

A Comprehensive Review on Herbal Hair Conditioners for Nourishment and Repair

Kamlesh Kumar¹ Sevak Ram¹, Chetan Kumar¹ Jitendra Sahu¹, Praveen kumar¹, Gyanesh Kumar Sahu^{1*}

1. Rungta Institute of Pharmaceutical Sciences & Research, Kohka, Kurud, Bhilai

ABSTRACT

The growing demand for natural and environmentally friendly hair care products has driven the creation of herbal hair conditioners, blending the advantages of traditional plant-based ingredients with contemporary hair care needs. These conditioners are made with plant extracts, essential oils, and other natural elements that nourish, hydrate, and protect the hair, all while avoiding the harsh chemicals commonly found in conventional products. Ingredients such as aloe vera, henna, argan oil, coconut oil, and chamomile are often included, known for their ability to support hair health, boost shine, minimize frizz, and improve scalp conditions.

Herbal conditioners offer several advantages over synthetic alternatives, including their gentleness on the scalp and hair, compatibility with different hair types, and reduced risk of irritation or allergic reactions. These products are also typically free from parabens, sulfates, and artificial fragrances, catering to the increasing demand for clean and sustainable beauty solutions. This abstract underscores the rising significance of herbal hair conditioners in the beauty industry, highlighting their ability to deliver effective care while meeting consumer preferences for organic, cruelty-free, and eco-friendly products.

Keywords- Hair Conditioner, Hair, Scalp

INTRODUCTION

Herbal hair conditioners are natural hair care products crafted with plant-based ingredients, essential oils, and extracts to enhance hair texture, strength, and appearance. Unlike traditional conditioners that may contain harsh chemicals or synthetic fragrances, herbal conditioners focus on nourishing and hydrating the hair using the healing properties of plants. These conditioners offer a gentle yet effective solution for moisturizing and maintaining healthy hair while also promoting scalp health.

Herbal products have gained significant popularity in recent years, with 20-30% of the population using them. These products are complex blends of organic compounds sourced from various parts of plants, including leaves, flowers, stems, bark, and seeds. India, with its wealth of medicinal plants, is encouraged by the World Health Organization (WHO) to promote these products due to their low cost and safety. While herbal hair conditioners are often more effective and safer than synthetic alternatives, they may not be as popular with consumers. A more proactive approach to increasing the popularity of herbal shampoos could involve shifting consumer expectations, focusing on safety and efficacy. Formulators should educate consumers about the potential dangers of synthetic detergents and chemical additives in traditional shampoos.

Herbal conditioners commonly contain ingredients like aloe vera, hibiscus, rosemary, lavender, neem, and henna, all of which are recognized for their ability to strengthen, repair, and promote hair growth. These ingredients work by enhancing hair elasticity, reducing frizz, detangling strands, and adding a natural shine to the hair.

HAIR ANATOMY

Hair is a complex system with both chemical and physical prop

erties. It is made up of various morphological elements that work together as a unit. Every hair consists of two parts: the visible shaft and the root. The shaft is the part of the hair that extends above the skin, while the root is embedded within the skin, extending into its deeper layers. The root is encased by hair follicles, which are structures made of skin and connective tissue, and are linked to sebaceous glands. Each follicle is attached to a tiny muscle (the arrector pili) that can cause the hair to stand up. Numerous nerve endings are also connected to the hair follicles, making them sensitive to even the slightest touch. At the base of the hair, the root widens into a bulb. Inside the bulb is the dermal papilla, which provides blood supply to the hair root. New hair cells are constantly formed in the hair bulb near the papilla. The hair shaft of mammals is composed of three main regions.

a) **Cuticle:** The cuticle is the outermost protective layer of the hair, made up of overlapping cells that resemble fish scales or roof tiles, all facing downward. When healthy, the cuticle is smooth and flat, contributing to the hair's shine and safeguarding the inner layers from damage.

b) **Cortex:** The cortex is the thickest layer of the hair shaft, located between the cuticle and the medulla. It contains the majority of the hair's pigment, which gives the hair its color. The primary pigment in the cortex is melanin, the same pigment found in the skin.

c) **Medulla:** The medulla, also known as the pith or marrow of the hair, is the innermost layer. It consists of round cells and is typically present in thick or coarse hair. However, naturally blonde and fine hair often lacks a medulla.

