

**NATURAL HAIR CARE PRODUCTS: A REVIEW ON HERBAL SHAMPOO
FORMULATION AND EVALUATION**

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ABSTRACT

Herbs and then checked and compared its physical and chemical features with shampoos that are already available on the market, both synthetic and herbal products. Hair plays a key role in how attractive someone appears, and the way it looks can show if someone is healthy. Because of this, there have been recent developments in hair science and care techniques, as shown in studies that talk about new ideas and methods for treating hair and making beauty products. Shampooing is the most common way to take care of hair. Shampoos are mainly used to clean the hair and the scalp. Right now, it doesn't look like herbal shampoos, even though they work better and are safer than chemical ones, will become very popular among people. A more extreme change might be needed.

KEYWORDS: Herbal Shampoo, Natural Shampoo, Ayurvedic Shampoo, Plant-based Shampoo, Ingredients, Formulation/Preparation, and Evaluation Parameters.

INTRODUCTION

Hair is an important part of how someone looks overall. Many people experience hair problems such as thinning hair, lack of volume, early graying, poor conditioning, and hair loss. Shampoo is a type of cosmetic product used to clean the scalp and hair. It comes in a convenient form for easy use.^[1]

There are many kinds of shampoo that people use to clean their hair. These shampoos come in different forms like liquid, cream, gel, and foam from a can, or even as powder.

The main types of shampoo include

- Regular shampoo
- Conditioning shampoo
- Special care shampoo
- Shampoo that is used often^[2]

Shampoo is a key part of hair care. It is made to clean the scalp and hair by taking away dirt, oil, pollution, and germs.^[3]

Shampoo is typically used on wet hair, rubbed into the strands, and then washed out with water. Its main job is to clean the hair by removing dirt and buildup without

taking away too much of the natural oil. Today, there are many kinds of shampoo available, including both medicated and non-medicated options made from synthetic ingredients. However, herbal shampoo has become more popular because it comes from natural sources, making it safer for use and free from harmful side effects.^[4]

It is very hard to make a herbal shampoo from just one natural ingredient that is gentler and safer than synthetic ones, while still being as effective in terms of foaming, cleaning power, and consistency. Because of this, we decided to create a pure herbal shampoo using plants that are traditionally and commonly used for hair washing in India and the Gulf region, especially in Oman.^[5]

MATERIALS AND METHODS**Collection of the herbs**

The different parts of the plants were chosen for the study because they have hair care properties.

The plants used include meth powder, Hibiscus flower (Hibiscus rose), Neem leaf (Azadirachta indica), Shikakai fruit (Acacia conking), Aloe leaf (Aloe barbadensis), Soap nut (soap berries), Amla (Emblica officinalis), Reetha (Sapindus mukorossi), Black sesame seeds, and Fenugreek powder.

Aloe Vera Extraction

The gel was extracted from Aloe Vera leaves by removing the exudates and scraping out the mucilage using a blunt-edged knife. The mucilage was then

blended thoroughly in a blender to make it smooth. This mixture was then strained through a muslin cloth and filtered.^[6-7]

Ingredients and Uses of Herbal Shampoo^[8-13]

Sr.No	Common Name	Common Name	Image	Uses
1	Shikakai [5% W/V]	Acacia Concinna		Helps hair grow, stops hair loss, fights dandruff, and makes dull hair look lively and shiny. It works as a conditioner because it has a lot of saponins, which are natural foaming agents, and helps keep the hair healthy and balanced
2	Aloe Vera [5% W/V]	Aloe Barbadensis		Aloe Vera is used in herbal shampoos. It helps reduce inflammation, which can ease dandruff symptoms like itchiness. The antifungal and antibacterial qualities of Aloe Vera may prevent dandruff, balance the scalp's pH, and promote healthier hair growth. Aloe Vera effectively cleans the hair shaft, removing extra oil and buildup from the hair.
3	Reetha [5% W/V]	Sapindus mukorossi		Helps cool the skin and clean it well, and stops the scalp from getting dry.
4	Neem [5% W/V]	Azadirachta indica [A.Juss]		Use this herbal shampoo to clean your scalp and clear clogged pores, which helps improve hair growth. It is very important for treating dandruff because it has antiseptic and healing qualities.
5	Hibiscus	Hibiscus Rosa-Sinensis		The best ingredient for hair helps it grow, regrow, and prevents hair loss. It contains amino acids, Vitamin A, C, alpha hydroxyl acids, and other important nutrients that are great for hair and the scalp. It keeps the scalp healthy and reduces the risk of dandruff.
6	Amla [5% W/V]	Emblica officinalis		Help your scalp and hair become stronger, encourage more hair growth, lower the chances of losing hair, and stop or treat infections caused by fungi or bacteria on the scalp and hair.

