

Significance of Some Herbs in Formulation of Herbal Shampoo

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ABSTRACT:

Shampoos are cosmetic products used to cleanse hair by clearing the hair shaft and scalp of dirt and grease. The industry offers a wide range of synthetic shampoos for different purposes. Dry hair and keratin loss are two adverse impacts of these synthetic shampoos on the hair and scalp. Herbal shampoos are now a common alternative to synthetic shampoos due to their long history of use and safe chemical composition. Herbal shampoo is a cosmetic preparation created with herbs that is meant to cleanse the hair and scalp, just like regular shampoo. It is claimed that many of the herbs used in herbal shampoos are good for hair. Developing and evaluating a poly-herbal shampoo with herbal ingredients for cosmetic purposes is the aim of this study. Hibiscus powder, neem powder, henna powder, amla powder, shikakai powder, ritha powder, and aloe vera powder were among the powders and gels that were bought from the neighborhood market. The powder from the banyan root and soy milk are produced at home. After that, these components are mixed, and their physico-chemical and organoleptic characteristics are evaluated. Herbal shampoo promotes healthy hair free of debris, oil, dandruff, and lice by washing hair while also conditioning and smoothing the hair's surface. Above all, the gains to safety are expected. The benefits of herbal cosmetics include their non-toxicity, ability to lessen allergic reactions, and plenty of ingredients that have been proven to work over time. Therefore, we have found that herbal shampoo has good features in the current study and have further maximized its benefits for human usage as a cosmetic.

Keywords: Cosmetic, Herbal shampoo

I. INTRODUCTION

Hair is a fundamental aspect of human beauty. Sebum synthesis, apocrine sweat, pheromones' production, thermoregulation, and protection from environmental aggressors are just a few of the many roles played by human hair. Cleaning the hair is the primary function of hair care products. Furthermore, it provides the hair a

healthy appearance, nourishes it, and modifies its texture. Shampoo is the most often used hair care product. It can be used to remove dirt, residue from previous hairstyle products, and pollutants from the environment from the hair and scalp. It is available as a powder and a viscous liquid. Shampoos are now far more versatile than they were in the past, when they were just used to clean the hair and scalp. After washing, it is simple to use and leaves hair manageable, lustrous, and combable. Nowadays, the market offers a wide range of shampoos for different uses, such as herbal, synthetic, medicated, and non-medicated shampoos. The herbal shampoos that appear to have the best purity, safety, and efficacy are the most popular. The most popular hair care product is shampoo. It can be used to clean the hair and scalp of debris, pollutants from the environment, and residue from prior hairdo products. It comes in two forms: a viscous liquid and a powder. In the past, shampoos were just used to clean the hair and scalp; today, they are utilized for much more purposes. It is easy to use and leaves hair combable, shiny, and manageable after washing. These days, a variety of shampoos for various purposes are available on the market, including herbal, synthetic, medicated, and non-medicated shampoos. The most widely used herbal shampoos seem to offer the highest levels of efficacy, safety, and purity. herbal cosmetics because to their inexpensive price and few side effects.

Shampoos are probably the most common cosmetic item. We frequently apply it for washing scalps along with scalp. shampoo is essentially a detergent solution that contains the right compounds for extra advantages like better hair conditioning, lubrication, and medication. Customers are increasingly interested in herbal shampoo because they believe it is safe and has no negative effects because it comes from natural sources, despite the fact that there are numerous washing products that are chemical-based, natural, medicinal as well as natural today. Synthetic surfactants are primarily used in shampoo to foamy as well as cleansing, extended. Utilizing those detergents may result in eye inflammation of the head of hair discomfort, hair

loss. Although it can be impossible create products made entirely from plant components, herbal shampoo recipes is considered a viable substitute for synthetic ones. Because of their alleged therapeutic effects for hair, many medicinal plants are frequently found within shampoos formulations.