Understanding the Hair Structure

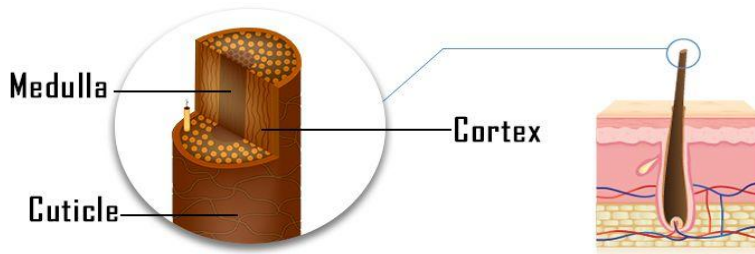


Fig 1. – Hair Anatomy

HEBAL HAIR CONDITIONER

Herbal hair conditioners offer more than just conditioning; they are crafted with natural ingredients that nourish and revitalize your hair. The best conditioners for hair growth not only repair damaged strands but also enhance shine, improve manageability, and protect your hair from environmental harm.

Types of hair conditioner;

1. **Rinse-Out Conditioner:** Rinse-out conditioners are the most widely used type. These conditioners don't require long application times, and their effects are typically immediate. To use, apply a generous amount to damp hair and leave it in for at least three minutes. Suitable for all hair types, rinse-out conditioners work by smoothing the cuticle scales of the hair. Some formulas create a thin coating over the hair to fill in gaps in damaged cuticles, making the hair shinier and more manageable. The most effective rinse-out conditioners are typically acid-based.
2. **Leave-In Conditioner:** Leave-in conditioners, such as Daily Dose, contain moisturizing and protective ingredients that can be sprayed or applied directly to the hair. These conditioners are especially beneficial for kinky African natural hair and can also double as a detangler. They help prevent hair from drying out and are lighter and thinner than other conditioners, making them less heavy on the hair. Leave-

in conditioners can be used as both a moisturizer and a styling product, making them suitable for all hair types.

3. **Deep Conditioners:** Deep conditioners are designed for dry and damaged hair, offering more intensive conditioning than regular conditioners. The ingredients in deep conditioners are typically gentler, focusing on restoring moisture and repairing hair. They are also used for reconditioning and rejuvenating hair that has become dry or damaged. However, deep conditioners may not be suitable for normal hair, as they can weigh it down due to their rich formulation. Deep conditioning is a longer process, requiring you to apply the conditioner to your hair and leave it on for 30-40 minutes before rinsing it off.

4. **Hair Mask Conditioners:** Hair masks are ideal for deeply nourishing the hair, especially at the roots. They provide instant shine and radiance, and are typically used two times per week. Formulated with concentrated ingredients, hair masks deliver essential nourishment to the hair, offering long-lasting results. While suitable for all hair types, hair masks tend to be more expensive than other conditioner options. To use, apply the mask to your hair and leave it in for 15-20 minutes before washing it off.

OBAJECTIVE OF HERBAL HAIR CONDITIONER

1. Designed to enhance the shine of your hair.
2. Helps keep your hair soft and manageable.
3. Promotes healthy hair growth.
4. Leaves hair soft and moisturized.
5. Restores damaged hair.
6. Helps straighten curly hair.
7. Revitalizes and replenishes hair strands.
8. Revitalizes and replenishes hair strands.
9. Protects hair from UV rays and heat damage.
10. Adds shine and softness to hair.

