

To Formulate and Evaluate Hair Serum for Hair Problems

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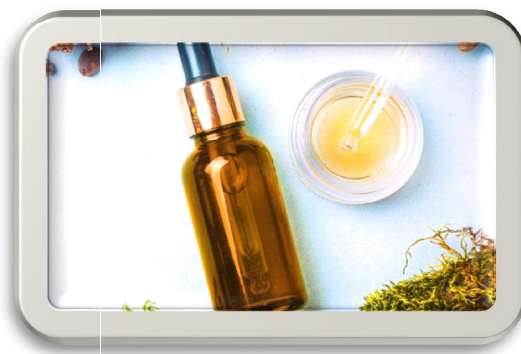
Abstract: *The youngish generation have begun to suffer from extreme hair loss problems due to numerous life-related changes similar as fatigue, anxiety, input of junk foods, use of different hairstyling/ coloring styles, etc. The loss of hair isn't temporary in utmost cases, but it results in alopecia. Numerous people suffering from hair loss are in hunt of multiple treatments due to extreme anxiety and pressure, from tradition to traditional and remedial mending to the use of minoxidil and finasteride. To ameliorate hair growth and to help hair loss, hair root activation is needed. Herbal dress are still generally used by average citizens because of smaller side goods and lesser protection and safety profile. The present study was intended to use different sauces to formulate herbal hair serum for general purposes.*

Cosmetics are becoming more high demand in daily life and it was used frequently by many of people per year. Mankind uses various products to enhance beauty and elegance to look young and charming. Cosmetics thus play a vital role in human life.

The main objective of the present work is to develop an herbal hair serum for general purpose (daily use) using various herbs with this evaluate the characteristics of cosmetic serum and to identify the best formulation of cosmetic serum. Three formulations of cosmetic serum (H1, H2 and H3) with different concentration of excipients have been developed. They were evaluated for its physical appearance, pH, homogeneity test, viscosity, spreadability test and stability test. All the parameters were found to be good and within the standards. Current research has revealed that herbal formulations are effective in enhancing hair consistency.

Keywords: hair loss

I. INTRODUCTION



The cost increase in worldwide living standard has created a rise in demand for cosmetic products. The importance of cosmetics has increased as many people want to stay young and attractive. Cosmeceuticals refers to the combination of the cosmetics industry with the pharmaceutical industry. Cosmetics companies produce cosmetics and pharmaceutical ones produce medicines. Cosmeceuticals are skincare products that combine cosmetics and medicines. Serum is one of the cosmetic products with very high concentration of active ingredient in their formula for providing intensive nutrition to the deeper skin layer and non-greasy finish product which suitable for skin.

Hair is simple in structure made of the root and shaft. The root is enclosed in the hair follicle, submerges into the skin in inclination and ends down to the bulb; while hair shaft is the part of the hair seen above the skin. Hair is made up of tough protein called keratin that forms the strength of hair. Keratin is a large molecule made up of smaller units called amino

acids, which join together to form a chain. Hair structure is made up of different layers and structure in humans and the scalp is an important element for hair growth. It is the skin composed of soft tissue layers that covers the cranium and area of the head where hair grows.

The scalp is constituted by numerous hair follicles and sebaceous glands. The pH of scalp is 5.5 and that of hair shaft is 3.671. The presence of sebaceous glands along with the cyclic changes that occur in the environment make it more susceptible to mycotic infections like

excessive dandruff, tinea capitis, scalp psoriasis, scalp folliculitis, head lice and even alopecia.

Hair grows from the follicle, or root, underneath the skin. The hair is 'fed' by blood vessels at the base of the follicle, which give it the nourishment it needs to grow. Between starting to grow and falling out years later, each hair passes through four stages: anagen, catagen, telogen and exogen. Another stage kenogen, has been recently realised. Every hair is at a different stage of the growth cycle. Over time, the length of the anagen stage decreases. Therefore, the hair may become weaker and thinner after each cycle. That is why it is important to ensure diet rich in specific nutrients to maintain normal, healthy hair growth. If hairs enter the resting phase too early, excess shedding and noticeable thinning of the hair can occur

PLANT PROFILE

Amla



Synonym: Emblica Officinalis

Kingdom: Plantae

Order: Euphorbiales

Family: Euphorbiaceae

Genus: Phyllanthus L

Species: Phyllanthus emblica

Geographical source: India, Southeast Asia, China, Iran, and Pakistan

Category : dementia, Alzheimer's disease and Parkinson's disease

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Fenugreek:

Synonym : fenogreco

Kingdom: Plantae

Order: Fabales

Family: Fabaceae

Genus: Trigonella

Species: T. foenum

Geographical source: South Eastern Europe and West Asia

Category: diabetes, menstrual cramps, fever, vomiting, appetite, hypercholesterolemia.



