

Original Article

FORMULATION AND EVALUATION OF HAIR OIL CONTAINING HERBAL INGREDIENTS

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ABSTRACT

Mankind uses a variety of cosmetic products to improve overall personality to look young and charming. Herbal cosmetics plays an important role in human being and are widely used because of the devotion that they have less side effects and superior safety as compared with synthetic products. Hair fall, dandruff, lice, spilt ends, grey hair are few problems involved with hair faced by human. Herbal oils are used to treat hair problems like thinning of hair and dry or flaky scalp. Apart from their moisturizing purposes they are also used to promote hair growth, improve blood circulation in the scalp and prevent dandruff. The aim of present work was to develop herbal hair oil from the Indian Gooseberry, Liquorice and Fenugreek, Curry leaves, Onion seeds, Parsley, Bahera and coconut oil. The prepared herbal hair oil was evaluated and reported herewith. All the parameters were found to be good and within the standards.

1. INTRODUCTION








Ayurveda means “Knowledge of Life” and is considered to be the traditional medicine of India. In Ayurvedic medicine, herbs are used as an integral part of health care system [1]. The artificial chemical compounds have replaced many ayurvedic plant products, the safety and efficacy of the natural products could not find appropriate match. Herbal chemical constituents obtained from plants are supposed to be much safer in the treatment of various diseases [2].




Hair is an epidermal growth of body that is one of the important parts increasing the elegance of the body. Hair fall, dandruff, lice, spilt ends, grey hair are few problems involved with hair faced by human. To overcome these, people takes various newer approaches by applying many cosmetics. Hair oil is one among them used to solve almost all of these problems [3-4].

Herbal cosmetics are in demand due to the increasing interest because they are more effective with minimum or less side effects. Hair care products are now added with herbs and they are well recognized compared with synthetic ones.

Herbal hair oil is generally chosen over other hair formulations and is used in many ailments of hair. Herbal hair oil promotes hair growth, improve hair elegance and prevent hair fall. Hair oil not only promotes hair growth they also provide necessary moisture to the scalp rendering in beautiful hair [5].

Based on the thorough literature survey, Indian Gooseberry, Liquorice, Fenugreek, Curry leaves, Onion seeds, Parsley, Bahera and coconut oil were selected for the preparation of poly-herbal hair oil.

S. No.	Herbal Ingredient	Biological Name	Application
1.	 Fenugreek	Trigonella foenum-graecum	Fenugreek seeds are rich in folic acid, Vitamin A, Vitamin K and Vitamin C, and are a storehouse of minerals. It is a enormous remedy to prevent hair fall.
2.	 Indian gooseberry	Phyllanthus emblica	Amla is used to stimulate hair growth and prevent hair loss and premature graying.
3.	 Parsley	Trachyspermum ammi	Parsley is highly beneficial in promoting hair growth. This is stimulate scalp circulation and promote hair growth.
4.	 Baheda	Terminalia bellirica	Baheda helps in promoting hair growth and controls dandruff. It helps remove excess oil and keeps the scalp dry to prevent the growth of dandruff.
5.	 Onion Seeds	Nigella sativa	Onion seeds help keep hair healthy and shiny. It contains anti-fungal properties that prevent fungal infections and scalp diseases that lead to hair loss. Onion seeds are rich in essential oils that nourish the hair and improve its growth.
6.	 Curry Leaves	Murraya koenigii	Curry leaves are a rich source of beta-carotene and proteins, which can reduce hair loss and increase hair growth. Curry leaves also help remove the dead hair follicles.
7.	 Brahmi	Bacopa monnieri	Brahmi oil is rich in bio-chemical compounds in the form of antioxidants. The massage with this oil treats temporary or permanent baldness.

