

SHORT COMMUNICATION

Formulation and Evaluation of Herbal Hair Oil of *Murraya koenigii* Leaves Extract

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ABSTRACT

The present study was aimed to formulate the herbal hair oil for general purpose using various herbs for fewer side effects and have a better safety. The oil is prepared by using *Murraya koenigii*, *Azadirachta indica*, *Ocimum tenuiflorum*, *Hibiscus rosasinensis*, *Aloe barbadensis*, Coconut Oil. The formulated polyherbal hair oil was evaluated for the organoleptic properties, pH (6.4), acid value, (1.90), saponification value (181), viscosity (32.40) and pH(6.4) and specific gravity (0.93). This oil used to treat common hair problems such as hair fall, alopecia, dandruff. The Formulated herbal hair oil having minimal or no side effects. The formulated hair oil provide good for hair growth, protection of hairs from dandruff, gives lustrous and shiny hairs.

Keywords: Cosmetics, hair oil, *Murraya koenigii*, Polyherbal hair oil

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INTRODUCTION

Hair is epidermal derivative increasing the overall elegance of the body. Hair fall, dandruff, lice, spilt ends, grey hair these are problems involved with hair faced by human. To avoid these, human takes many measures by applying many cosmetics. Hair oil is one used to solve all these problems. Herbal cosmetics are in high demand due to the increasing interest of human towards them because they have less side effect, easily available, more effective etc. Hair oil those which contains herbal drugs are called hair tonics, these formulated by herbal extracts in an oil base. Herbal hair oil not only moisturizes scalp but also reverse dry scalp and dry hair conditions. Antibacterial, antifungal and anti-inflammatory properties of *Murraya koenigii* leaves which fights against dandruff and infections of the scalp [1-3].

Hibiscus contains calcium, phosphorus, iron, copper, zinc, vitamin B1, riboflavin, niacin and vitamin C, which is used to stimulate thicker hair growth by strengthening the strands and prevents premature graying of hair. Hibiscus oil effectively revives the scalp and prevents it from turning dry. Hibiscus shows potential for cancer treatment and as a weight loss aid. Neem consist of several fatty acids such as linoleic acid, stearic acid, oleic acids that nourishes and revitalize rough hair to a smooth silky texture [4-6].

MATERIAL AND METHODS

Collection of plant part

For the preparation of herbal hair oil various plant materials were collected viz., *Murraya koenigii* leaves, leaves of *Azadirachta indica*, tulsi, Aloe vera and hibiscus were collected from botanical garden and coconut oil procured from local market.

Formulation of herbal hair oil

Herbs of all the crude drugs are collected and dried under shade. Drying under shade will retain the active constituents. Hence shade drying is preferred over artificial drying. Prepared powder of dried crude drugs by using mixer. Further on all these coarsely powdered drugs are passed through the mesh number 80 sieve. Thus obtained powders are blended together to get a uniform mixture. Now coconut oil is added

and mixed well. Now the contents were boiled for 15 min and were filtered through muslin cloth. To the filtrate the coconut oil was added and make up the volume. It was placed in amber colored bottle.

Table1: Herbal Oil Composition

S.no	Constituents	Qty (100ml)
01	<i>Murraya koenigii</i>	14gm
02	<i>Azadirachta indica</i>	7.5gm
03	<i>Ocimum tenuiflorum</i>	7.5gm
04	<i>Hibiscus rosasinensis</i>	4gm
05	<i>Aloe barbadensis</i>	2gm
06	coconut oil	Q.S upto 100 ml

EVALUATION PARAMETERS

The formulated herbal hair oil was subjected to physical evaluation.

Sensitivity test: The prepared polyherbal hair oil was applied on 1cm skin of hand .And exposed it to direct 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, and 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 accurately 0.56 g of KOH pellets and dissolve it in 100 ml of distilled water and stir it 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 = $5.61V \cdot N / W$ Where, V = Volume of potassium hydroxide used (ml). N = Normality of potassium hydroxide. W= Weight of sample (g).

Saponification value : Accurately weigh 1g of oil sample into a 250ml conical flask and 10ml of ethanol : ether mixture (2:1) was added. To flask, add 25ml of 0.5N alcoholic KOH . And Keep the flask 30 min for reflux then cool it. 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

Various evaluation parameters was performed, pH of the formulated polyherbal hair oil was found to be in between 6 to 7, and it was suitable for human skin. The acid value of hair oil was found to be 1.90. Acid value is used to show rancidity of oil. Other evaluated parameters listed in Table 1.

Table 1: Evaluation of Herbal Hair oil

Evaluation parameter	Results
Color	Greenish black
Odour	Pleasant
Ph	6.4
Acid value	1.90
Saponification value	181
Viscosity	32.40
Specific gravity	0.93

The presence of various phytochemicals in *Murraya koenigii* like Koenimbine, koenine Mahanimbine, Koenigine [7,8] makes useful for treatment of hair dandruff, hair fall and Curry leaves , boiled with

coconut oil are reduced to blanked residues that are then used as a powerful hair tonic for retaining and maintaining natural hair tone, hair growth stimulation and prevention of premature growing of hair [2, 5-9].

CONCLUSION

The Formulated herbal hair oil having minimal or no side effects. All the results of evaluation parameters found to be good and effective remedy for hair growth and hair loss treatment.

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CONFLICT OF INTEREST

Author doesn't have any conflict of interest.

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