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# STANDARDIZATION PARAMETER OF DIFFERENT MARKETED HERBAL HAIR OIL

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## ABSTRACT

Hairs gain ground the overall appearance of the person and protect the scalp from ultraviolet light, cushion round the head and insulate the skull. Hair care products are used for cleansing, modifying the texture of hair, changing of the color, giving life to the stressed hair, providing nourishment to the hair and giving the healthy appearance to the hair. Herbal hair oils are used for curring disorders of hairs such as baldness, aggression of hair, discoloring of hair, hair falling, and dryness of hair etc. There are so many brands of herbal hair oils are available in the markets. Good activity and comparatively few or nil side effects of herbal hair oils attract and make more attention towards them. Three herbal hair oils (Bajaj Brahmin Amla hair oil, Dabur amla hair oil and Patanjali Amla oil) are investigated for physicochemical parameters like pH, density, viscosity, organoleptic properties, acid value etc. Present research work suggests the selected parameters may be used for characterization and standardization of herbal hair oils.

**KEYWORDS:** Herbal hair oils, physicochemical parameters, Acid value, Saponification value etc.

## INTRODUCTION

Study and design of hair preparation is much more depends on knowledge of hair. Hair is one of the essential sections of the body and considered to be supporting structure of the integument along with sebaceous glands, sweat glands and nails. Hairs gain ground the overall appearance of the person and protect the scalp from ultraviolet light, cushion round the head and insulate the skull. There are 1,00,000 - 2,00,000 hairs are on head. Growth rate of scalp hair is between 0.27- 0.40mm per day.[2]

Hair growth occurs in cycles consisting of three phases.[6]

- Anagen (growth phase): Most hair is growing at any given time. Each hair spends several years in this phase.
- Catagen (transitional phase): Over a few weeks, hair growth slows and the hair follicle shrinks.
- Telogen (resting phase): Over months, hair growth stops and the old hair detaches from the hair follicle. A new hair begins the growth phase, pushing the old hair out.

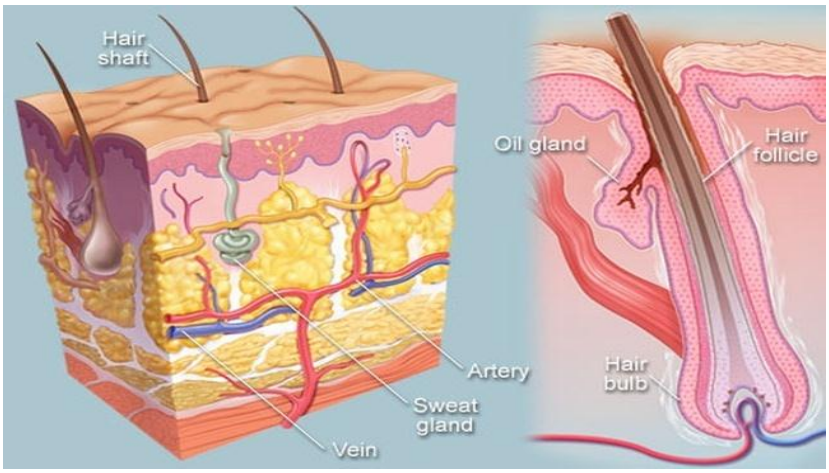


**Fig. 1**

The cosmetics in general are external preparations and are meant to be applied to external parts of the body. Cosmetics may be applied to skin, hair and nails for the purpose of covering, colouring, softening, cleansing, nourishing, waving, setting, modification, preservation, removal and protection. Hair care products are used for cleansing, modifying the texture of hair, changing of the color, giving life to the stressed hair, providing nourishment to the hair and giving the healthy appearance to the hair. Herbal hair oils are used for curring disorders of hairs such as baldness, aggression of hair, discoloring of hair, hair falling, and dryness of hair etc.[6] Present study was conducted to standardize the some herbal hair oils on physicochemical parameters as mentioned by Bureau of Indian standards.[8]

## MATERIAL AND METHODS

Bajaj Brahmin Amla hair oil, Dabur amla hair oil and Patanjali (Kesh kanti Amla) oil were purchased from local market from Mathura.

**Evaluation parameter of Herbal hair Oil**

**Identification of Organoleptic properties on different marketed herbal hair oil.**

Colour, odour, were determined on different marketed herbal hair oil.

**Viscosity**

Viscosity is a measure of the resistance of a fluid which is being deformed by either stress or tensional stress. Thoroughly clean the viscometer. Mount the viscometer in vertical position on a suitable stand. Fill dry viscometer upto g mark. Count the time required in seconds for hair oil sample to flow from mark A to B. Repeat three times. Determine the densities of the liquids. The viscosity was determined using Ostwald's viscometer.[5]

**Density**

Density of material is defined as its mass per unit volume. It is determined by following formula Density = mass of oil / volume of oil in Specific gravity bottle.[5]

**Specific gravity**

Take the specific gravity bottle, rinsed it with distilled water, dry it in oven for 15 minutes, cool, closed it with cap and weigh it (a). Now fill the same specific gravity bottle with the sample and closed it with cap and again weigh it (b). Determine the weight of sample per milliliter by subtracting the weight (b-a).[5]

**pH**

pH of different marketed herbal hair oil was determined by pH meter.

**Chemical Evaluation of Herbal Hair Oil**

**Acid value**

**Preparation of 0.1 molar solutions:** Weighed 0.56 g KOH pellets and dissolved in 100 mL of distilled water and stirred continuously. The prepared 0.1 molar KOH solution was filled in the burette. Preparation of sample: Measured 10 mL oil and dissolved in 25 mL of ethanol and 25 mL of ether mixture and shaked. Added 1 mL of phenolphthalein solution and titrated with 0.1 molar KOH solution.[7]

**Saponification value**

Accurately weighed 1 mL of oil into a 250 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. Kept the flask for 30 min. and the flask was cooled. The cooled solution was titrated against 0.5 N HCl using

phenolphthalein indicator. Similarly the blank titration was performed without taking oil (sample). Amount of KOH in mg used was calculated.[7]

## RESULT AND DISCUSSION

In present study physicochemical evaluation was carried out on Bajaj Brahmin Amla hair oil, Dabur amla hair oil and Patanjali (Kesh kanti Amla) oil. The various standard tests were performed and the test shows following results as below in Table No. 1.

**Observation table for physicochemical parameters of different marketed herbal hair oil**

| S. No. | Parameter | Marketed herbal hair oil | | |
|---|---|---|---|---|
| | | Bajaj Brahmi Amla hair oil | Dabur amla hair oil | Patanjali (Kesh kanti Amla) oil |
| 1. | Colour | Dark green | Seaweed green | Shamrock green |
| 2. | Odour | Characteristic | Characteristic | Characteristic |
| 3 | Viscosity | 37.41 | 28.32 | 28.29 |
| 4 | Density | 0.79 | 0.82 | 0.84 |
| 5 | pH | 7.0 | 7.5 | 7.3 |
| 6 | Specific gravity: | 0.78 | 0.8 | 0.76 |
| 7 | Acid value | 0.8 | 0.9 | 0.86 |
| 8 | Saponification value | 181 | 183 | 182 |

## CONCLUSION

In general, Herbal hair oils are used for curing disorders of hairs such as baldness, aggression of hair, discoloring of hair, hair falling, and dryness of hair etc. All the values in the evaluation of herbal hair oil showed that the test oil complies the requirements for physicochemical parameters prescribed by BIS. Hence, it is concluded that herbal hair oil is beneficial in maintaining growth of hairs, turning grey hairs to black, providing protection from dandruff, and used for cleansing, modifying the texture of hair.

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