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## **FORMULATION AND DEVELOPMENT OF POLYHERBAL HAIR OIL**

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### **ABSTRACT**

Herbs are used as an integral part of health care system. In present work, we have formulate Antifungal Antibacterial constituent containing polyherbal hair oil. The aim of present study involves preparation of polyherbal hair oil using fresh leaves of various plants. The prepared herbal oils were subjected to phytochemical screening, General characterization, Physical and Biological evaluation. Prepared oil was evaluated and confirmed to be free from sensitivity reaction and good for hair growth. The values in the evaluation of finished product showed that they are within the acceptable limits.

**Keywords:** - Antifungal, Antibacterial, Polyherbal Hair Oil.

## INTRODUCTION

Bioactive materials and pharmaceutical product are used to prepare a herbal hair oil. Various herbal ingredients used in formulation have dual significance, one is used as cosmetic and another is enhance the biological function of body, which results in naturally healthy hairs.

It is ancient methodology which is discovered by the Ayurveda traditional system. Chemical drugs are gives a quick action but it having different side effect. Because of that, an ancient time research was focused on naturally synthesized medicine.in cosmetic industries, Indian herbs are mostly used.

Herbal hair oil is used to nourish the hair and to enhance natural hair growth. The formulation was applied in hair disorder such as hair falling, dandruff symptom.

The betel leaves are full of vitamins like vitamin C, thiamine, riboflavin and carotene. The methanolic extract of leaves of P.Betel has antibacterial and antifungal activity. Garlic oil containing selenium, which helps boost blood circulation for nourishment and promotes hair length, thickness and strength and scalp health without any side effect. [5]

## MATERIALS AND METHODS

The leaf of betel, leaf of garlic, Arendal oil was purchased from local market of Kolhapur. And Azadirachta indica Linn was collected from botanical garden of town hall.

**Table No. 1:**

Sr. No.	Name of Ingredients	Part Used	Formulation Compositions (%w/w)		
			F1	F2	F3
1.	Betel leaf	Leaf	8.3	2.5	1
2.	Garlic oil	Leaf	8.3	11.25	12
3.	Azadirachta indica Linn.	Leaf	8.3	11.25	12
4.	Arendal oil	Oil	100	100	100
5.	Camphor	Powder	400	400	400

### Preparation of oil

1. Ingredients were weighed accurately and oil was measured as per requirement.
2. Plant material was dried to remove moisture.
3. Whole material was boiled for 1 hour and cooled.
4. Material was strained and pure liquid was taken [2].

### Physicochemical evaluation of oil

Table No. 2:

Sr. No.	Parameters	Obtained Values		
		F1	F2	F3
1.	Colour	Dark Brown	Chocolate Brown	Yellow Green
2.	Specific Gravity	0.795	0.796	0.796
3.	pH	6.5	6.6	6.7
4.	Acid Value	2.07	2.05	2.07
5.	Saponification Value	112.89	112.88	112.90

### Evaluation Parameters

The Formulated herbal hair oil was subjected to physical evaluation. [1]

#### Specific Gravity

Take the specific gravity bottle, rinse it with distilled water. Dry it in oven for 15 min, cool, close it with cap and weigh it (a). Now, fill the same specific gravity bottle with the sample and close it with cap and again weigh it (b). Determine the weight of sample per ml. by subtracting the weight (b-a).

#### Viscosity

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

## **pH**

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

## **Acid Value**

Measure 10 ml. oil and dissolve in 25 ml of ethanol and 25 ml of ether mixture and shake. Add 1 ml of phenolphthalein solution and titrate with 0.1 molar KOH solution.

$$\text{Acid value} = 5.61V * N / W$$

Where, V= Volume of standard sodium hydroxide used (ml),

N= Normality of the sodium hydroxide solution,

W = Weight of the sample (g).

## **Saponification Value**

Accurately weigh 1 ml of oil into 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 added. Keep the flask for 30 min, and the flask was cooled. The cooled solution was titrated against 0.5 N HCl using phenolphthalein as indicator. Similarly, the blank titration was performed without taking oil (sample). The amount of KOH in mg used was calculated.

$$\text{Saponification value} = 28.05 * (B - S) / W$$

Where, S = ml of KOH required to neutralize the substance, B = ml of KOH required for blank and W = Weight of the sample taken for the test (g).

## **RESULTS AND DISCUSSION**

Color and odor of the oil sample were typical of their constituents. The pH of oil was found to be 6.8 which was relevant with human skin.

## Evaluation of herbal hair oil

Table No. 3:

Evaluation Parameters	Results optimized batch F3
Specific gravity	0.796
Viscosity	1.96
Acid value	2.07
Saponification value	112.90
pH	6.7

## CONCLUSION

In general, the herbal formulation provides good blend of antibacterial, antioxidants, terpenoids, and essential oils. All the values in the evaluation of finished product showed that they are within the acceptable limits. Hence, it is concluded that the oil is beneficial in maintaining good growth of hairs, turning grey hairs to black, providing protection from dandruff, and results in lustrous hairs.

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