These plant materials can be used in crude, powdered, refined extract, or derivative form. It can be quite difficult to create a herbal shampoo with only one natural ingredient that is as gentle, safe like a artificial ones but with strong competitiveness in solids material, bubbling along with detergency. Therefore, we considered making a pure herbal shampoo with plants that have long been utilized to hair cleansing in especially India. When Reetha and Sheekakai are shaken with water, their high saponin concentration produces a rich lather. They have also been demonstrated to benefit various organ systems, including the skin. Vitamin C-rich amla fruit is utilized with shampoo and conditioner procedures for use hair growth promoter, and strengthening agent. Four saponin glycosides are said to be present, which aid in eliminating extra sebum without producing negative side effects. Additionally, saponins have antifungal and antibacterial properties, which makes them crucial components of cosmetic products. Nowadays, many are worried about their hair because of the rise in pollution, which damages it. Pollutants have a negative impact on hair, causing split ends, roughness, slow hair development, a loss of sheen, and hair loss. Shampoo can solve all of these hair issues, however synthetic shampoos, which are composed of chemicals, have negative effects on hair. Natural components that have a natural predisposition to act as cleaners are used in polyherbal shampoos. They have a positive consequences for hair lacking causing each negative adverse consequences. Organic substances are beneficial due to their inherent purity.^[1, 2]

Herbal Shampoo:

1. Herbal shampoos, an mixture of either liquid as well as solid powdered surfactants that is intended to cleanse hair's grime, debris without damaging health of hair or scalp as a whole. 2. As a natural and safer substitute for the synthetic shampoos on the market, it is regarded as a cosmetic product that incorporates herbs or plant-based ingredients.^[3]

3. One of the most popular hair care products in daily life, shampoos are used primarily to clean the scalp and hair by eliminating dust, debris, excess oil, and other impurities.

4. In order to ensure adequate cleansing, shampoo is often applied to damp hair, massaged into the scalp and hair roots, and then thoroughly rinsed with water.

5. Herbal shampoos are designed to keep the natural balance of sebum on the scalp intact in addition to removing debris, keeping the hair lustrous, healthy, and free from irritation or dryness.^[4]

6. Because they are natural, safe, devoid of dangerous chemicals, along with without any adverse reactions to natural shampoos is greater in popularity than synthetic or artificial shampoos.

7. They are produced and sold in a variety of forms, such as powder, liquid, lotion, cream, jelly, and spray, in addition to specialty varieties like baby shampoos, conditioning shampoos, antidandruff shampoos, and two-layer shampoos.

8. Herbal shampoos offer the hair several advantages, including increased natural shine, thicker hair strands, improved moisture retention, strengthened roots, and a reduction in excessive hair loss.

9. Since ancient times, when humans relied on natural resources for both medical and cosmetic purposes, herbs and natural extracts have been used for hair washing, beautifying, and maintenance.^[5]

10. Herbal goods, such as shampoos, are a popular and sustainable choice for maintaining hair care and attractiveness because they are inexpensive, efficient, and devoid of serious side effects.

Need of shampoo:

Shampoo is necessary because sebum, a greasy material secreted by the scalp skin, is present. It is designed to cover the entire head, protecting the hair. That lends an ideal gloss to scalp, although when it released in big quantities, it makes the hair look unclean. Traders in early colonial India rewarded themselves with a daily bath that included body and hair massage washing (champu). When they returned to Europe, they embraced and spread the new practices they had picked up, such as using a hair treatment they called shampoo.^[6]

Human hairs:

About 65–95% of human hair is made up of weight-based amino acids, having the remaining 32% being fatty components, liquid along with additional substances. Keratin, a protein with a high sulfur concentration, makes up around 80% of human hair. The lamination component contains protein that, using assistance about particular using assistance about flexibility. Hair's many

structural elements work together to produce its physicochemical characteristics and appearance, with proteins playing the most important role. Hair follicles dictate the style of hair: large follicles produce "terminal" hair, tiny follicles generate "vellus" hair, which is found on the body; and wavy is produced by bent roots across multiple varieties.^[7]

Ideal properties of herbal Shampoo :

1. Clay and dust, stationary sweat or other greasy supplies, detached. The lens neurons need to all correctly, completely taken out of the hair.
2. proper the quantity of foamy needs to be produced in order to fulfill mental requirements of consumer.