ADVANTAGES OF HERBAL HAIR CONDITIONER




1. Adds shine and softness to hair.
2. Reduces split ends.
3. Improves manageability.





4. Prevents hair breakage.
5. Protects hair from chemical and mechanical damage.

PROPERTIES HERBAL HAIR CONDITIONER

A good conditioner must provide maximum moisture, offering deep hydration while restoring the natural oils stripped from the hair due to daily styling and shampooing. Emollients and humectants play a key role in delivering moisture and shine. Beyond hydration, an effective conditioner should also provide slip, which aids in detangling. Slip is essential for length retention and efficient detangling. Ideally, the conditioner should be rich, thick, and creamy, with the ability to absorb and protect the hair at a high level, penetrating the hair shaft. This can be achieved with a water-based formula. For those who prefer natural ingredients, checking the ingredient list is crucial. A good conditioner will leave the hair feeling soft, like cotton, signaling it has done its job. If you find yourself reaching for your hair often, consider adding this conditioner to your regular hair care routine.

MATERIAL AND METHOD

S.No.	Crude Drug	Synonyms	Biological Source And Family	Photo	Uses
1.	Fenugreek: It is the help in reducing dryness and frizz	Trigonella Methi	Dried seeds of trigonella foenum, Fabaceae		Support the nourishes hair
2.	Hibiscus flower: It is rich in essential nutrient and vitamins	Hibiscus rosa-sinensis, rosella	Hibiscus sabdariffa, Malvaceae		Hair growth and prevent hair fall
3.	Curry leaves: The protein and beta-carotene present	Murraya koenigii, Murraya leaves	Murraya koenigii plant, Rutaceae		Help strengthen your hair shaft from the roots

4.	Amla: Help provide strength to the hair follicles	Phyllanthus emblica,	Emblica officinalis plant, Euphorbiaceae		Its remove the germs, dirt, and bacteria
5.	Aloe vera: Hair moisturize and smooth	Aloe barbadensis miller	Dried latex of leaves of aloe, Asphodelaceae		Promote hair growth
6.	Onion powder: Increase blood circulation in the hair and new hair growth	Allium cepa, shallot	Allium cepa plant, Amaryllidaceae		Support the Anti-bacterial
7.	Coconut oil: Conditioning agent and moisturizes hair	Cocos nucifera, Indian nut	Coconut palm tree, Arecaceae		Its oil also moisturizes your hair

Various excipients are used in herbal hair conditioner:

Preservatives: Substances that prevent or slow down the growth of bacteria, spoilage, and discoloration in foods are known as food preservatives. Examples - propylparaben

To formulate an herbal hair conditioner by mixing the two phases are prepared such as Aqueous phase and oily phase

Aqueous phase: fenugreek seeds extraction, hibiscus flower extraction, curry leaves extraction, amla extraction, onion powder extraction, aloe vera gel extraction.

Oily phase: Coconut oil extraction

CONCLUSION

A formulated herbal hair conditioner containing Fenugreek seeds, aloe Vera gel, hibiscus flower extract, curry leaves extract, Amla extract, onion powder and Coconut oil was successfully developed using methyl paraben as a preservative agent. The formulation underwent several evaluations, including tests for color, odor,

consistency, pH, spreadability, and washability, all of which produced acceptable results. These findings indicate that the formulation may be effective for its intended purpose; however, additional testing may be required before it can be used in practical applications.

