

A COMPREHENSIVE REVIEW ON HERBAL HAIR SERUM

Andhale Sham Raosaheb¹, Katkar Vaishnavi², Garje Sanjay³, Sayyed Gaffar⁴

^{1,2,3,4}Sajvpms College of Pharmaceutical Science and Research Centre Kada, India.

ABSTRACT

That's super interesting! It's great to see that herbal cosmetics are gaining popularity because people believe they have fewer side effects. Making an herbal hair serum sounds like a fantastic idea! I'm curious to know which herbs you're using in the serum. Could you share more details about the formulation. You're spot on! The hair follicle is a major player in determining our looks and providing protection. It's a shame that many young people are dealing with excessive hair loss these days. It can be really tough. Have you come across any herbal remedies or treatments that might help with hair loss. Current research has revealed that herbal formulations are effective in enhancing hair consistency

Keywords: Cosmetic, hair, herbs, formulation, effective, stress Hair growth, serum, etc.

1. 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. There are different types of hair serums for different hair goals. Depending on the products formula, a hair serum might reduce frizz, add shine, or straighten the hair as a cutaneous derivative, plays a pivotal role in enhancing the overall attractiveness of the body. Nevertheless, individuals frequently experience challenges such as hair loss, flakiness, head lice, split ends, and graying hair. A strand of hair consists of a follicle, a shaft, and an apex.

Hair is an epidermal derivative which is one in all the vital parts increasing the general elegance of the body. Hair fall, dandruff, lice, split ends, grey hair are few problems committed hair faced by people in general.

A hair incorporates a root, a shaft and a tip. In ageing person, melanin, which is that the pigment accountable for colour of hair, stops working and hair turns white.

Many cosmetics are available nowadays to resolve these problems and toilet article is one amongst them. 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.

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.

Highlights of Hair Serum:

1. Frizz control: Hair serum helps to tame frizz and flyaways, providing a smoother and sleeker look
2. Shine enhancement: It adds a glossy finish to the hair, boosting its natural shine and luster
3. Heat protection: Many serums contain ingredients that protect hair from the damage caused by heat styling tools like blow dryers and straighteners
4. Moisture retention: Hair serum seals in moisture, keeping hair hydrated and preventing dryness and brittleness.
5. Detangling: It helps to detangle hair strands, making it easier to comb through and style.
6. Split end prevention: Regular use of hair serum can help to reduce the occurrence of split ends, keeping hair looking healthier
7. UV protection: Some serums offer protection against UV rays, shielding hair from sun damage and color fading.
8. Lightweight formula: Hair serums are typically lightweight and non-greasy, ensuring that they do not weigh down the hair or leave a residue
9. Improved manageability: By smoothing the hair cuticle, hair serum makes hair more manageable and easier to style
10. Overall hair health: Hair serum can nourish and strengthen hair, promoting overall hair health and vitality.

Advantages.

1. Herbal serums are designed to enhance the natural sheen of your hair while providing hydration to protect it from damage caused by heat or environmental factors.
2. Serums are recognized for sealing in moisture and nourishing hair, promoting its health while preventing it from appearing brittle and enhancing smoothness.

3. Managing frizz and dryness.
4. Amplifying the hair's inherent appearance.
5. Safeguarding against harm.

Heat Protection: Some hair serums contain heat protectants that help shield the hair from the damaging effects of heat styling tools like flat irons and blow dryers.

Disadvantages.

- 1. Buildup:** Overuse of hair serum can lead to product buildup on the scalp and hair strands, causing them to feel heavy, greasy, or dull. This buildup may also attract dirt and pollutants, leading to an unclean scalp environment
- 2. Weighted Down Hair:** Some hair serums contain ingredients that can weigh down fine or thin hair, making it look flat and lifeless.
- 3. Silicone Content:** Many hair serums contain silicone-based ingredients, which can provide temporary smoothing effects but may also create a barrier on the hair shaft that prevents moisture from penetrating. This can lead to dryness and potential long-term damage, especially if the silicone is not properly washed out.
- 4. Potential Allergic Reactions:** Individuals with sensitive skin or allergies may experience irritation or allergic reactions to certain ingredients commonly found in hair serums. It's essential to patch test new products before applying them to the entire scalp or hair.
- 5. Dependency:** Regular use of hair serum may create a dependency, where the hair becomes reliant on the product for manageability and appearance. This can make the hair appear lackluster or unruly when the serum is not applied.
- 6. Cost:** High-quality hair serums can be expensive, especially if they contain premium ingredients or specialized formulations. This cost can add up over time, particularly for those who use the product frequently.
- 7. Impact on the Environment:** Some hair serums contain synthetic chemicals that can be harmful to the environment, especially if they are not biodegradable or if their production contributes to pollution.

