

# A Review on Discovering the Natural Goodness of Herbal Hair Serum

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**Abstract:** The goal of this project was to create and evaluate a polyherbal hair serum enhanced with bioactive extracts to treat common hair issues like thinning hair, hair loss, and scalp health. The serum's composition includes a carefully chosen blend of botanical extracts with nourishing and hair-strengthening qualities. To guarantee the stability, effectiveness, and user safety of the serum, physicochemical testing, compatibility studies, and safety evaluations were carried out. Studies were conducted both in vitro and in vivo to assess the serum's capacity to promote hair growth, fortify hair follicles, and enhance the general quality of hair. The outcomes show that the created hair serum has potential as a natural remedy for improving hair health and taking care of hair-related problems.

## Aim

The study aims to effectively soften, smooth, and create silky hair to aid in hair loss and promote growth, while also shielding hair from environmental aggressors.

## Objective

- Creates herbal hair serum using various herbs.
- Serves as a substitute for synthetic hair serum.
- Performs preparation of herbal hair serum.
- Minimizes heat damage, reduces frizz, adds lustre to dull hair.
- Enhances hair condition and texture.

## INTRODUCTION

### Hair [12]

The diameter, color, texture, length, and form of hairs might vary. All mammals have hairs on them. The main objective is to regulate body temperature. It also aims to minimize friction and provide sun protection.

### Layers of hair

- A) The medulla is the central layer of the hair shaft. It is made up of large, loosely connected cells that may contain melanin.
- B) The cortex is the largest and most significant layer of the hair shaft. Huge establishes the texture of the

hair. Melanin is located here, and color changes are permanent in the cortex.

- C) Cuticle: The outer layer consists of overlapping scales. It preserves the cortex and determines the porosity of the hair in layers ranging from 2 to 11.
- D) Hair follicle: A follicle is a pocket of skin containing a hair bulb, germinal matrix, and papilla that grows deep into the dermis. The waste elements from the cell are returned to the papilla, located near the base of the hair.

- Arrector pili [3]

They are smooth muscular bundles that connect hair follicles. "Goose flesh" is the result of contraction, which causes the hair to stand straight and the skin surrounding it to rise.

- Sebaceous glands [3]

Sebaceous glands are made up of secretory epithelial cells that originate in the same tissue as hair follicles. They are primarily concentrated on the scalp, groin, axillae, and face. Sebum acts as a bactericidal and fungicidal agent, providing waterproofing as well as infection prevention.

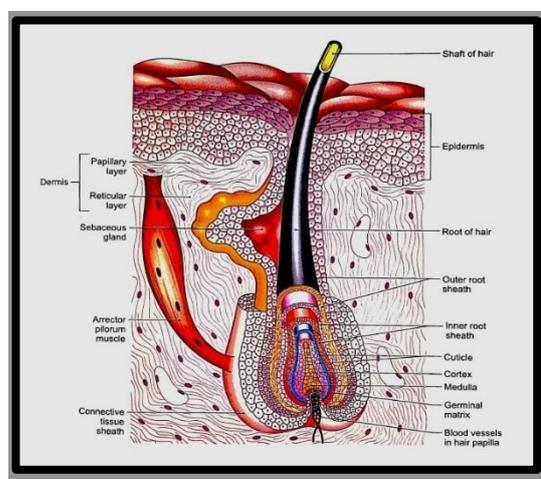


Fig.1: Hair [15]

Herbal cosmetics: [9, 10, 11]

- Herbal cosmetics combine approved cosmetic

elements with herbal components to achieve desired effects. The term "cosmetics" comes from the Greek word "cosmeticos," which means "to arrange or skillfully decorate."