Flaxseeds:

Botanical name: *Linum usitatissimum*

Family – Linaceae

Synonym- Linseed, flaxseed

Biological source - It consists of the dried fully ripe seeds of *Linum usitatissimum* Linn.

Chemical constituents – alpha-linoleic acid (ALA), omega-3 fatty acid, lignans, etc

Uses – Anti-inflammatory, anti-oxidants, hair growth stimulator

Hibiscus:



Botanical name: *Hibiscus Rosa sinensis*

Family – Malvaceae

Synonym – Hibiscus, *Hibiscus mutabilis*, Roselle.

Biological source – It is obtained from the petals of flower of *Hibiscus Rosa sinensis*.

Chemical constituents – Vit. A, C, amino acids, alpha hydroxyl acids, etc.

Uses – Hair growth stimulator, anti-dandruff, colouring agents.

II. MATERIALS AND METHODS

Method 1

1. 5 g flaxseed in 50 ml distilled water
2. Continue heating until, clear viscous gel is formed
3. Filter the gel
4. To obtain gel 1 capsule of vitamin E and 1 ml of Castor oil
5. Mix with magnetic stirrer for 30 min
6. Then add Amla extract drop wise

Method 2

1. add 5 g Fenugreek seeds
2. in 20 ml distilled water boil for 5 min
3. filter the solution add about 5 g Orange peel powder and keep mixture at room temperature
4. add water to the solubility in order to make free from any lumps

Method 3

1. In beaker 2 g Hibiscus powder in 40 ml of water

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2. Heat the solution until color is obtained
3. Filter and store

Method 4

1. In beaker add prep 1 and 2 with continuous stirring
2. Then add Preparation 3 drop wise until suitable color is obtained.

Formulation

- **Formulation Table**

Ingredient	25 (ggm)
Amla	5 g
Fenugreek	5g
Orange peel	5g
Flax seeds	5g
Hibiscus	2ml
Castor oil	1ml
Vit E capsule	1
Sodium benzoate	1ml

III. EVALUATION OF HERBAL HAIR SERUM

Physical Appearance

The physical appearance, color, and feel of the set herbal hair serum are visually tested.

Homogeneity Test

A clean and dry object glass was smeared with the hair serum, and a cover glass was sealed. The appearance under the light of some coarse particle/homogeneity was investigated. Herbal hair serum was tested by visual examination for homogeneity and tested for some lumps, flocculates, or aggregates.

pH Test

Viscosity The pH cadence was calibrated using pH 4 and pH 7 buffer results. also, the electrode was soaked in the hair serum and left until the pH regularized after a many twinkles.

Viscosity

The density dimension was performed with spindle number 6 on a Brookfield viscometer (RVDV- II PRO). In the teacup, 50 ml of hair serum was placed, and the density was measured at colorful rpm, i.e., 10, 20, 50, 100.

Spreadability

Spreadability was measured by a resemblant plate process generally used to assess and measure the spreadability of semi-solid medications. One gram hair serum was pressed between two vertical plates of dimension 20 × 20 cm, the upper of which counted 125 g. The spread periphery was measured after 1 min. Spreadability was calculated using the following formula

$$S = M \times L / T$$

Where, S = Spreadability,
M = Weight in the visage (tied to the upper slide),
L = Length moved by the glass slide, and
T = Time(in sec) taken to separate the slides fully.

Stability

The herbal hair serum was kept for three months at two separate temperatures of 4 ± 2 °C and 30 ± 2 °C, with 65 RH. Compared with the original pH and density, the pH and density of the herbal hair serum were determined after three months.

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