



Formulation and Evaluation of Herbal Hair Spray

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ABSTRACT-The present study focuses on the formulation and evaluation of a herbal hair spray designed as a natural alternative to chemical-based hair care products. This formulation aims to promote hair health, reduce hair fall, provide a conditioning effect, and act as a styling aid, all while minimizing adverse effects commonly associated with synthetic ingredients. The herbal hair spray is composed of various medicinal plant extracts known for their therapeutic benefits for hair. Key ingredients include Aloe vera (moisturizing and soothing), Chamomile (promotes hair growth and Antioxidant), Ginger (Stimulate hair growth and anti-inflammatory properties), Amla (Indian gooseberry) (rich in vitamin C and antioxidants), and Rosemary (renowned for strengthening hair roots and promoting hair growth). The antioxidant activities of the spray suggest potential benefits in maintaining scalp health and preventing common scalp infections. The herbal hair spray was evaluated for key physicochemical parameters such as pH, viscosity, spray ability. In addition, user trials and sensory analysis were conducted to assess consumer acceptance in terms of fragrance, non-stickiness, and hair texture improvement. The formulated herbal hair spray presents a promising, eco-friendly alternative to commercial hair sprays, combining traditional herbal knowledge with modern cosmetic formulation techniques to deliver a safe and effective hair care solution.

Keywords: Herbal Hair Spray, Hair Growth

1. INTRODUCTION-

Hair is a protein filament that grows from follicles found in the dermis, or skin. The hair follicle is a sensing, reactive and multi-layered skin accessory that fulfils a number of vital purposes and generally requires a specific molecular environment in order to remain fully functional. Besides providing an insulating layer to skin of animals. It also aids in camouflage for survival and is also known to provide sensory, and tactile information about the environment. Hair follicles are formed as a result of epidermal and dermal interactions and generally appear during the first trimester in humans. Hair growth is a distinct and multifaceted process that includes a continuous cycle of growth, resorption, rest and renewal. 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. Every hair isn't different stages of growth cycle. The growth of hair is cyclic phase divided into following – anagen (growth), catagen(involution), and telogen(rest). Pigmentation problems, dandruff and falling of hair are associated problems with hair. The loss of hair is not life threatening, but has profound impact on social interactions.

There are Four types of Hair growth:

1. Anagen (Growing Phase)
2. Catagen (Transition Phase)
3. Telogen (Resting Phase)
4. Exogen (Shedding Phase)

HERBAL HAIR SPRAY:

Herbal hair spray is a naturally formulated hair care and styling product made using a blend of botanical extracts, essential oils, and other plant-based ingredients known for their therapeutic and cosmetic benefits. As an alternative to conventional hair sprays that often contain harsh chemicals such as alcohol, synthetic fragrances, sulfates, and parabens, herbal hair spray offers a safer and more holistic approach to hair styling. It not only helps in setting and holding hairstyles—be it curls, waves, or sleek looks—but also nourishes the hair and scalp, promoting overall hair health. The inclusion of ingredients like aloe vera, which soothes and hydrates; amla and ginger, which possess antibacterial and antifungal properties; and amla and rosemary, which strengthen the hair roots and encourage growth, makes herbal hair spray a multifunctional product. Additionally, extracts like rosemary, Onion contribute to improved scalp circulation, pleasant natural fragrance, and relief from common scalp issues such as dryness or dandruff. Herbal hair sprays are especially beneficial for individuals with sensitive scalps or those seeking to avoid chemical exposure due to allergies, environmental concerns, or lifestyle choices. They are generally non-toxic, biodegradable, and suitable for all hair types, making them a popular choice among eco-conscious consumers.

2. METHOD OF FORMULATION-

- **Composition of 50 ml. formulation of herbal hair spray:**

Sr no.	Ingredient	Quantity	Action
1	Chamomile Extract	5 ml	Anti-inflammatory
2	Brahmi Extract	5 ml	Circulatory Stimulant
3	Amla Extract	5 ml	Hair growth promotion
4	Onion Extract	5 ml	Promoting hair growth
5	Ginger Extract	5 ml	Improved blood circulation
6	Aloe vera Extract	5 ml	Enzymatic activity
7	Rosemary Extract	5 ml	Hair growth stimulant
8	Water	15 ml	Preserve Bioactivity

- **Method of preparation of herbal hair spray:**

1. All the herbal extracts are collected from market.
2. All the required glassware Are collected & Sterilized (Beaker, Measuring Cylinder, Stirrer, Volumetric flask).
3. All the required extracts for herbal hair spray preparation were accurately weighed individually by using measuring cylinder.
4. Mixed all extracts into volumetric flask.
5. Makeup with 50 ml water.
6. Shake for 30 min and transferred into spray bottle.

4. EVALUATION OF HERBAL HAIR SPRAY-

- **Organoleptic characteristics:**

Observe the Color, Odor, Texture by visual inspection.

- **pH test:**

pH was measured using pH meter.

- **Spreadability test:**

Take a clean glass slide & place the Test sample, now cover it with other glass slide. Then a weight or certain was placed on the sample is pressed & spread uniformly.

- **Irritation test:**

1-2 ml formulation was applied on scalp and observe for 6 to 7 hours. For any signs of irritancy, inflammation, itching.

- **Stability test: (Room temperature)**

Stability at room temperature is checked by keeping the product at room temperature.

- **Homogeneity test:**

The sample was placed on the object glass for the homogeneity test. They should not be non-dispersed particles in a homogenous preparation.

5. RESULT & DISCUSSION-

- **Evaluation Parameter:**

Sr no.	Parameter	Result
1	Colour	Orange
2	Odour	Woody or Spicy
3	Texture	Light & Mishty
4	PH	5.24

5	Spreadability	Pass
6	Irritation	Pass
7	Stability	1 Month
8	Homogeneity	Pass

• Discussion:

In Discussion, herbal hair spray represents a holistic approach to hair care, blending the benefits of nature with modern beauty needs. Unlike conventional sprays that often contain harsh chemicals, alcohol, and synthetic fragrances, herbal alternatives are formulated with natural ingredients such as aloe vera, rosemary, ginger, amla, and chamomile. These ingredients not only help in maintaining hairstyles and providing a light to firm hold but also nourish the scalp, strengthen hair roots, and promote healthy hair growth. Herbal sprays are especially beneficial for individuals with sensitive scalps or those looking to avoid long-term damage associated with chemical-laden products. Additionally, they are generally environmentally friendly, biodegradable, and safer for daily use. As consumers become more health-conscious and eco-aware, the demand for herbal hair care solutions continues to rise, making herbal hair sprays a sustainable and beneficial choice for maintaining both hair health and style naturally. The evaluation of the herbal-based hair spray formulated with Chamomile, Brahmi, amla, onion, ginger, Aloe vera, and rosemary indicates that the product has several favorable attributes. The pH level was within the ideal range for scalp health, and the product did not cause any irritation, affirming its safety for use. Stability testing over a three-month period confirmed the product's durability and effectiveness.

6. CONCLUSION-

Herbal hair sprays offer a natural and effective alternative to chemical-based products, promoting healthy hair without harmful side effects. With ingredients like aloe vera, onion, rosemary, and ginger, these sprays not only help in styling but also nourish the scalp, reduce hair fall, and improve overall hair texture. As awareness about the benefits of natural products continues to grow, herbal hair sprays are becoming a preferred choice for those seeking a safer, eco-friendly hair care solution.

7. FINAL FORMULATED HERBAL HAIR SPRAY-



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