3. It ought to come off easily after being cleaned with water.

4. This hair should be easy to handle, silky, lustrous, and non-dry.

Human hairs; Parts of the Hair:

Dermal papillae:

In addition to having androgen receptors that are sensitive to DHT, the dermal papilla is in charge of regulating hair's growth pattern as well as growth.^[8]

Bulb outer coat of roots:

The outermost, keratinized portion of the hair is called the outer root sheath. Three components make up the inner root sheath: the cuticle, the Huxley layer, and the Henley layer.

STRUCTURE OF HAIR:^[9,10]

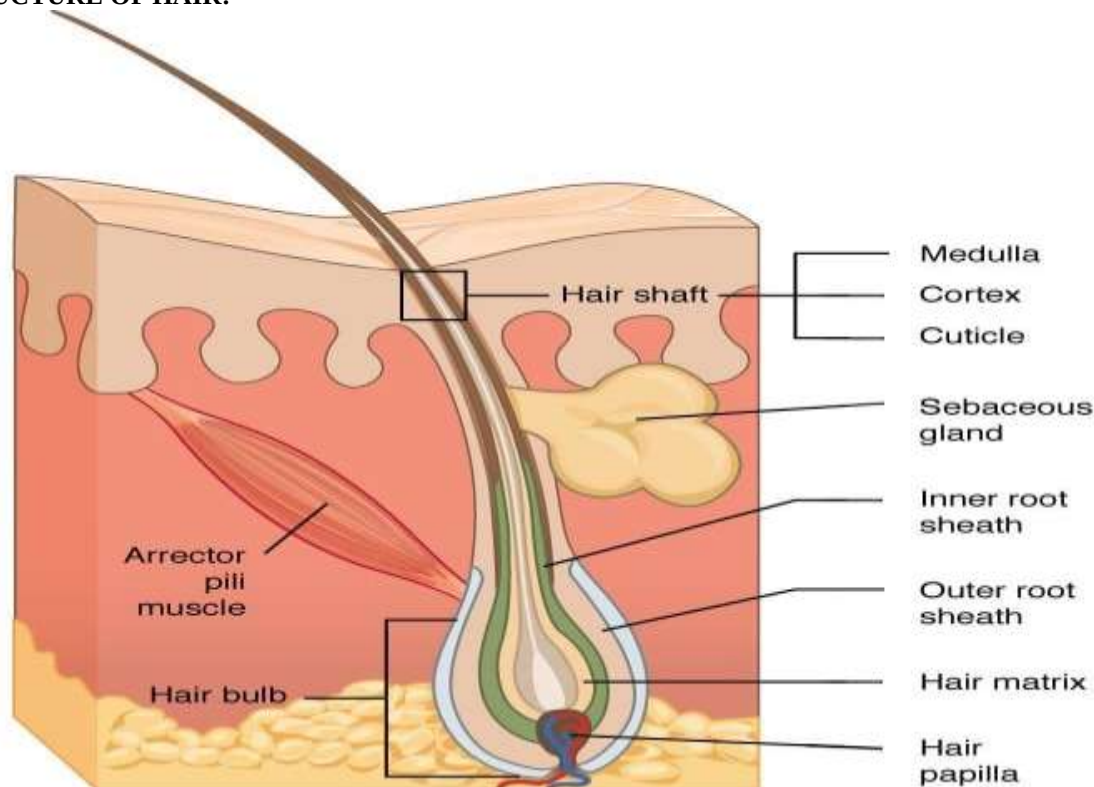


Fig.No.1:Structure Of Hair

A hair is a thin, thread-like projection that emerges from a skin follicle. Every part of the body has hair, with the exception of the lips, palm, and sole. The structural proteins that make up the skin's outer layer and nails are what make up hair.

The cuticle, cortex, and medulla in some circumstances are the three layers that comprise the hair shaft. Nearby, cuticle cells that are flat and

square in shape are securely joined to cortical cells. The distal free edge points upward due to cuticle cell movements near the periphery, creating a large overlap. These imbrications are significant. They facilitate the follicular anchoring of the hair during growth by interacting with the cuticle cells of the inner root sheath. Furthermore, it is simpler to remove debris and desquamated cells from the

scalp thanks to their imbricated surfaces. The cuticle's crucial barrier and protective properties protect it from physical and chemical damage.