Method of Herbal Hair Serum

1. Ensure all glassware is thoroughly cleaned and dried according to standard operating procedures (SOP).
2. Accurately measure the desired amount of aloe vera and transfer it into a beaker.
3. Combine the appropriate quantity of vitamin E with the aloe vera.
4. Blend rose water into the aforementioned mixture of aloe vera and vitamin E.
5. Stir the mixture for several minutes, then heat it for a brief period.
6. Introduce a few drops of almond oil.
7. Utilize a magnetic stirrer to thoroughly mix the preparation.
8. Transfer the mixture into a measuring cylinder and adjust the final volume to 30ml.
9. Pour the final solution into a container.

Herbal Ingredients

1. Aloe Vera gel

Aloe vera has long been used for treating hair loss. It also soothes the scalp and conditions hair. It can reduce dandruff and unblock hair follicles that may be blocked by excess oil. You can apply pure aloe vera gel to your scalp and hair a few times per week.



Fig 1: Aloe vera gel.

2. Vitamin E

Vitamin E-rich oil can help replace that protective layer and bring back shine. Oil in general also helps seal out moisture, reduce breakage, and protect the hair from damage.



Fig2: Vitamin E.

3. Rose water

Rose water is a mild astringent which may help to reduce oiliness and dandruff. It has anti-inflammatory properties, which may make it beneficial for certain scalp conditions, like psoriasis and eczema. Many women with curly hair swear by rose water's ability to calm down frizz and add shine



Figure 3: rose water

4. Almond oil

The nourishing oil can soften and strengthen your hair. It's rich in vitamin B-7, or biotin, so almond oil helps to keep hair and nails healthy and strong. It can also help protect your hair from sun damage, with a natural SPF 5. You can use almond oil as a scalp treatment.



Figure 4: Almond oil

Evaluation Herbal Hair Serum

1. Physical Appearance: Physical appearance was evaluated by observation on the texture, color and smell of the formulated cosmetic serum.
2. PH: The pH test will be determined by using Digital pH meter. Dipper of digital pH will be deep into the sample of serum formulation and the pH value will be recorded. The pH of the formulation should having acidic pH as the skin is having an acidic pH of around 4–6.
3. 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.
4. Viscosity: Viscosity of the formulation is determined by Brookfield Viscometer at 100rpm, using spindle type model S6 4.5 ml of the serum. The serum will placed in a big mouth container with the spindle dipped in it for about 5 minutes before the measurement.
5. Spreadability Test: Spreadability was measured by a parallel plate process typically used to assess and measure the spreadability of semisolid preparations. One gram hair serum was pressed between two horizontal plates of dimension 20× 20 cm, the upper of which weighed 125 g. The spread diameter was measured after 1 min. Spreadability was calculated using the following formula: $S = M \times L / T$
Where, S= Spreadability, M= Weight in the pan (tied to the upper slide), L= Length moved by the glass slide, and T = Time (in sec) taken to separate the slides completely
6. Stability Test: The herbal hair serum was kept for three months at two separate temperatures of $4 \pm 2^\circ\text{C}$ and $30 \pm 2^\circ\text{C}$, with 65% RH. Compared with the original pH and viscosity, the pH and viscosity of the herbal hair serum were determined after three months.

2. CONCLUSION

All the parameters showed that they are within the limits and since all the ingredients added have many advantages, this hair serum will help in maintaining good growth of hair, turning grey hair to black, essential nutrients needed to preserve the proper function of the sebaceous glands and support the growth of natural hair. In the personal hygiene and health care system, the use of herbal cosmetics has changed by several folds. Therefore, theherbal cosmeceuticals individual care or personal health care industry, which is actually concentrating and paying extra care on the production of herbal-based cosmetics, has a considerable glamour

3. REFERENCE

- [1] Patni P., Varghese D., Balekar N. and Jain D.K. Formulation and evaluation of herbal hair oilFor alopecia management. *Planta Indica*. 2(3): 27-30, 2006
- [2] Adirajan N., Ravikumar tential of Hibiscus rosa-Sinensis Linn. *J Ethanpharm*. 88: 235-239, 2003
- [3] Purwal, L., Gupta, S. B. N. and Pande, M.S. Development and Evaluation of Herbal Formulations T., SShanmugasunda Ram N. and Babu M. In vivo and in vitro evaluation of hair for hair growth, *E- Journal of Chemistry*, Vol-5, NO-1, 34-38,2008.
- [4] Gloor M, Fichtler C. The basic of protein chemistry, *J. Cosmetology*, 3, p.193-194,1973.
- [5] 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
- [6] Price VH. Treatment of hair loss. *N Eng. J Med*. 1999;341(13):964–973. Doi:10.1056/NEJM199909233411307
- [7] Sinclair R. Male pattern androgenetic alopecia. *BMJ*. 1998;317 (7162):865–869. Doi:10.1136/bmj.317.7162.865
- [8] Orasan MS, Roman II, Coneac A, Muresan A, Orasan RI. Hair loss And regeneration performed on animal models. *Clujul Med*. 2016;89 (3):327.
- [9] Abell E. Embryology and anatomy of the hair follicle. *Dis Hair Growth*. 1993;1–19.
- [10] Mella JM, Perret MC, Manzotti M, Catalano HN, Guyatt G. Efficacy And safety of finasteride therapy for androgenetic alopecia: A systematic review. *Arch Dermatol*. 2010;146(10):1141–1150. Doi:10.1001/archdermatol.2010.256
- [11] Rogers NE, Avram MR. Medical treatments for male and female Pattern hair loss. *J Am Acad Dermatol*. 2008;59(4):547–566.
- [12] Mella JM, Perret MC, Manzotti M, Catalano HN, Guyatt G. Efficacy And safety of finasteride therapy for androgenetic alopecia: A systematic review. *Arch Dermatol*. 2010;146(10):1141–1150. Doi:10.1001/archdermatol.2010.256

