

DEVELOPMENT OF NATURAL HAIR OIL FOR HAIR GROWTH AND NOURISHMENT

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Abstract:

Herbal preparations have long been used to maintain healthy hair and prevent common scalp problems. Natural ingredients such as hibiscus, curry leaves, onion, amla, and fenugreek contain phytochemicals that are known to support hair growth, strengthen roots, and improve hair texture. When infused in coconut oil, these botanicals provide nourishment to the scalp, reduce dandruff, and help in controlling excessive hair fall. The use of vitamin E further enhances antioxidant activity, keeping the oil stable and protecting hair from damage. This study focuses on the preparation of a herbal hair oil using locally available ingredients and evaluates its effectiveness for promoting strong, shiny, and healthy hair.

Keywords: Hibiscus, Curry leaves, hair oil, hair growth, natural Nourishing

Introduction: Herbal cosmetics, often referred to as phytocosmetics, are formulations that make use of plant-based ingredients such as oils, extracts, powders, and resins to improve the health and appearance of skin and hair. These natural compounds are becoming increasingly popular in personal care products as alternatives to synthetic chemicals, which are often associated with irritation or long-term side effects. Hair plays a significant control in both physical protection and personal identity, and maintaining its strength, shine, and texture has been a long-standing concern in traditional as well as modern medicine^[1]

Exposure to environmental stressors like pollution, UV radiation, seasonal changes, and excessive styling can lead to scalp dryness, dandruff, hair fall, and loss of natural luster. To counter these issues, herbal oils infused with bioactive compounds are widely used for their ability to nourish the scalp, strengthen hair roots, and restore moisture balance. Ingredients such as hibiscus, curry leaves, fenugreek, onion and amla are rich in phytochemicals including flavonoids, saponins, and antioxidants that collectively improve scalp health and stimulate hair growth. Consumers today are also shifting toward products labeled “natural” or “free-from” harmful additives such as parabens, sulfates, silicones, and synthetic fragrances. This growing preference highlights the importance of safe, effective, and sustainable formulation in the hair care industry. Herbal hair oils, which combine the therapeutic benefits of plant-based ingredients with the protective role of carrier oils like coconut oil, represent one of the most practical and accessible solutions for managing common hair and scalp disorders.^[3]

Need of the Study: The objective of preparing natural hair oil is to provide a safe, effective, and chemical-free solution for promoting healthy hair growth. This formulation aims to:

1. Strengthen hair roots and reduce hair fall.
2. Nourish the scalp with natural vitamins and minerals.
3. Enhance hair texture, making it smooth, soft, and silky.
4. Prevent dandruff, dryness, and premature graying.
5. Improve blood circulation to the scalp for better hair growth.
6. Offer a 100% natural and cost-effective alternative to synthetic hair care products.

Plant Profile

1. Hibiscus (*Hibiscus rosa-sinensis*) Rich in vitamins and amino acids, hibiscus flowers help strengthen hair roots, prevent premature greying, and promote thick, shiny hair. Its natural mucilage also acts as a conditioner, keeping hair smooth.



Figure.1 Hibiscus (*Hibiscus rosa-sinensis*)

2. Curry Leaves (*Murraya koenigii*): Curry leaves are a good source of beta- carotene, proteins, and antioxidants. They stimulate hair follicles, reduce hair thinning, and restore natural pigmentation to delay greying.^[4]



Figure.2 Curry Leaves (*Murraya koenigii*)

3. Neem (*Azadirachta indica*): Known for its antifungal and antibacterial properties, neem helps control dandruff, soothes scalp irritation, and promotes a healthy scalp environment for hair growth.



Figure. 3 Neem (*Azadirachta indica*)

4. Aloe Vera (*Aloe barbadensis*): Aloe vera gel hydrates the scalp, reduces itchiness, and removes excess oil build-up. It contains proteolytic enzymes that repair dead skin cells and support new hair growth.



Figure.4 Aloe Vera (*Aloe barbadensis*)

5. Amla (*Phyllanthusemblica*) :Alma is packed with vitamin C and antioxidants, which nourish hair, prevent breakage, and strengthen follicles. Regular use of amla reduces hair fall and improves natural shine



Figure.5 Amla (*Phyllanthusemblica*)

6. Onion (*Allium cepa*): Onion is widely used in traditional remedies for promoting hair growth. It is rich in sulfur compounds, which are essential for the production of keratin, the protein that makes up hair. Regular application of onion juice or oil strengthens hair roots, reduces thinning, and supports the regeneration of

new hair follicles. Its antibacterial properties help maintain scalp health by preventing infections and dandruff. Onion also improves blood circulation in the scalp, leading to thicker and healthier hair growth.^[5]