REFERENCE

1. Sonawane KH, Chaure GS, Jagtap BT Formulation and Evalution of Herbal Hair Conditioner, 2023 Jun 14;1(05):1
2. Miss B. Jyothi, Shaguftha Naaz, S. Lahari, D. Anil, A. Gowthami, A. Sreeja: Formulation and Evaluation of Hair Conditioners 2021; 706-715
3. Divya Bhagwat Khile: A review on Hair Conditioner Containing Curry Leaves, Amla, Aloe vera, Neem & Flaxseed 2022; 637-640
4. Jujgar, Gauri S., et al. "Formulation and evaluation of herbal hair mask." Journal of Pharmacognosy and Phytochemistry 13.3 (2024): 51-59.
5. Sen, Himeswar, et al. "Harnessing Herbal Ingredients in Hair Cosmetics: A Natural Approach to Hair Care." Journal of Natural Remedies (2024): 2111-2129.
6. Vakte, S. R., Mahajan, Y. V., Lohagaonkar, N. B., Dolas, R. T., Kulkarni, A. D., Gangurde, S. A., ... & Gambhire, M. S. (2023). Herbs as Hair Care Cosmetic Agents: Mini Review. Current Cosmetic Science, 2(1), E101123223500.
7. Penkar, Gayatri M., et al. "An overview on Indian herbs in hair care therapy." Research Journal of Pharmacognosy and Phytochemistry 15.2 (2023): 161-166.
8. Kanedi, Mohammad. "Indonesian plants potentially to be used as the hair growth promoting agent." GSC Advanced Research and Reviews 10.03 (2022): 171-175.
9. Shende, Madhukar, et al. "FOCUSING ON VARIOUS COSMETIC APPLICATIONS OF POLYHERBAL SHAMPOO FORMULATIONS: AN INSIGHT REVIEW." (2022).
10. Gupta, Khushi, and Swarup J. Chattarjee. "A REVIEW: HAIR COSMECEUTICAL-A NEED OF HOUR." (2022).
11. Okole, Blessed, et al. "Use of herbal extract-based nanoemulsions for hair care application." Nanotechnology for the preparation of cosmetics using plant-Based extracts. Elsevier, 2022. 203-233.

12. Deveoglu, Ozan. "A Review on onion skin, a natural dye source." *Journal of Textiles, Coloration and Polymer Science* 19.2 (2022): 307-319.
13. Dipakbhai, Patel Avani, and Rajvi J. Mahida. "Review of Natural Resources used to Hair Dye and Hair Care Products." *Journal of Pharmaceutical Sciences and Research* 13.9 (2021): 546-552.
14. Kaur, Arashmeet, et al. "Novel herbs used in cosmetics for skin and hair care: A review." *Plant Arch* 20.1 (2020): 3784-3793.
15. BAHADUR, SHIV, RANJIT K. HARWANSH, and PRASHANT KUMAR. "Medicinal Plants Used in Herbal Cosmetics with Special Reference to Anti-Dandruff." *International Journal of Pharmaceutical Research* (09752366) 12.4 (2020).
16. Singh, Neha, et al. "Indian medicinal plants: For hair care and cosmetics." *World Journal of Pharmaceutical Sciences* (2014): 1552-1556.
17. Gupta, A., Malviya, R., Singh, T. P., & Sharma, P. K. (2010). Indian medicinal plants used in hair care cosmetics: a short review. *Pharmacognosy Journal*, 2(10), 361-364.
18. Saraf, S., Jharaniya, M., Gupta, A., Jain, V., & Saraf, S. (2014). Herbal hair cosmetics: advancements and recent findings. *World Journal of Pharmaceutical Research*, 3(2), 3278-3294.
19. Gubitosa, Jennifer, et al. "Hair care cosmetics: From traditional shampoo to solid clay and herbal shampoo, a review." *Cosmetics* 6.1 (2019): 13.
20. RAI, PRASHANT, et al. "An update on plants for hair growth promoting activities." *Journal of Medicinal and Aromatic Plant Sciences* 40.1-4 (2018): 13-25.
21. PATEL, SONALBEN DINESHBHAI. "A review of herbal cosmetics used for skin care and hair care." *Life Sciences Leaflets* 171 (2024): 1-23.
22. Mcconnell, Kathleen. "Useful Cosmetic Herbs for Skin Care, Hair Care, Beauty Care, and Toiletries." *Economic Botany* 59.4 (2005): 425-426.
23. Kapoor, V. P. "Herbal cosmetics for skin and hair care." (2005).
24. More, Ms Gayatri, and Mr Shravan Somani. "A Review on Hair Care Cosmetics and Indian Medicinal Plants for Hair."