

## A Review article on poly herbal oil for hair growth

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### ABSTRACT

The Herbal cosmetics are nowadays widely used because of less side effect with better safety and security.

The present work was aimed to formulate polyherbal hair oil for general purpose using various Herb. Herbal hair oil was prepared from the hair growth. The formulated hair oil contains different Herbal plant which are traditionally utilized for hair growth plants used are allium Ceba juice, Garlic Extract, Jatamansi, Amla Fruits, Ashwagandha Root, Neem leaves Powder, Curry leaf, Aloe Vera Powder, Coconut Oil. The Formulated oil was evaluated and various parameters such as Viscosity, Saponification Value, pH, Acid Value were determined & reported in this article. The Formulation were also subjected to chromatographic determination and chemical test. To determine the presence of active constituent in the drug. Excellent result of hair growth were seen in formulation.

**KEYWORDS:** Hair oil, Herb, Cosmetics, Formulation & Evaluation.

### I. INTRODUCTION

Hair has a several useful function in the animal world.

It forms a protective cushion around the head & other delicate parts of the body. Hair oil are formulated to give the hair good shine & gloss. This is achieved by applying

a thin continuous film of oily material on the hair surface without causing stickiness. They are mainly oil of low viscosity. Many herbs are used in hair oil are Amla, Almond, Lemon, Hibiscus, etc.<sup>[1]</sup> Hair oil has more preferred as they promote hair growth, improve elegance of hair & prevent hair fall.<sup>[2]</sup>

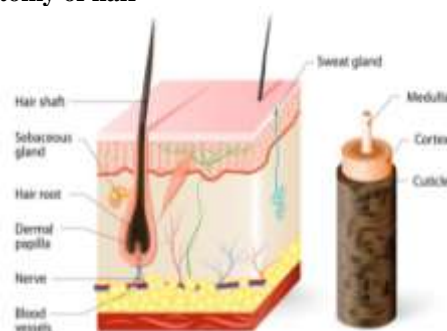
Herbal cosmetics have growing demand in the world market and are an invaluable gift of nature. There are a wide range of herbal cosmetics products to satisfy beauty regime. Adding herb in the cosmetics is very safe for our skin.<sup>[3-5]</sup>

Herbal hair oil is not only moisturizing scalp but also reverse dry scalp and hair condition. It provides numerous essential nutrients required to maintain normal function of sebaceous gland and promote natural hair growth. Keeping this point in consideration the present work was undertaken.

### Hair

Hair is a protein filament that grows from follicles found in the dermis, or skin. It is composed mainly of keratin, a tough and insoluble protein that also makes up nails and the outer layer of skin.

### Anatomy of hair



### Function of hair

The primary function of hair is to protect the skin from external factors such as sunlight, heat, and cold.

It also helps to regulate body temperature by insulating the scalp, and by extension, the rest of the body.

Hair can also play a role in social communication, serving as a way for people to express their identity, culture, and personality.

### Hair growth cycle

Once the hair growth cycle starts it should keep going and never stop and for certain type regions of the body.

Hair will continuously keep on growing throughout

life

The hair growth cycle consists of three phases.

### Anagen

### Catagen

### Telogen

### Anagen

During the anagen phase which lasts several years the hair follicle actively grows hairs. It is hair growth phases. Hair growth rate is about 3mm per week, or average 1 cm per month.

### Catagen

The catagen phases, which lasts only a few weeks, is a transitional phase in which the follicle shrinks and the hair stop growing.

### Telogen

During the telogen phase, which lasts several months, the old hair falls out and the follicle remains inactive until the next anagen phase begins. The cycle repeats throughout a person's life, with the length and thickness of hair varying based on genetics, age, and other factors.

### Hair growth cycle



### Collection of Plant Materials

The polyherbal hair oil was prepared by collecting various plant materials from herbal garden like, amla fruits., coconut oil, curry leaves, henna leaves, neem leaf, onion, alovera, hibiscus flower, almond oil, fenugreek seeds from herbal garden were procured from local market.

### 1. Amla

**Biological source:** Dried fruits of *Phyllanthus Emblica*

**Family:** Phyllanthaceae

**Use:** hair conditioner, treats scalp ailments, promotes hair growth, anti-dandruff, helps to get rid of follicle debris (due to vit c).



Fig:1

### 2. Curry Leaves

**Biological source:** Dried leaves of *Murraya koenigii*

**Family:** Rutaceae.

**Use:** Prevents hair fall and premature greying of hair.

Stimulates growth of hair follicles.



Fig:2

### 3. Coconut oil

**Biological source:** Oil derived from dried fruits of *Cocos nucifera*.

**Family:** Arecaceae.

**Use:** moisturiser, vehicle, stimulates hair growth by unclogging pores.



Fig:3

### 4. Henna

**Biological source:** Dried leaves of *Lawsonia inermis*

**Family:** Lythraceae.

**Use:** hair colorant, helps in hair growth, increase hair volume, prevent dandruff.



Fig:4

### 5. Fenugreek

**Biological Source:** *Trigonella foenumgraecum*.

**Family:** Fabaceae

**Use:** Increase hair growth thickness of hair, Hair smoothening, anti-inflammatory.



Fig:5

### 6. Almond Oil

**Biological name:** *Prunus delcis*

**Family:** Rosaceae

**Use:** Smoothen to the touch, It gives soft texture. Reduce and prevents symptoms of scalp psoriasis.



Fig:6

### 7. Neem

**Biological source:** Neem consists of fresh or dried leaves and seed oil of *Azadirachta indica* J. Suss.

**Family:** Meliaceae



Fig:7

### 8. Aloe

**Biological source:** Aloe is the dried juice collected by incision from the bases of the leaves of various species of *Aloe Barbadensis*.