Figure.6 Onion (*Allium cepa*)

Table .1 Formulation Table

Sr.No	Name of Ingredient	Formulation Table		
		F1	F2	F3
1.	Coconut oil	200 ml	220 ml	240 ml
2.	Hibiscus flowers	10 g	12 g	14 g
3.	Curry leaves	10 g	12 g	14 g
4.	Onion	5 g	6 g	7 g
5.	Amla	4 g	5 g	6 g
6.	Fenugreek seeds	2 g	3 g	4 g
7.	Vitamin E capsule	3 capsule	4 capsule	5 capsule

Preparation Method of Natural Oil:

- Wash and dry hibiscus flowers, curry leaves, onion, amla, and fenugreek seeds.
- Crush them lightly to release active components.
- Heat coconut oil in a stainless steel vessel on low flame.
- Add the crushed herbal ingredients and stir continuously.
- Allow the mixture to heat for 15–20 minutes until the herb the oil absorbs their essence.
- Cool the mixture and filter using muslin cloth.
- Add the contents of vitamin E capsules into the filtered oil and mix well.
- Store the prepared herbal hair oil in an airtight glass bottle.^[6]



Figure.7 Preparation Method of Natural Oil

Organoleptic Evaluation

1. Color:

The color of the herbal hair oil was visually inspected to ensure uniformity and stability.

2. Odor:

The fragrance of the oil was examined to confirm its pleasant and characteristic herbal aroma.

3. pH Determination

A small amount of oil was diluted with distilled water, and the pH was measured using pH paper or a digital pH meter to determine skin compatibility.

4. Viscosity

Viscosity was measured using a viscometer to assess the flow property of the oil, which affects its ease of application and absorption.

5. Saponification Value

This test determines the amount of alkali required to saponify the fats and oils present in the sample, which helps in identifying the fatty acid composition.

6. Skin Irritation Test

A patch of the formulated oil was applied to a small area of skin and observed for 24 hours to check for redness, itching, or irritation.

7. Specific Gravity

The specific gravity of the formulation was determined using a pycnometer or specific gravity bottle to ensure uniform density and quality.

8. Stability Study

The oil sample was stored under different temperature conditions and observed for changes in color, odor, and phase separation over a period of time.^[7]

Table 2.Evaluation Parameter

Sr.No	Parameters	Observations		
		F1	F2	F3
1	Color	Reddish brown	Reddish brown	Reddish brown
2	Odor	Good	Good	Good
3	pH	6.92	6.00	6.50
4	Viscosity (cps)	30	35	40
5	Saponification value	24.32	25.24	30.20
6	Skin irritation test	No irritation	No irritation	No irritation
7	Specific gravity	0.84	0.90	0.70
8	Stability	Stable	Stable	Stable

Result and Discussion:

The results indicate that the formulated herbal hair oil possesses favorable physicochemical properties. The near-neutral pH ensures compatibility with the scalp, preventing dryness or irritation. The oil’s viscosity allows easy application and good penetration into hair follicles. The prepared natural herbal hair oil was found to be smooth in texture, dark greenish-brown in color, and had pleasant herbal aroma. The oil showed good stability when stored at room temperature with no signs of phase separation or rancidity.

The low saponification value suggests that the oil contains long-chain fatty acids, which contribute to moisturizing and strengthening hair roots. The absence of irritation proves that the formulation is non-toxic and gentle on the skin. Overall, the natural herbal hair oil is stable, effective, and safe for regular use, showing potential as a natural alternative to synthetic hair care products.

Conclusion:

Natural hair oil is one of the most effective traditional remedies for maintaining scalp health and enhancing hair growth. The formulated oil, prepared using coconut oil infused with hibiscus flowers, curry leaves, onion, amla, fenugreek seeds, and vitamin E, provides essential nutrients that strengthen hair follicles, reduce hair fall, and improve texture. Evaluation of the formulation showed a suitable pH, good viscosity and stability under storage conditions. The oil demonstrated no irritation on application, confirming its safety for topical use. These findings suggest that natural hair oil can serve as a reliable and beneficial alternative to synthetic hair care products, offering nourishment and promoting strong, healthy, and shiny hair.

Acknowledgments: I would like to acknowledge and give my warmest thanks to my guide Prof. Bhavana D. Tambe who made this work possible. Her guidance and advice carried me through all the stages of my project. I would also like to thank Dr. Y.V. Ushir Sir and SMBT Institute of Pharmacy for providing me facilities.

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