

Development and Assessment of a Herbal Shampoo Containing Hibiscus Extract

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ABSTRACT:

The formulation and evaluation of an herbal hibiscus shampoo made from natural ingredients including hibiscus extract, amla powder, soap nut powder, aloe vera, pure almond oil, camphor, and rose water. The primary objective was to develop a gentle and effective shampoo that combines the benefits of herbs with modern formulation techniques. The formulation was evaluated for its physicochemical properties, including pH, viscosity, foamability, washability, spreadability, etc. The product demonstrated good cleansing properties, conditioning effects that left the hair soft and mild antimicrobial activity beneficial for scalp health. Stability testing indicated that the formulation was physically stable under various conditions, maintaining its consistency and effectiveness. Additionally, the shampoo had a pleasant fragrance, smooth texture, and was easy to apply and wash. The herbal hibiscus shampoo is a good natural alternative to synthetic shampoos, offering a combination of gentle cleansing, scalp care, and environmental friendly ingredients, etc. the use of natural ingredient exfoliate hair growth and provide healthy hair conditions.

I. INTRODUCTION:

Traditional shampoos often contain harsh chemicals that can strip the hair of its natural oils and lead to long-term damage. Shampoos on the other hand, offer a natural alternative that nourishes the hair while promoting scalp health and overall hair wellness. Formulating and evaluating a shampoo enriched with hibiscus extract, tapping into the natural beauty trend and offering consumers a safer, more sustainable option for hair care. By harnessing the power of hibiscus, a plant renowned for its hair-strengthening and nourishing properties, we aim to revolutionize the way people approach hair care, providing them with a luxurious

and effective solution that aligns with their desire for natural beauty products. Emphasizing Consumer Preference for Herbal Products in recent years, there has been a noticeable shift in consumer preferences towards herbal and natural products in the beauty industry. This trend is driven by a growing awareness of the potential harm caused by synthetic chemicals found in traditional beauty products. Consumers are actively seeking safer and more sustainable alternatives that offer the benefits of nature without compromising on effectiveness.

As a result, herbal products have gained popularity, with an increasing number of individuals choosing plant-based formulations for their beauty routines. Introducing the Focus on Hibiscus and Its Benefits for Hair Care Hibiscus, a flowering plant known for its vibrant blooms, also possesses remarkable properties beneficial for hair care. Rich in vitamins, minerals, and antioxidants, hibiscus nourishes the hair and scalp, promoting strength, shine, and overall hair health. Its natural emollient properties help moisturize and condition the hair, reducing dryness and frizz. Additionally, hibiscus contains amino acids that strengthen hair follicles, preventing breakage and promoting growth. By incorporating hibiscus extract into our shampoo formulation, we aim to harness these incredible benefits and offer consumers a luxurious and effective solution for their hair care needs. If this effectively emphasizes the consumer preference for herbal products and introduces the focus on hibiscus and its benefits for hair care. Shampoos are essential personal care products designed to cleanse the scalp and hair while maintaining their health and appearance.

**HERBS AND EXCIPIENTS PROFILE:
HIBISCUS(rosa-sinensis)****Figure 01:- Hibiscus**

Hibiscus (genus *Hibiscus*) is a diverse group of flowering plants in the mallow family Malvaceae. Known for their large, showy flowers. The genus includes various species, some common ones being *Hibiscus rosa – sinensis* which is widely cultivated for their beauty and various uses. Hibiscus has traditionally been used in hair care for promoting hair growth, preventing hair fall, and conditioning the scalp. According to studies, hibiscus extract is rich in flavonoids, amino acids, and mucilage that help strengthen hair roots and add shine to hair.

AMLA POWDER (Phyllanthusemblica)**Figure 02:- Amla Powder**

Amla powder is derived from the *Phyllanthusemblica* tree belongs to family Phyllathaceae. Also known as Indian gooseberry is a natural ingredient used in traditional Ayurvedic medicine and for hair and skin care. Amla is a potent source of Vitamin C and antioxidants. It is known to nourish the scalp, cleaning, stimulate hair growth, and prevent premature greying. It also

helps in strengthening hair follicles and improving hair texture.

SOAP NUT POWDER (sapindusmukorossi)**Figure 03:- Soap Nut Powder**

Reetha, also known as Indian soapberry, washnut, or soap nut, is a tree in the Sapindaceae family. It is native to India, particularly the Western coastal regions, and is also found in other parts of Asia. The tree's fruits are used for various purposes, including cleaning, hair care, and medicinal applications..

ALOE VERA (Aloe barbadensis Miller)**Figure 04:- Aloe Vera**

Aloe vera is a succulent plant belonging to the Asphodelaceae family, formerly known as Liliaceae. It is a perennial herb with fleshy leaves that store water, making it drought-resistant. The genus *Aloe* contains numerous species, with *Aloe vera*, also known as *Aloe barbadensis* Miller, being the most commonly used for medicinal and cosmetic purposes.

