



Development and Evaluation of Herbal oil for Hair Growth Potential

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Abstract

In the present investigation powder plant material of *Hibiscis rosa sinensis*, *Bacopa monniera* and *Nigella sativa* was taken to formulate polyherbal hair oil and was further evaluated for its efficacy. The present work was aimed to formulate herbal oil for general purpose (application in hairs) using various herbs. The formulated herbal oil was evaluated and various parameters such as viscosity, saponification value, pH etc. were determined and are reported in this paper.

Key-words: Hair oil, Herbal, Hair Growth

Introduction

Cosmetics have become increasingly popular among both men and women in recent decades. Hair colours, oils, and creams are popular with both men and women. Most nations currently have regulations in place to control, manufacture, label, and market cosmetics in such a way that they are not detrimental to the health. Beauty and cosmetics have been around as long as mankind and civilisation. As a result, people employ a variety of herbal-based beauty products to appear attractive and youthful. The significance of Indian herbs is well-known around the world. Herbal cosmetics are becoming increasingly popular in the global market, and they are a valuable natural gift. There is a wide choice of herbal cosmetics to satisfy the beauty. [1-2]. Adding herbs to cosmetics is really harmless for our skin. Herbal hair oil is one of the most widely used hair treatments. Herbal hair oil not only moisturises the scalp, but it also heals dry scalp and hair. It contains various vital nutrients required to maintain the regular operations of the sebaceous glands and stimulate natural hair growth. [3-5].

Keeping this in mind, the current work was undertaken. Many herbal products have been hailed for their capacity to stimulate hair growth. A variety of herbal remedies are suggested for hair growth stimulation in India's traditional medical system, but their use is restricted due to a lack of scientific support and knowledge.

Material and Methods

Collection of plant part

Hibiscis rosa sinensis (Flowers), *Bacopa monniera* (Leaves) and *Nigella sativa* (Seeds) were procured from local vendors from Bhopal, MP.

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Formulation of polyherbal hair oil

Table 1 shows the numerous substances utilised in the manufacture of herbal oil. All dried and fresh herbs *Hibiscis rosa sinensis* (Flowers), *Bacopa monniera* (Leaves) and *Nigella sativa* (Seeds) were accurately weighed and ground in the combination before being blended with 70% til oil. The above content was cooked for 15 minutes and then strained through a muslin cloth. To make up the volume, 100 mL of coconut oil was added to the filter. Finally, a tiny amount of colour and flavouring ingredient were added to the oil, which was placed in an amber-colored bottle. [6-7]

Table 1: Composition of polyherbal hair oil

S/No.	Ingredients	Quantity (%)
1.	<i>Hibiscis rosa sinensis</i> (Flowers)	2.5
2.	<i>Bacopa monniera</i> (Leaves)	1.0
3.	<i>Nigella sativa</i> (Seeds)	1.5
4.	Til oil	60
5.	Coconut oil	25
6.	Rang	qs
7.	Flavoring agent	qs

Evaluation of polyherbal hair oil

The formulated herbal hair oil was subjected to physical evaluation. [6-7]

Sensitivity test

The prepared herbal hair oil was applied on 1 cm skin of hand and exposed to sunlight for 4-5 min.

Acid value

Preparation of 0.1 molar solution: Weighed 0.56 g KOH pellets and dissolved in 100 mL of distilled water and stirred continuously. The prepared 0.1 molar KOH solution was filled in the burette. Preparation of sample: Measured 10 mL oil and dissolved in 25 mL of ethanol and 25 mL of ether mixture and shaken. Added 1 mL of phenolphthalein solution and titrated with 0.1 molar KOH solution.

Saponification value

Accurately weighed 1 mL of oil into a 250 mL of conical flask and 10 mL of ethanol : ether mixture (2 : 1) was added. To this flask 25 mL of 0.5 N alcoholic KOH was. Kept the flask for 30 min. and the flask was cooled. The cooled solution was

titrated against 0.5 N HCl using phenolphthalein indicator. Similarly the blank titration was performed without taking oil (sample). Amount of KOH in mg used was calculated.

pH: The pH of herbal hair oil was determined using pH meter.

Viscosity: The viscosity was determined using Ostwald's viscometer.

Specific gravity: Take the specific gravity bottle, rinsed it with distilled water, dry it in oven for 15 minutes, cool, closed it with cap and weigh it (a). Now fill the same specific gravity bottle with the sample and closed it with cap and again weigh it (b). Determine the weight of sample per milliliter by subtracting the weight (b-a).

Primary dermal irritation study

Male New Zealanders White rabbits were employed in the dermal irritancy testing. The experimental procedure was approved by the Institutional Animal Ethics Committee, and OECD 404 principles were followed throughout the maintenance and experiment. In a study on dermal irritancy, rabbits were given a herbal oil formulation. Approximately 24 hours before the test, fur was removed from the animals' trunks by closely trimming the dorsal area. Half a gramme of the herbal mixture was applied to a small area of skin (about 6 cm²) and covered with a gauze patch secured with non-irritating tape. All animals were checked for erythema and oedema, and responses were recorded at 60 minutes, 24, 48, and 72 hours after patch removal.

Results and Conclusion

Herbal hair oil is one of the most well-known hair treatments. Herbal hair oil moisturises the scalp while also reversing the dry scalp and hair condition. It contains a variety of important elements that are required to keep sebaceous glands functioning properly and stimulate natural hair growth. The herbal hair oil was made from a variety of plants and their role in the formulation is unique. The sensitivity, viscosity, pH, irritation, grittiness, saponification, and acid value of herbal hair oil were all examined (Table2). As a result of the current analysis, it was discovered that the created herbal hair oil meets the highest criteria, and further standardisation and biological screening confirms its efficacy. The overall scores for skin irritation in terms of erythema and

oedema were determined after 12, 24, 48, and 72 hours using the OECD grading method. The results showed that the new polyherbal hair gel formulation and polyherbal oil caused neither erythema or oedema on the undamaged rabbit skin after 72 hours. The formulation had a Primary Dermal Irritation Index (PDII) of zero, therefore according to OECD rules, it is non-irritant to rabbit skin.

Table 2: Evaluation Parameters of polyherbal hair oil

S/No.	Ingredients	Inference
1.	Specific gravity	1.008
2.	Viscosity	0.79
3.	Acid value	3.1
4.	Saponification value	10.8.2
5.	pH	7.0
6.	Sensitivity test	No irritation
7.	Irritation test	No irritation
8.	Grittiness	Smooth

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