- [13] Rogers NE, Avram MR. Medical treatments for male and female Pattern hair loss. *J Am Acad Dermatol.* 2008;59(4):547–566.
- [14] Complementary A. Or Integrative Health: What’s in a Name? NCCIH. National Center for Complementary and Integrative Health NCCIH; 2016.
- [15] Hosking A-M, Juhasz M, Mesinkovska NA. Complementary and Alternative treatments for alopecia: a comprehensive review. *Skin Appendage Disorders.* 2019;5(2):72–89. Doi:10.1159/000492035
- [16] Soleymani T, Shapiro J. The Infatuation With Biotin Supplementation: is There Truth Behind Its Rising Popularity? A Comparative Analysis of Clinical Efficacy versus Social
- [17] Popularity. *J Drugs Dermatol.* 2017;16(5):496–500.
- [18] Food U, Administration D The FDA warns that biotin may interfere With lab tests: FDA safety communication.2018.
- [19] Dawber R, Rundegren J. Hypertrichosis in females applying minoxidil Topical solution and in normal controls. *J Eur Acad Dermatol Venereol.* 2003;17(3):271–275. Doi:10.1046/j.1468-3083.2003.00621.x
- [20] Friedman ES, Friedman PM, Cohen DE, Washenik K. Allergic contact Dermatitis to topical minoxidil solution: etiology and treatment. *J Am Acad Dermatol.* 2002;46(2):309–312. Doi:10.1067/mjd.2002.119104
- [21] Ansari S.H. and Ali M. Hair care and herbal drug. *Indian J Nat Prod.* 13(1): 3-5, 1997.
- [22] Starico R.G. The melanocytes and the hair follicle, *J Invest Dermatol*, 35, p.185-194, 1960
- [23] Pinkus H. Sebaceous cysts are modified cysts, *J. arch. Dermatol*, 99:544-555, 1969.
- [24] 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
- [25] 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.
- [26] 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
- [27] Clavaud, C., Jourdain, R., Bar-Hen, A., Tichit, M., Bouchier, C., Pouradier, F., El Rawadi, C., Guillot, J., Ménard-Szczepara, F., Breton, L., Latgé, J. P., & Mouyna, I. (2013). Correction: Dandruff Is Associated
- [28] 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.
- [29] Myagmar K, Lkhagvasuren E, Semchin M. Hair Growth Promoting Effect of *Urticadioica* L. *CAJMS* 2018;4:187-193.
- [30] Pekmezci E, Dundar C, Turkoglu M. Proprietary Herbal Extract Downregulates the Gene Expression of IL1 α in HaCaT Cells: Possible Implications Against Nonscarring Alopecia. *Med Arch.* 2018;72(2):136-
- [31] Nahata A, Dixit VK. Ameliorative effects of stinging nettle (*Urticadioica*) on testosterone-induced Prostatic hyperplasia in rats. *Andrologia.* 2012;44Suppl 1:396-409
- [32] Abbas AN. Ginger (*Zingiberofficinale* (L.) Rosc) improves oxidative stress and trace elements status in Patients with alopecia areata. *Niger J Clin Pract* 2020; 23(11): 1555-60.
- [33] 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.
- [34] Ali BH, Blunden G. Pharmacological and toxicological properties of *Nigella sativa*. *Phytother Res* 2003; 17(4): 299-305.
- [35] 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.
- [36] 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.
- [37] Halligudi N. Pharmacological properties of Flax seed: A Review. *Hygeia J D Med* 2012; 4(2): 70-7. Manjula D, Josephine JLJ, 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.
- [38] Saleem U, Sabir S, Ahmad B. Protective role of *Nigella sativa* in chemotherapy induced alopecia. *Bangladesh J Pharmacol* 2017; 12: 455-62.
- [39] Zhang Q. Development of citrus peel ethanolic extract shampoo. *IOP Conf Ser: Mater Sci Eng* 2019; 1-6.
- [40] 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.