



COMPARATIVE STUDY OF FORMULATED HERBAL HAIR OIL WITH MARKETED PREPARATION

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ABSTRACT

The present study aimed to formulate hebal hair oil for general purpose using various herbs. This oil used to treat common hair problems such as hair fall, alopecia, dandruff. various herbs are used in formulation of hair oil are Amla, Almond, Garlic, Henna powder, Castor oil, Neem, Curry leaves, Coconut oil. This all ingredients provide nutrients such as protein, vitamin, antioxidant etc. Hair oil prepared by boiling method of oil preparation technique. Hebal hair oil provides essential nutrients required to maintain normal function of sebaceous gland. Good results of hair growth were seen in formulation. Formulated hair oil was evaluated by various parameters such as pH, specific gravity, viscosity, irritation test, sensitivity test, acid value, saponification value. Herbal hair oil having minimal or no side effects. All the values of evaluation showed that they are within the acceptable limit. Formulated hair oil was compared with marketed formulation of hair oil like Mahabhringraj oil. Hence, it is concluded that the formulated hair oil provide good hair growth, protection from dandruff, gives lustrous & shiny hairs as compare to marketed formulation.

Key words: hair oil, herbs, hair growth, acid, saponification value.

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INTRODUCTION:

Hair plays important role in human life. Hair is an epidermal derivative which is one of the vital part increasing the overall elegance of the body. Hair fall, dandruff, split ends, grey hair are few problems involved with hair faced by human. To overcome these, human takes many measures by applying many cosmetics for each. Hair oil is one among them used to solve almost all of these problems^[5]. The basic parts of hair are bulb (a swelling at the base which originates from the dermis), root (which is the hair lying beneath the skin surface), shaft (which is the hair above skin surface). The growth of

hair having cyclic phases divided into following: anagen (growth), catagen (involution) & telogen (rest)^[2].

The anagen phase can be short as 2-6yr. Catagen phase is between 2-3 weeks. Telogen phase lasts for 2-3 month^[1]. Adding herbs in cosmetics is very safe for our skin. Herbal hair oil is one of the most well recognized hair treatments. Herbal hair oil not only moisturize scalp but also reverses dry scalp & dry hair condition. It provides numerous essential nutrients required to maintain normal function of sebaceous gland & promote normal hair growth. Keeping this point in consideration the present work was undertaken^[3].

MATERIALS AND METHOD [3, 4].

Collection of plant part:

All the required raw materials were collected from local market of vita. Amla, Almond, Henna, Garlic, Neem, Castor oil, curry leaves, coconut oil these all ingredients were authenticated in pharmacognosy laboratory of Adarsh college of pharmacy, vita.

Formulation of herbal hair oil :

The various ingredients used in formulation of herbal hair oil are presented in table:1

Accurately weigh all the dried and fresh herbs. Mix coconut oil and castor oil uniformly then add almond, henna powder and amla keep aside for overnight. Then add curry leaves, garlic, neem and boil until colour of curry leaves changes to dark brown colour. and was filtered through muslin cloth. Finally small amount of color and flavoring agent was added to the oil and it was placed in amber colored bottle.

Table 1: Formula of herbal hair oil

Ingredients	Quantity (%)
Amla	5
Almond	2
Garlic	1
Henna Powder	2
Castor oil	25
Neem	2
Curry Leaves	2.5
Coconut Oil	q.s

EVALUATION PARAMETERS [4] :

The formulated herbal hair oil was subjected to physical evaluation.

Sensitivity test :

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

Skin Irritation test :

It is carried out by applying product on the skin for 10 minute.

Specific Gravity:

Take the specific gravity bottle, rinse it with distilled water. Dry it in oven for 15 min, cool, and close it with cap weigh it (a). Now, fill the same specific gravity bottle with sample & close it with cap and again weigh it (b).

Determine weight of sample per milliliter by subtracting the weight (b-a).

Viscosity:

It is an index of resistance of liquid to flow, higher the viscosity of a liquid, greater is the resistance to flow. The viscosity was determined by using Ostwald's viscometer.



pH :

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

Acid value :

Preparation of 0.1M KOH solution :

Weigh 0.56 g KOH pellets and dissolve in 100 ml of distilled water and stir continuously. Prepared 0.1M KOH solution was filled in the burette.

Preparation of sample :

Measure 10 g of oil sample and dissolve in 25 ml ethanol & 25 ml ether mixture and shake. Add 1 ml of phenolphthalein as an indicator. And titrate with 0.1M KOH solution.

Acid value = $5.61 V * N / W$

Where, V = Volume of potassium hydroxide used (ml).

N = Normality of potassium hydroxide.

W= Weight of sample (g)



Initial



End Point

Saponification value :

Accurately weigh 1g of oil sample into a 250ml conical flask and 10ml of ethanol : ether mixture (2:1) was added. To this flask, 25ml of 0.5N alcoholic KOH was added. Keep the flask 30 min for reflux then cool the flask. The cooled solution was titrated against 0.5N HCL solution using phenolphthalein as an indicator (a). Similarly, blank titration was performed without taking oil sample (b). The amount of KOH in mg used was calculated.

Saponification value = $28.05 \cdot (b-a) / W$

Where, b= ml of KOH required for blank

a= ml of KOH required to neutralize the substance.

W= weight of sample (g).

RESULT AND DISCUSSION:

The pH of formulated herbal hair oil was found to be in between 6-7, which was suitable for human skin. The acid value of hair oil was found to be 2.07. Acid value shows rancidity of oil. Other evaluated parameters are given below,

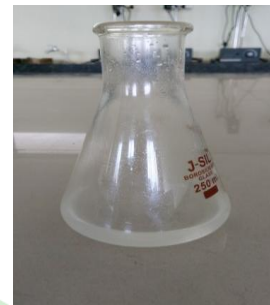
Table 2: Evaluation of herbal hair oil

Evaluation parameter	Result	
	Formulated Preparation	Marketed Formulation
Specific Gravity	0.796 g/ml	0.685 g/ml
pH	6-7	5-6
Viscosity	0.96 cp	0.
Acid value	2.07	1.96
Saponification value	112.90	94.80

For Blank:



Initial

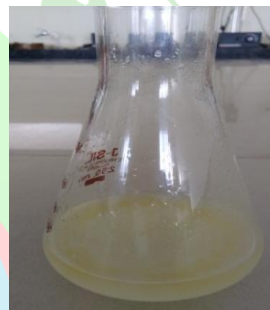


End Point

For Sample:



Initial



End Point

CONCLUSION:

Formulated herbal hair oil having minimal or no side effects. All the values of evaluation showed that they are within the acceptable limit. Hence, it is concluded that the formulated hair oil provide good hair growth, protection from dandruff, gives lustrous and shiny hairs as compare to marketed formulation.

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