**Family:** Asphodelaceae.

**Use:** It also acts as a great conditioner and leaves your hair all smooth and shiny. It promotes hair growth, prevents itching on the scalp, reduces dandruff and conditions your hair.



Fig:8

### 9. Hibiscus

**Biological name:** *Hibiscus rosa-sinensis*.

**Family:** Malvaceae

**Use:** Prevent hair loss by root-strengthening of hair, increase hair volume, prevents premature graying, dandruff, splits ends, dryness, breakage.



Fig:9



**Images of herbs parts –**



**Fig:10**

**Formulation of herbal oil**

Sr. No	Ingredient	F1	F2	F3
1	Amla	10 gm	10 gm	10 gm
2	Curry leaves	8 gm	8 gm	8 gm
3	Coconut oil	40 gm	40 gm	40 gm
4	Henna	2 gm	2 gm	2 gm
5	Fenugreek	10 gm	10 gm	10 gm
6	Almond oil	40 gm	40 gm	40 gm
7	Neem	5 gm	5 gm	5 gm
8	Aloe	3 gm	3 gm	3 gm
9	Hibiscus	2 gm	2 gm	2 gm

**Method and preparation of herbal oil**

The first step is to select the herbs that will be used in the formulation. The herbs should be chosen based on their medicinal properties and compatibility with each other.

The second step is the selected herbs are dried and grind into a fine powder. This helps to increase the surface area of the herbs, making it easier for the active compounds to be extracted.

Extraction of active compound. The powdered herbs are then mixed with a carrier oil such as coconut oil and almond oil; and heated to extract the active compounds.

The mixture is typically heated for several hours at a low temperature to ensure that all the active compounds are extracted.

Straining and filtering once the extraction process is complete, the mixture is strained and filtered to remove any solid particles or impurities.

**Storage**

The final step is to store the polyherbal oil in a clean, dry, and airtight container. The oil should be stored away from direct sunlight and heat.



**Evaluation of herbal hair oil**

The formulated herbal oil was evaluated for parameters like pH, acid value, saponification value, refractive index, viscosity, and organoleptic parameters.

**pH value**

pH of the herbal oil was detected using pH meter.

**Viscosity**

Viscosity was determined using Ostwald viscometer.

**Organoleptic property**

Skin irritation, color, odour, was determined manually. Oil was applied on the hand and exposed to sunlight for 5min to check for any irritation over skin.

**Sensitivity test**

The prepared herbal hair oil was applied on 1cm skin of hand and exposed to sunlight for 4-5min

**Acid value**

Preparation of 0.1 molar solution weighed 0.56g KOH pellets and dissolve in 100ml of distilled water and stirred continuously. The prepared 0.1 molar KOH solution was filled in the burette.

10ml of oil was added with 25ml of ethanol and 25 ml of ether. Phenolphthalein was added as indicator

and titrated with 0.1M potassium hydroxide solution,

Acid value= $5.61n/w$

Were,

$n$ = Number of ml of 0.1M KOH

$w$ = Weight of oil

### Saponification value

2gm of oil was accurately weighed and transferred into a 250ml iodine flask. 25ml of 0.5M alcoholic potassium hydroxide was added and boiled under reflux on a water bath for 30mins. Phenolphthalein was added as indicator and titrated against 0.5M HCL. Similarly blank was performed without the sample.

Saponification value;  $28.05(b-a)/w$

Where,

$W$ =weight in grams of the solution.

### Specific gravity

Take the specific gravity bottle, rinsed it with distilled water, dry it in oven for 15 min, cool, closed it with cap and weight it(a). Now fill the same specific gravity bottle with it (b). Determine the weight of sample per milli litre by subtracting the weight(b-a).

## II. RESULTS

The prepare poly herbal hair oil using the above-mentioned ingredients was evaluated for the following parameters and the results are tabulated.

The herbal hair oil was prepared from various herbs (table-1) and their importance in the formulation is presented in (table-2). The various parameter like sensitivity test, viscosity, pH, Saponification value and acid value of herbal hair oil was evaluated. Hence from the present investigation and biological screening establishes the efficacy of formulated herbal hair oil.

Sr.no	parameter	observation
1	Odor	characteristics
2	Color	
3	Specific gravity	0.9936
4	Viscosity	0.9348 poise
5	pH	6.9
6	Acid value	5.1

7	Saponification value	308.55
8	Irritation test	No irritation

Table -2

## III. CONCLUSION

We formulated effective organic poly herbal hair oil using several herbal ingredients which can treat various hair issues like hair falls, scalp psoriasis, lice treatment, alopecia, and dandruff.

It increases the hair growth and increase the thickness of hair, and reduce the hair falls.

It also works as antibacterial.

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