

# Review on Formulation and Evaluation of Herbal Hair Serum

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**Abstract:** Hair growth elongation was subsequently photographed. Cosmetics are being employed on an oversized scale for its various utilities in day-to-day life. Mankind uses various products to boost beauty and elegance to seem young and charming. Now a days, herbal cosmetic are widely used thanks to the idea that they need fewer side effects and better safety together with a extended time period. In the mammalian system, the follicle is understood to be the foremost significant organ that determines appearance, gender distinction, give violent temperature protection, and plays an element in tone- defense. The youngish generation have begun to suffer from extreme hair loss problems because of numerous life- related changes similar as fatigue, anxiety, input of junk foods, use of different hairstyling/ coloring styles, etc.

**Keywords:** Stress, Hair growth, Hair loss , serum, Hormones.

## I. INTRODUCTION

Hair is an epidermal derivative which is one in all the vital parts increasing the general elegance of the body. Hair fall, dandruff, lice, spilt ends, grey hair are few problems committed hair faced by people in general.<sup>[1]</sup> A hair incorporates a root, a shaft and a tip.<sup>[2]</sup> In ageing person, melanin, which is that the pigment accountable for colour of hair, stops working and hair turns white.<sup>[4]</sup> Many cosmetics are available nowadays to resolve these problems and toilet article is one amongst them.<sup>[5]</sup> because of severe anxiety and stress, those that suffer from hair loss seek several remedies ranging from folklore to traditional to spiritual healing to use of minoxidil and finasteride. Hair root activation is critical to extend hair growth and to stop hair loss<sup>[5]</sup>. In human, hair has an aesthetic function impacting our appearance. Today, it's social, sexual and mental importance, Changes within the pattern of the hair, as an example, going bald, hair abundance or variety change may adversely influence the boldness of the individuals.<sup>[6]</sup>

### 1.1 Advantages

- Herbal serums impart natural sheen to your hair while its rich hydrating properties protect your hair from external damage caused by heat or the environment.
- Serums are known to lock down the moisture and moisturise hair, making it healthy while ensuring it doesn't look as brittle and feels smoother.

### 1.2 Disadvantages

- Regular use and over-application can make the hair unhealthy and ultimately
- After several days of continued use, this build-up weights down your hair, making it appear flat and dully.

## II. MATERIAL AND METHOD





### 2.1 Aloe vera Powder

Serums are typically water-based formulas. Since, aloe also has high water content, and is of course rich in vitamins and antioxidants—it can rejuvenate your skin and improve its texture too. Regular use of burn plant as a serum can make your skin radiant and youthful.

### 2.2 Rose Petals

Rose petals are highly beneficial for the hair, especially when blended with other therapeutic ingredients like oil, rosemary oil, and honey. It deeply nourishes and moisturizes the skin while improving hair quality and making them strong.

### 2.3 Black Pepper

Black pepper is rich in water-soluble vitamin that helps cleanse your hair, remove the dead skin and thereby keep dandruff free. The antioxidants help the scalp get enough nourishment that's necessary for moisturizing your scalp and for balanced sebum production. Pro tip: you'll be able to buy our Scalp oil which contains black pepper.

### 2.4 Amla Powder

One broadly recognises Amla powder as a hair growth remedy. The vitamin E content in Amla enhances blood circulation to the scalp, providing hair follicles with a fresh oxygen supply. Applying Amla powder topically may help scalp skin regeneration necessary for healthy locks.

### 2.5 Cedarwood Oil

Used in hair, Cedarwood Oil is understood to cleanse the scalp, removing excess oil, dirt, and dandruff. It enhances circulation to the scalp and tightens the follicles, which helps stimulate healthy growth and thereby helps reduce thinning by slowing hair loss.

### 2.6 Formulation Table

| Ingredients        | Quantity taken | Role                                |
|--------------------|----------------|-------------------------------------|
| Aloe vera powder   | 5ml            | Repair dead skin on the scalp       |
| Rose petal extract | 5ml            | Antidandruff, conditioner           |
| Black pepper       | 1ml            | Hair growth stimulant               |
| Cedarwood Oil      | 0.5ml          | Fungal infection, depression        |
| Amla powder        | 10ml           | Increase blood circulation in scalp |
| Methyl paraben     | 0.42gm         | Preservative                        |
| Distilled water    | Qs             | vehicle                             |

### 2.7 Collection of Plant

Part For the medication of herbal hair serum, colorful factory accoutrements were collected viz., aloe vera powder, rose petal extract, black pepper, Amla powder extract from the medicinal factory Garden of Samarth Institute of Pharmacy, Belhe, Junnar, Pune, India.

**A. Formulation**

1. All fresh herbs, aloe vera powder, rose petal extract, black pepper, Amla powder extract similar as were specifically counted and allocated in 100 ml of water.
2. The content appertained to over were boiled for 15 min.
3. They were permitted to cool after 15 twinkles of boiling and also filtered.
4. Cedarwood oil were added to filtrate.
5. Subsequently, the set serum was kept in a spray bottle.