As tissues move between the hair bulb and create cortical, their morphologies get more and more fusiform. These cells firmly unite and line up simultaneously with shaft's direction. protein known as axially strands, often referred to as microfibrils, that are packed inside each cortical cell are composed of several hard α -keratin intermediate filament molecules. A macro filament is created whenever multiple tiny fibers unite to produce a bigger particle comprises more than half of the cortex's substance—is created. The cortex, which also includes melanin, makes up the majority of the shaft.

HAIR PROBLEMS:

Hair loss: The main reason why people lose their hair is Stress, medications, hormone changes, and various hair style products can all make hair loss worse. **Oily or Dry hairs:** The causes of sticky hairs can be the excessive grease production on the hairline. Sometimes the sebaceous glands "work overtime," generating an excessive amount of oil in addition to sebum. **Dandruff:** Part A harmless, harmless skin disorder that can lead to fall of hairs. It has a spiny or follows its hair Rooting **Weak hair:** Dry hair is brought on by a diet low in proteins. Menopause, anemia, hormonal imbalances, and birth control drugs can all cause dry hair.

Split ends with: In addition to various causes, split ends occur when the ends of the hair get dry. herbs that are used to treat hair issues.^[11]

HISTORY:

Throughout Many plants or its preparations had widely utilized as cleansers throughout Indian subcontinent from Old days. An extremely efficient late wash was created by using dry Indian gooseberry (Amla) to boil sapindus & few additional plants, then utilizing filtered liquid. The tropical tree Sapindus, also known as ksuna, is extensively distributed throughout India and is frequently referred to as soapberries or soap nuts. Fruit pulp and A spontaneously produced surfactant that saponins can be described From old India texts. In Indian texts, the lather created by soapberry extract is called phenaka.

It makes hair silky, shiny, and manageable. Hibiscus blooms, Ar apps Albizzia amara), Shikakai (Acacia concinna), and Rita (Acacia mukorossi).were among the other Washing the hair ingredients. This 16 centuries, Guru

Nanak, the religious founders or first Master, mentioned soap and the soapberry tree.^[12]

Functions of Shampoo:

1. It should remove dirt or soil thoroughly and effectively.
2. The hair should be successfully washed.
3. To please the user, it should generate a sufficient amount of foam.
4. Rinsing with water should easily remove .
5. 1. It should smell nice on your hair.
6. It cannot cause skin and eyes irritation and has other unfavorable effects.^[13]

Classification of Shampoo:^[14]

1. Based on Appearance
2. One powdered shampoo.
3. Lotion water shampooing and shampoo
4. Gel or solid shampoo
5. Shampoo with four creams
6. Oil-based shampoo
7. Medicated shampoo or other anti-dandruff shampoo

Based on Use or Function

1. shampoo for conditioning
2. Shampoo for antidandruff
3. Shampoo for therapy Shampoo for babies,
4. Balancing Shampoo
5. Clarifying Shampoo

Based on origin :

Herbal shampoo

Advantage^[15]

- They are more environmentally friendly because they are made of natural, biodegradable materials. Rich in herbs, essential oils, and plant extracts, they support hair development and strength by nourishing the scalp and hair roots.
- They reduce dryness and irritation by cleaning the hair and scalp with natural substances instead of harsh chemicals.
- Free of potentially harmful synthetic compounds, such as parabens and sulfates, which lowers the risk of hair damage and allergies.
- It can make hair feel silky and smooth and helps manage problems like dryness and dandruff.
- Shampoo keeps hair and scalp clean and fresh by removing sweat, oil, grime, and toxins from the environment.

- Shampoo makes hair appear healthier, shinier, and easier to manage by eliminating buildup.
- The practice of washing one's hair can be calming and stress-relieving.

DISADVANTAGES:^[16]

- Dryness, flakiness, and even irritation can result from frequent or inappropriate use that removes the natural oils from the scalp.
- Sulfates and other harsh shampoo ingredients can deplete hair of its protective oils, resulting in split ends, dryness, and breakage.
- Sensitive scalps may experience allergic reactions, redness, or itching from some substances.