7	Fenugreek	Trigonella foenum – graecum L.		This product is high in protein and contains mucilaginous fiber that helps keep the hair strands moisturized and strengthens the natural barrier.
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Preparation of Herbal Plant Extract

All the herbs were measured carefully using a digital scale. The raw herbs were gathered and each was ground individually with a hand-operated mixer into a fine powder. This powder was then passed through a sieve numbered 120. Each portion was then mixed with 100 ml of distilled water and boiled until the water was reduced to one quarter of its original amount. Once boiled, the mixture was cooled to room temperature and then filtered using a muslin cloth to obtain the final filtered extract.^[6-7]

checking its physical and chemical properties. These included measuring the pH, density, and how much foam it makes.

For the organoleptic properties, we looked at the product and noticed the following:

- Colour: Brown
- Odour: Aromatic
- State: Liquid
- Consistency: Viscous^[14]

Preparation of Herbal Shampoo

Take a bowl and add Shikakai, Reetha, Amla, Fenugreek and Hibiscus powder

Mix them well to get in equal composition

Later add Black sesame seeds powder and add neem powder

Mix all the components for 15-20 min with Aloe vera gel

Heat the total mixture on a Hot plate

Add Sodium carboxyl methyl cellulose and Preservative

Cool the mixture and finally add rose water



2) PH

The pH of the herbal shampoo made with distilled water (10% volume to volume) was checked using a pH meter at room temperature.^[15]



3) Foaming Stability

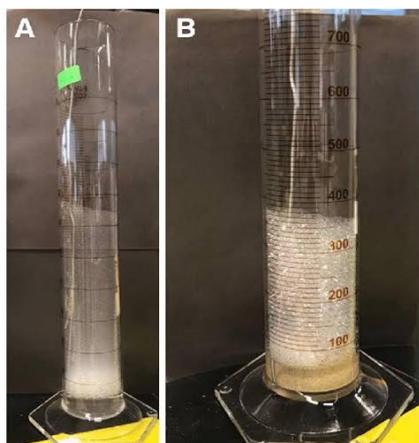
The stability of the foam was checked using the cylinder shake method. About 50 ml of the shampoo solution (1%) was poured into a 50 ml graduated cylinder and shaken vigorously 10 times. Foam stability was measured by noting the foam volume after 1 minute and 4 minutes of shaking. The total foam volume was recorded after 1 minute of shaking. From the consumer's perspective, foam stability is an important factor in a

Evaluation parameters

1) Organoleptic properties

To check the quality of the prepared formulations, we did some tests like looking at the product visually and

shampoo. The formulated shampoo produces a foam volume of more than 10 ml. The prepared shampoo creates uniform, small, compact, dense, and stable foam.^[14]



4) Surface tension

Surface tension reduction is a way that helps shampoos clean better. When herbal shampoos lower the surface tension of water, which is normally 72.8 dyne per centimeter, it shows they work well as a cleanser. The shampoo made in this study had a surface tension of 200 dyne per centimeter.^[16]



5) Testing of wetting

The wetting time was calculated by measuring the time it took for the canvas paper to sink completely. A canvas paper weighing 0.44 g was cut into a disc with a diameter of 1 inch. This disc was placed on the surface of the shampoo (1% v/v), and the time it took for the paper to sink was recorded using a stopwatch.^[17]



CONCLUSION

The main goal of this study was to create a herbal shampoo that helps reduce hair loss and supports the growth and strength of hair.

The shampoo was made using the water-based extracts of medicinal plants that are traditionally used for cleaning hair. Instead of using synthetic conditioning agents, which can cause hair loss by reducing protein, this study used natural ingredients like shikakai, amla, and other plant extracts to provide effective conditioning benefits.

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