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Formulation and evaluation of poly herbal hair oil

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Abstract

The concept of the present study involves the preparation of poly herbal hair oil by using various herbal ingredients like Amla, Bhringaraj, Watermelon seeds, Curry leaves, Methi etc. Herbal cosmetics are now-a-days widely used for daily life because they have fewer side effects and with a better safety and security profile. The present work was aimed to formulate a poly herbal hair oil for application in hairs using various herbs. We have used two formulas using different herbal drugs and both the formulation are showing anti-hair fall property with some of other beneficial activities like antidandruff activity, improves blood circulation to the scalp and roots, reduce hair pigmentation, reducing the whitening of the hair. The formulated herbal hair oil was evaluated on various parameters such as organoleptic properties (Colour, sensitivity, grittiness, sedimentation) Viscosity, Acid value, pH etc. and are reported in this work.

Keywords: Cosmetics, herbs, poly herbal hair oil, evaluation, formulation

Introduction

Hair is one of the most important part of the body as it impact the beauty and overall appearance of any individual. For hair care we often use various hair care products for cleansing, modifying the texture of hair, treatment of the stressed hair and providing nourishment to the hair. Generally we are using various synthetic products for hair care and hair treatment. Sometimes these synthetic products are showing few to many unwanted side-effects instead of treating the particular problems. In order to come out from this issues we have formulated Poly herbal hair oil by using various types of oils like coconut oil, almond oil, castor oil, onion oil and bhringaraj oil and various drugs like Amla, Neem leaves, Curry leaves, Hibiscus, Spring onion, Tulsi, Jatamansi, Muskmelon seeds, Watermelon seeds etc.



Fig 1: Ingredients

Neem leaves and castor oil shows Anti-microbial activity and promotes hair growth. Curry leaves and spring onion helps to treat the scalp infections. Bhringaraj oil helps to prevent baldness. Tulsi oil and Jatamansi promotes hair growth. Almond oil is rich in vitamin E and strengthen the hair. Traditionally coconut oil were used prominently because it gets easily absorbed into the hair strands, shows hair growth as well as it is affordable by the common people. Here we have admixture coconut oil with other oils like almond oil, bhringaraj oil, castor oil and some suitable herbal drugs in order to formulate a Poly herbal hair oil. Here we have used two formulas using different herbal drugs and both the formulation are showing anti-hair fall property with some of other beneficial activities like anti-dandruff activity, improves blood circulation to the scalp and roots, reduce hair pigmentation, reducing the whitening of the hair.

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After formulation the poly herbal hair oil was evaluated on various parameters such as organoleptic properties (Colour, sensitivity, grittiness, sedimentation) viscosity, Acid value, pH, Specific gravity etc. The obtained results were found to be satisfied the requirements of poly herbal hair oil.

Methodology

Materials used

All the materials used were of pharmaceutical or analytical grade. (LR/AR)

Table 1: List of Herbs Used

Sl. No.	Name of the Herbs	Uses
1	Bhringaraj oil	Prevents baldness
2	Amla	Hair conditioner
3	Neem leaves	Anti- microbial activity
4	Curry leaves	Moisturizes the scalp
5	Hibiscus	Thickening of hair
6	Spring onion	Treats scalp infection
7	Tulsi	Prevents hair loss
8	Jatamansi	Promotes hair growth
9	Muskmelon seeds	Resulting in lustrous hair
10	Coconut oil	Moisturizer, stimulates hair growth unclogging pores
11	Till oil	Promotes hair growth and antigreying activity
12	Almond oil	Rich in Vitamin E and strengthen the hair
13	Castor oil	Antimicrobial, antiviral and promotes hair growth
14	Jasmine oil	Fragrance
15	Watermelon seeds	Prevents hair loss and deeply hydrates hair

Procedure

- The herbs used in the present study for making herbal hair oil were dried, crushed, and passed in sieves and it was used in coconut oil base. The hair oil was prepared by utilizing five different formulas.
- First is direct boiling method in which crude drugs were powdered and directly boiled in Coconut oil, till oil, Almond oil, Castor oil with continuous stirring and heated until the drug completely gets extracted into the oil base.