**III. EVALUATION OF HERBAL HAIR SERUM**

1. **Physical Appearance:** The physical appearance, color, and feel of the set herbal hair serum are visually tested.
2. **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.
3. **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
4. **Skin Irritation Test :-**It is carried out by applying the serum on skin and tested for any redness or itching after 2 hours.
5. **Sensitivity Test:-** It is carried out by applying the serum on the skin and is exposed to sunlight and tested for any rashes or itching after 10 minutes.
6. **Spreadability:** Spreadability was measured by a resemblant plate process generally used to assess and measure the spreadability of semisolid 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.
7. **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

**IV. CONCLUSION**

Results have shown that herbal hair serum provides colorful essential nutrients demanded to save lots of the correct function of the sebaceous glands and support the expansion of natural hair. within the particular hygiene and health care system, the employment of herbal cosmetics has changed by several crowds. thus, the herbal cosmeceutical individual care or particular health care assiduity, which is really concentrating and paying redundant care on the merchandise of herbal- grounded cosmetics, encompasses a considerable clamor. The prepared formulation was within the desirable pH range. The formulations doesn't produced any redness or itching during the testing period. The formulations was found to possess good anti-bacterial activity.

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**REFERENCES**

- [1]. Ansari S.H. and Ali M. Hair care and herbal drug. Indian J Nat Prod. 13(1): 3-5, 1997.
- [2]. Starico R.G. The melanocytes and the hair follicle, J. Invest. Dermatol, 35, p. 185-194, 1960
- [3]. Pinkus H. Sebaceous cysts are modified cysts, J. arch. Dermatol, 99: 544-555, 1969.

- [4]. Rathi V., Rathi J.C., Tamizharasi S. and Pathak A.K. Plants used for hair growth promotion: A review. *Phcog Rev.* 2(3): 165-167,2008
- [5]. Robbins CR (2013) *Chemical and Physical Behavior of Human Hair*. 4th edn, New York, USA. 5. Flores A, Schell J, Krall AS, Jelinek D, Miranda M, et al. (2017) Lactate dehydrogenase activity drives hair follicle stem cell activation. *Nature Cell Biology* 19(9): 1017-1026.
- [6]. Dr.Aijaz A Sheikh, Dr.Subhash V Deshmane, Dr.kailash R Biyani, Dr.Md.Rageeb Md. Usman ; “A Textbook of Cosmetic Science” Pg No. 35-38
- [7]. Clavaud, C., Jourdain, R., Bar-Hen, A., Tichit, M., Bouchier, C., Pouradier, F., El Rawadi, C., Guillot, J., Ménard-Szczebara, F., Breton, L., Latgé, J. P., & Mouyna, I. (2013). Correction: Dandruff Is Associated With Disequilibrium in the Proportion of the Major Bacterial and Fungal Populations Colonizing the Scalp. *PLoS ONE*, 8(10), 10.1371/annotation/bcff4a59-10b7-442a-8181-12fa69209e57.
- [9]. Myagmar K, Lkhagvasuren E, Semchin M. Hair Growth Promoting Effect of *Urticadioica* L. *CAJMS* 2018;4:187-193.
- [10]. Pekmezci E, Dundar C, Turkoglu M. Proprietary Herbal Extract Downregulates the Gene Expression of IL-1 $\alpha$  in HaCaT Cells: Possible Implications Against Nonscarring Alopecia. *Med Arch.* 2018;72(2):136-
- [11]. Nahata A, Dixit VK. Ameliorative effects of stinging nettle (*Urticadioica*) on testosterone-induced Prostatic hyperplasia in rats. *Andrologia.* 2012;44Suppl 1:396-409
- [12]. Abbas AN. Ginger (*Zingiberofficinale* (L.) Rosc) improves oxidative stress and trace elements status in Patients with alopecia areata. *Niger J ClinPract* 2020; 23(11): 1555-60.
- [13]. Wijaya WH, Mun'im A, Djajadisastra J. Effectiveness test of fenugreek seed (*trigonellafoenum-graecum* l.) Extract hair tonic in hair growth activity. *Int J Curr Res* 2013; 5(11): 3453-60.
- [14]. Ali BH, Blunden G. Pharmacological and toxicological properties of *Nigella sativa*. *Phytother Res* 2003; 17(4): 299-305.
- [15]. Majdalawieh AF, Fayyad MW, Nasrallah GK. Anti-cancer properties and mechanisms of action of Thymoquinone, the major active ingredient of *Nigella sativa*. *Crit Rev Food Sci Nutr* 2017; 57(18): 3911-28.
- [16]. Yousefi M, Barikbin B, Kamalinejad M, et al. Comparison of therapeutic effect of topical *Nigella* with Betamethasone and Eucerin in hand eczema. *J Eur Acad Dermatol Venereol* 2013; 27(12): 1498-504.
- [17]. Halligudi N. Pharmacological properties of Flax seed: A Review. *Hygeia J D Med* 2012; 4(2): 70-7. Manjula D, Josephine JLL, Kumari P, Banu S. Formulation and evaluation of flaxseed hair gel: A natural hair Tamer. *Int J Res Pharm Chem* 2018; 8(3): 487-91.
- [18]. Saleem U, Sabir S, Ahmad B. Protective role of *Nigella sativa* in chemotherapy induced alopecia. *Bangladesh J Pharmacol* 2017; 12: 455-62.
- [19]. Zhang Q. Development of citrus peel ethanolic extract shampoo. *IOP Conf Ser: Mater Sci Eng* 2019; 1-6.
- [20]. Erukainure OL, Ebuehi OA, Iqbal Chaudhary M, et al. Orange peel extracts: Chemical characterization, Antioxidant, antioxidative burst and phytotoxic activities. *J Diet Suppl* 2016; 13(5): 585-94.
- [21]. Zhang Q. Development of citrus peel ethanolic extract shampoo. *IOP Conf Ser: Mater Sci Eng* 2019; 1-6.