- Initially associated with magic, religion, warfare, and hunting, cosmetics have evolved into medicine.
- Skin-lightening creams are a major component of cosmetics globally, guaranteeing flawless skin free of scars, blemishes, and age spots.
- Herbal cosmetics can be utilized to create treatments for difficult-to-treat conditions.
- The rise in plant-derived chemicals and biologically active components has resulted in a surge in herbal remedies for cosmetic disorders.
- Hair care products improve hair quality, simplify upkeep, and repair damage.
- Dandruff and other hair diseases are treatable.
- Hair has an aesthetic, societal, sexual, and psychological impact.
- When treated lightly, orange peel or citrus sinensis may provide the hair with a bright and smooth texture.

#### Hair Serum

A hair serum is a styling substance that covers the surface of hairs. Use serum on wet or dry hair; it can be used as a finishing touch on days without a hairdresser as well as a prestyling treatment. . The essential component of a person's body is hair. In order to provide deep skin layer nutrition and a nongreasy, skin friendly finish, serum is a type of cosmetic product that contains a very high concentration of active ingredients.

#### Highlights of Hair serum [2]

- Hair serum is a styling product applied to the hair's surface.
- It is a liquid hair care product with a higher viscosity than water.
- Hair serums can address various hair issues like unruly, dull, and dry hair.
- Depending on the product's recipe, hair serums can straighten hair, add gloss, or reduce frizz.

#### Advantages: [5,6]

- Herbal serums moisturize hair, protect from damage and frizz, add shine, shield from environmental factors.
- It improves hair luster.
- It can be used before or after heat styling.

#### Disadvantages:[7]

- Applying it on the scalp can lead to inflammation.
- Frequent use of hair serum can make hair unhealthy.

#### Application:[1]

1. They prevent free radical damage to the hair.
2. They prevent hair loss and scalp infections.
3. The treatment serum has antimicrobial properties.
4. Improves hair shine, and Ideal for frizzy hair.
5. Prevents hair loss.
6. Replenishes and revitalizes dry, brittle hair.

#### Objective

This study was designed to produce a herbal hair serum from the combination of several plants for use in hair. Amla and Guava can strengthen hair, prevent hair loss, reduce frizz or enhance shine by maintaining healthy hair development that causes gray hairs to turn black while providing the necessary nutrients for a proper functioning of sebaceous glands.

#### Problems of hair: [8]

The hair is a key component of the human body. It is accompanied by a number of issues, such as hair thinning, dullness, dandruff, conditioning, hair loss, and premature graying. The hair varies in colour, texture, length, diameter and shape.

1. Dandruff
2. Gray Hair
3. Hair Loss
4. Split Ends
5. Heat Damaged Hair
6. Oily and Greasy Hair

#### MATERIAL AND METHODS

##### 1. Guava seed oil:- [16]

Guava oil, rich in nutrients and Omega fatty acids, helps to revitalise dry hair and the scalp, promoting healthy, shiny hair. It prevents Dandruff and restores vitality for thick, glossy hair by applying it in shampoos and conditioners

- Biological Name: Psidium guajava linn
- Local Name: Guava
- Family: Myrtaceae
- Use: Antioxident property, Smoothness and shine.

##### 2. Amla [18]

Amla, also known as Indian gooseberry, is a potent medicinal plant used in traditional medicine for energy supplements, nutrients rich tonics and to treat inflammation, jaundice and diarrhoea.

- Biological Name: *Phyllanthus emblica*
- Local Name: Indian gooseberry
- Family: Phyllanthaceae
- Use: Rich in vitamin C & antioxidant nourish the scalp, promote hair growth

### 3. Tridax procumbens [13]

Tridaxprocumbens, a common nuisance plant or weed, is an ayurvedic medicine used for hair growth and works against gram positive bacteria. It contains tannins, flavonoids and saponins which inhibit the growth of bacteria.