PURE ALMOND OIL (Prunusdulcis)



Figure 05:- Almond Oil

Commonly known as almond, is a deciduous species in the rose family Rosaceae native to parts of the Middle East and cultivated globally as a food crop Almond oil is versatile oil derived from the kernels of almond trees, specifically *Prunus Amygdalus*. It's used in both the food and cosmetics industries for various purposes

CAMPHOR (*cinnamomumcamphora*)



Figure 06:- Camphor

Camphor has antimicrobial and cooling properties. It is commonly used to soothe itching and improve blood circulation to the scalp.

ROSE WATER (*Rosa damascene*)



Figure 07:- Rose Water

Rose water is derived from the Rosaceae family, specifically from the *Rosa* genus. Rose water is known for its fragrance, soothing, and mild astringent properties. It helps maintain scalp pH balance and adds a natural scent to the shampoo.

FORMULA TABLE:

Ingredient	Nature	Role In Shampoo	Quantity
Hibiscus Extract	Active Herbal Ingredient	Promotes Hair Growth, Strengthens HairRoots, And Provides Natural Conditioning.	15ml
Amla Powder	Active Herbal Ingredient	Provides Nourishment, Cleaning, Lowers, Hair Fall, Acts As Natural Antioxidant.	5gm
Soapnut Powder	Active Herbal Ingredient	Natural Surfactant And Foaming Agent; Cleanses Hair And Scalp.	15ml
Aloe Vera Gel	Active / Excipient	Soothes Scalp, Provides Miniaturization, And Improves Hair Texture.	3.75ml
Almond Oil	Excipient (Emollient)	Conditions And Softens Hair; Adds Shine And Helps Treat Dryness And Split Ends.	2ml
Camphor	Excipient (Agent/Preservative)	Provides A Cooling Effect, Improves Scalp Circulation, And May Reduce	0.75gm

		Dandruff (Antimicrobial)	
Rose Water	Excipient (Base/Vehicle)	Acts As An Aqueous Base; Provides A Pleasant Fragrance And Maintains pH Balance.	Q.S

Table 01: Formula Table

PROCEDURE:

Mix all herbal extracts (hibiscus, amla, soap nut) in a clean glass beaker. Add aloe vera gel slowly with continuous stirring to ensure uniform mixing. Add pure almond oil while stirring gently. Add camphor (finely crushed) and stir until completely dissolved. Add rose water to make up the final volume to 50 ml. Stir the mixture continuously for 10–15 minutes to obtain a homogeneous solution. Allow the formulation to stand undisturbed for 24 hours for stabilization. Transfer into a clean, labelled shampoo bottle.

STORAGE: Store in an airtight, opaque bottle away from direct sunlight and heat.

PRECAUTIONS:

- 1) Keep away from direct sunlight
- 2) Avoid contact with eyes: Shampoo can irritate the eyes, so be careful not to get it in your eyes.
- 3) Don't swallow shampoo: Shampoo is not meant to be ingested.

EVALUATION TESTS AND RESULTS:

1. **pH measurement:** The pH of the formulated shampoo was found to be 5.2.
2. **Viscosity test:** The viscosity of the shampoo was measured to be 950 cps.
3. **Foam ability test:** The shampoo produced moderate to high foam immediately after application, with foam lasting approximately 2 to 3 minutes.
4. **Wetting or spread ability test:** Wetting time was between 5 to 10 seconds in 2 to 3 batches.
5. **Colour and appearance:** The shampoo had a clear appearance with a mild light pinkish brown colour derived from the hibiscus extract.
6. **Stability Testing:** The shampoo maintained its appearance, viscosity, and pH after the stability basically at room temperature with normal humidity.

FORMULATION VISUALS:



Figure 08: Extraction of various herbs



Figure 09: Mixing Process



Figure 10: Weighing of required herbs



Figure 11: Final Product

II. CONCLUSION:

The study successfully formulated & evaluated herbal shampoo using *Rosa-sinensis* (Hibiscus) and other natural ingredients. Plants, herbs, and ethno-botanicals have been used since the early days of humankind and are still used throughout the world for health promotion and treatment of disease. The herbal hibiscus shampoo formulated, shown good physicochemical properties, effectiveness, and stability also different ingredients helps in promoting healthy hair care. Hibiscus is well known for its rich vitamin content and antioxidants properties. The shampoo shows good cleansing and conditioning properties, with additional benefits such as attractive fragrance and

good texture. The shampoo is safe, effective, and stable for regular use, making it a likely replacement for synthetic shampoos. While avoiding the adverse effects associated with synthetic shampoos. The evaluation parameter includes pH, stability, foamability, viscosity and spreadability. Compared to other marketed shampoos, herbal shampoos gives great result which shows their potential as safe, non-harming and consumer- preferred alternatives in cosmetic industries.

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