter registers a reading.

**Viscosity :** - The viscosity of the herbs was determined with a viscometer Ostwaldand Take the specific gravity bottle, wash it with distilled water, dry in an oven for 15 minutes, cool, cap and weigh (a) Now fill the same specific gravity bottle with the sample and cap



and weigh again (b) Determine the weight of the sample per milli liter by subtracting the mass (ba).Susceptibility test: 1 cm of prepared plant cells was applied to the skin of the hands and exposed to sunlight for 4-5min.

**Acid Value** 10 ml of oil added 25 ml of ethanol and 25 ml of ether phenolphthelin was added as indicator and titrated with 0.1 m potassium hydroxide solution

N = number of ml of 0.1m KOH

W= wt of oil

#### **Organoleptic Property**

**Colour :-** detected by naked eyes

Colour - dark greenish brown

Sensitivity : - applied to the skin and exposed to the sunlight for 5 min to check to any irritation over skin

Arittiness - rubbed to the skin and observed

#### **Resul and Discussion: -**

Formulated herbal hair oil evaluated by various standard parameters and found acceptable in all limits the colour was found dark greenish liquid consistency easily spreadability with good extradability the PH viscosity and odar of formulated herbal hair oil

#### **CONCLUSION**

The utilization of herbal hair oil in the cosmetic enhanced many folds in personal hygiene and health care system. Herbal oil is one of the most well- recognized hair treatments. The use of different herbal materials which is having different benefits with good combination will give the great effect for hair. The herbal extracts and constituents chosen for the formulation of hair oil were reported to have hair growth,relaxation, anti-dandruff, hair thickening, and hair fall control properties, which when used together gives a synergistic effect in promoting healthy and shiny hair growth. The formulation was proven to be safe for human use. Hair oil formulation with good values of evaluation parameters show similar beneficial in maintaining good hair growth of the hair sturning grey hairs to black providing protection from dandruff and results lustrous looking hairs. Also hair oil will help in maintaining good growth of hair, not only that it also provides turning grey hair to black, protects from dandruff metres street It provides various coential nutrients required to muntan normal function of sebaceous glands and prom natural hair growth. Formulation was done and evaluated by means of various parameters like pH greenish brown organoleptic properties (colour, odour, sensitivity, sedimentation) acid value, viscosity, specific gravity, and stability test. At last, it can be concluded that the herbal hair oil formulations .

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