8.	 Licorice	Glycyrrhiza glabra	Licorice soothes the scalp, ridding it of irritations such as dandruff and scabs. It's mollifying properties open pores and is great for the hair shaft.
9.	 Coconut Oil	Cocos Nucifera	Coconut oil stimulates hair growth getting deep into its follicles. Coconut oil promotes the scalp health fighting against such problems as insect bites, lice and dandruff. Coconut oil moisturizes dry hair. Coconut oil adds luster, shine and softness to the hair.
10.	 Olive Oil	Olea europaea	Olive oil moisturizes your hair and reduces scalp irritation, which further reduces dandruff. Just heat a cup of olive oil and massage hair generously,

2. MATERIAL AND METHODS

2.1 Plant part collection

For the preparation of herbal hair oil various plant materials were collected viz., Indian Gooseberry, Licorice, Fenugreek, Curry leaves, Onion seeds, Parsley, Bahera and Coconut oil from the Medicinal Garden of Chameli Devi Institute of Pharmacy, Indore and were properly authenticated in the Department of Pharmacognosy.

2.2 Formulation of herbal hair oil

The various ingredients used in the preparation of herbal oil formulation are presented in Table. Accurately weigh all the dried and fresh herbs such as Indian Gooseberry, Licorice, Fenugreek, Curry leaves, Onion seeds, Parsley and Bahera were grinded in the mixture. Grinded mixture was mixed in olive oil. The above content was boiled for 20 min. Boiled mixture was subject for filtration through muslin cloth. After filtration coconut oil was added to the filtrate to make up the volume (100 mL). Finally it was placed in amber color bottle.

Table 1: Formulation of Herbal Hair Oil

S. No.	Ingredients	Quantity
1.	Fenugreek	5 gm
2.	Indian Gooseberry	5 gm
3.	Parsley	5 gm
4.	Bahera	5 gm
5.	Brahmi	5 gm
6.	Licorice	5 gm

	Onion Seeds	5 gm
	Curry Leaves	5 gm
	Olive oil	25 ml
	Coconut oil	75 ml

2.3 Evaluation [6-8]

- **Organoleptic property:** Various Organoleptic properties of prepared herbal hair oil like Color, physical state, odour, polarity and solubility was determined.
- **Specific gravity:** Take the relative density bottle, rinsed it with distilled water and dry it in oven for 15 minutes to remove water, cool and closed it with cap and weigh it (a). Specific gravity bottle was filled with the sample, capped and again weigh it (b). Determine the weight of sample per milliliter by subtracting the weight (b-a).
- **Acid value:** molar KOH was prepared.
- **Preparation of sample:** Measured 10 ml herbal oil in measuring cylinder and dissolved the oil in 1:1 ratio of ethanol: ether and shaken. Add 1 ml of phenolphthalein solution to the mixture and titrated with freshly prepared 0.1 molar KOH solution.
- **Saponification value:** 1 ml of herbal hair oil was weighed and transferred into a 25 ml of conical flask. To this 25 ml alcoholic KOH solution was added. It was heated on a water bath for 30 minutes by frequently mixing the content of the flask phenolphthalein was added to cooled liquid and titrated against 0.5 M HCl. Blank solution was performed and saponification values were calculated.

- **pH:** The pH of formulated oil was determined by using pH meter.
- **Viscosity:** The viscosity of herbal oil was determined using Brookfield viscometer.
- **Primary skin irritation test:** The prepared formulation was assessed for primary skin irritation test on our forearm, little amount of formulation was applied on the test site. The test site was observed for erythema and edema for 3 to 4 hrs.
- **Sensitivity test:** The prepared herbal oil was applied on 1 cm skin of hand and exposed to sunlight for 4-5 min.

3. RESULTS

The formulated herbal hair oil using the above mentioned ingredients was evaluated for the following parameters and the results are tabulated.

Table No. 2 Evaluation of Herbal Hair Oil

S. No	Parameters	Result
1.	Physical State	Greasy liquid
2.	Colour	Pale green
3.	Odour	Pleasant
4.	Polarity	Non-polar
5.	Solubility	Soluble in non polar solvents
6.	Specific Gravity	0.937
7.	Acid values	2.3
8.	Saponification values	209
9.	pH	8.8
10.	Viscosity	1.096
11.	Primary skin irritation test	Non-irritant
12.	Sensitivity	No sensitivity

4. CONCLUSION

The herbal ingredients were chosen for the formulation of hair oil. This research provides guideline on the use of herbal ingredients on the preparation of herbal hair oil having minimal or no side effects. The formulated hair oil is medicinally important in treatments of various other diseases. The formulation was proven to be safe for human use.

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