Formulation 1

Table 2: Ingredients of formulation 1

Ingredients	Quantity (%)
Coconut oil	60%
Till oil	15%
Amla	4%
Almond oil	4%
Water melon seeds	2%
Castor oil	3%
Curry leaves	2%
Methi leaves	2%
Hibiscus	2%
Jasmine	1%
Bringaraj oil	5%

- Accurately weigh all the dried and fresh herbs and leaves.
- Mix required quantities of Coconut oil, Castor oil, Till oil, Bringaraj oil and Almond oil as mentioned in the above table no: 2
- Add watermelon seeds, dried amla, methi leaves, curry leaves, hibiscus, dried neem to the oil mixture.
- Then boil up to 30 minutes under low flame.
- After that the whole preparation was filtered using muslin cloth.
- Add Jasmine oil for Fragrance.

Formulation 2

Table 3: Ingredients of formulation 2

Ingredients	Quantity (%)
Coconut oil	60%
Bhringaraj oil	4%
Till oil	15%
Almond oil	4%
Tulsi	4%
Castor oil	3%
Jatamansi	4%
Musk melon seeds	2%
Nimba	2%
Jasmine	2%
Coconut oil	60%

- Collect and weigh all herbal products such as Bringaraj oil, Tulsi, Jatamansi, Muskmelon seeds, Nimba and Jasmine
- Add Coconut oil, till oil, Almond oil and Castor oil as mentioned above table no: 3.
- Boil herbal products in the above oil formulation up to 30mins.
- Keep aside for overnight.
- Filter the whole preparation by using muslin cloth.
- And collect the final herbal hair oil in the bottle.

Evaluation parameters

Evaluation test for hair oils

Prepared poly herbal hair oil was estimated for product performance which includes physicochemical parameters.

1. Organoleptic Property

- Color:** Detected by naked eyes.
- Sensitivity:** Applied to the skin and exposed to the sunlight for 5 minutes to check for any irritation over skin.
- Sedimentation:** Keep the whole preparation aside for overnight and check for sedimentation.
- Grittiness:** Rubbed to the skin and observed.

2. pH Determination

Take a pH paper and dip into the formulated hair oil and check for the color change.

3. Viscosity Measurement

The viscosity of prepared herbal hair oil was estimated by Ostwald's Viscometer at a room temperature. The viscosity of prepared herbal hair oil was calculated by using the equation,

$$\text{Viscosity of liquid } (\eta_2) = \frac{\eta_1 \times f_2 \times t_2}{f_1 \times t_1}$$

η_1 = Viscosity of water

ρ_2 = Density of sample

t_2 = Mean time of oil from A to B

ρ_1 = Density of oil

t_1 = Mean time of flow of water from A to B.

4. Acid Value

10 ml of oil was added with 25ml of ethanol and 25ml of ether. Phenolphthalein was added as indicator and titrated with 0.1M Potassium hydroxide solution

n = Number of ml of 0.1M KOH

w = Wt. of oil

5. Specific Gravity

Specific gravity of the prepared oil was determined using specific gravity bottle.

6. Stability Study

It is performed by keeping the prepared herbal hair oil in a closed container at cooled and dry place.

Results and Discussion

Table 4: Organoleptic Property

Formulations	Color	Sensitivity	Grittiness	Sedimentation
F1	Dark greenish brown	No Irritation	Smooth	No Sedimentation
F2	Light	No Irritation	Smooth	No Sedimentation

Table 5: pH Determination

Formulation	pH value
F1	6.2
F2	6

Table 6: Viscosity Determination

Formulation	Viscosity(centipoise)
F1	0.94
F2	0.94

Table 7: Acid Value

Formulation	Acid Value
F1	5.2
F2	5.1

Table 8: Specific Gravity

Formulation	Specific gravity
F1	1.01
F2	1.02

Stability Test

It is observed that the prepared five formulations are stable throughout the shelf life for 3 months.

Conclusion

The herbal extracts and constituents chosen for the formulation of hair oil were reported to have hair growth, relaxation, anti-dandruff, hair thickening, and hair fall control properties, which when used together in promoting healthy and shiny hair growth. The formulated hair oil will help in maintaining good growth of hair, not only that it also provides turning grey hair to black, protects from dandruff, reduces stress etc. It provides various essential nutrients required to promote natural hair growth. Formulation was done and evaluated by means of various parameters like pH, organoleptic properties (colour, grittiness, sensitivity, sedimentation) acid value, viscosity, specific gravity, and

stability test. At last, it can be concluded that the poly herbal hair oil formulations have significant quality.

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