- Biological Name *Tridax procumbens*
- Local Name: Coat buttons
- Family: Asteraceae
- Use :- Antimicrobial, maintain and protect scalp, health prevent infection

### 4. Grape Seed Oil [14]

A powerful natural remedy for brittle, weak hair and loss of hair is grape seed oil extracted from coldpressed grapes. It's rich in nutrients, antioxidants and emollients that help to increase hair growth and prevent balding. By reducing irritation of the scalp and elimination of dandruff, grape seed oil also has an effect on dermatitis. It increases the synthesis of linoleic acid and restores hair strength and shine thanks to a high concentration of vitamin E.

- Biological Name: *Vitis vinifera* linn
- Local Name: Draksh
- Family: Vitaceae
- Use :- lightweight, easily absorbed, strengthen hair shaft, prevent split ends

### 5. Aloe vera [4]

Aloe vera, a plant with antimicrobial and antioxidant properties that reduce the risk of chronic diseases such as diabetes, heart disease or cancer, has been known to be useful for therapeutic, cosmetic and skin care benefits since old times.

- Biological Name: *Aloe Barbadenis* mill
- Local Name: Korphad
- Family: Aloaceae
- Use: Moisturizing, hydrate scalp, shine.

### 6. Rose Water [17]

In cosmetics, ointments and moisturizers rose water is added as a fragrance component. In India, it is also used to treat dandruff, oiliness and psoriasis as a mild astringent for weddings. It's also a very popular hair product to boost shine and tame frizz.

### 7. Vitamin E Capsules [17]

There are 8 compounds in vitamin E, which include tocopherol and tocotrienol derivatives. It contains alpha, beta, gamma, and delta isomers of these compounds. By hydration, reduction of breakage and protection from harm, vitamin E oil helps to maintain hair health. It's got antioxidants that encourage the growth of hair

#### Methods

Guava seeds Oil:-Guava seeds were collected from the garden. The clevenger method is used to extract oil from seeds.

Grape seeds Oil:-Gather the grape seed from the market. Use a clevenger to extract the oil from the seeds.

Tridax procumbens:- Take the Tridax procumbens from the garden. The leaves were sun-dried and macerated to produce powder.

Aloe vera: - Collect aloe vera from the garden. The gel can be separated from the Aloe vera gel by boiling it.

Amla pulp: - Collect amla fruit from the garden. Separate the pulp and obtain an extract with the soxhlet technique.

#### Predation of serum

1. Clean all the glassware and dry them properly as per SOP.
2. Measure the accurate quantity of aloe vera, transfer it in beaker.
3. Mix required quantity vitamin E in aloe vera.
4. Now mix rose water to the above mixture of aloe vera and vitamin E.
5. After stirring for few minutes, heat the prepared solution for few minutes.
6. Add few drops of Guava seed oil and Grape seed oil
7. Add few ml Amla extract and tridax procumbens solution
8. After that stir the preparation with the help of magnetic stirrer.
9. Transfer the preparation in measuring cylinder and adjust the final volume to 30ml.
10. Transfer final solution into container.

## RESULTS

This study demonstrates the use of polyherb extracts like Amla, Guava, Tridax, Aloe Vera, Grape seed in various compositions for hair and scalp health benefits. The formulation's texture was smooth and lubricative, and the pH was within the permissible range. For the first time, herbal hair serum resulted in good hair growth and weight, with very little discomfort.

## CONCLUSION

A polyherbal hair serum with bioactive ingredients has shown promising potential for treating common hair issues. Its physicochemical properties, compatibility with different hair types, and safety when applied to the scalp have been proven. Research in vitro and in vivo supports its effectiveness in boosting hair health, strengthening follicles, and encouraging growth. Further validation and refinement may be necessary for commercialization.

## SUMMARY

The experiment aimed to create and evaluate a polyherbal hair serum with bioactive extracts to address hair loss, thinning hair, and scalp health. The serum was formulated with botanical extracts known for their nourishing and hair-strengthening properties. The serum's stability, effectiveness, and user experience were assessed through a battery of experiments, ensuring compatibility with various hair types and safety for scalp use.

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