Certain components, such as certain sulfates, have been connected to both hair loss and a reduction in new hair development.

- Other substances, such as silicones, can build up on the scalp and hair, obstructing the flow of nutrients and moisture and perhaps leading to dandruff.
- Shampoo bottles' plastic packaging adds to pollution, and certain chemical constituents have an adverse effect on the environment.
- It takes time and money to buy and use shampoo and related items like conditioner on a regular basis.

Aim And Objectives:

Aim:

The research of extracts from *Sapindus mukorossi*, *Acacia concinna*, and *Emblica officinalis* is for herbal shampoo formulation is not well documented in the literature.

Objective:

- To gather, verify, and prepare the plant components (*Sapindus mukorossi*, *Acacia concinna*, and *Emblica officinalis*).
- Must use the appropriate solvents to make extracts of the chosen plants.
- To screen the extracts for phytochemicals in a preliminary manner. to combine the extracts in the right amounts to make a shampooing using herb.
- To evaluate it prepared herbal shampoo's physicochemical characteristics, including stability, surface tension, pH, foaming capacity, and viscosity.
- To evaluate the herbal shampoo's cleaning, conditioning, and antifungal qualities.

- To evaluate the herbal shampoo's performance against that of commercially available synthetic and herbal shampoos.

• HERBS APPLIED TO HAIR Condition:^[17]

Shikakai: Remember If your mother washed our hair with Shikakai? Thanks to our mother, shikakai is a fantastic plant for good hair. *Acacia concinna*, another name for the ayurvedic herb shikakai, is a natural tonic and cleanser for the scalp. Its high content of phytochemicals and vitamin C reduces dandruff, itching, and dryness of the scalp. Shikakai is rich in antioxidants, which promote hair development naturally.



Fig. No.2 : Shikakai

Brahmi:

Brahmi oil contains an alkaloid that produces a proteins to organically strengthens & repairs hair to be released by the body. Brahmi lower cortisone, the natural stressful protein, which is one of the causes of hair loss. Brahmi also helps to improve blood circulation in the scalp. Brahmi is a great herb for thickening and encouraging hair growth.



Fig.no.3 :Brahmi

Amla:

The Indian gooseberry, or *Phyllanthus emblica*, is a great hair conditioner. Amla is a crucial component of any skin and hair care routine because of its high vitamin C content. It has antioxidants and vital fatty acids that assist to fortify hair follicles and give hair a glossy, robust appearance. Because it helps dissolve oil and debris from follicles and remove dandruff, amla is generally good for the health of the hair and scalp.

**Fig.No.4: Amla****Fenugreek or Methi:**

Every Indian kitchen must have these seeds. Its seeds are the greatest ayurvedic medication since they are rich in proteins, folic acid, vitamins A, C, and K. Nicotinic acid, a protein found in fenugreek seeds, is useful for treating dandruff, hair loss, and other scalp conditions.

**Fig. No.5:Fenugreek****Aloe vera:**

It calms and reduces inflammation over your head. It was applied to prevent fall of hairs for along time. It is also an excellent at-home remedy for hair damage and dandruff. Aloe vera gel aids in restoring the pH balance of the scalp and encourages hair development.

**Fig.No.6 Aloe Vera****Ritha:**

Naturally antimicrobial or antiviral properties, It can aid in dandruff or has be use to millennia as an against hair loss shampoo. Soap nut, or *Sapindus mukorossi*, are a fantastic hair tonic that has historically being ecognized because of its advantages for a clean skin or hair. In addition to cleansing, natural saponins give hair body and shine, giving it a softer, thicker, and more silky feel.

**Fig.No.7 :Ritha****Hibiscus:**

It is employed to lessen grey hair or promote hair growth. Dandruff or hair loss can be treated with the use of Plants protein with

mucilage present in its foliage or blooms. Hibiscus infusions are great as a final rinse since they give red hair a touch of warmth, improve slide, and help detangle naturally curly hair.



Fig.No.8 : Hibiscus

Henna:

Since ancient times, the powdered leaves of this plant have been utilized as a natural color. When used Henna, as others plants like cacao & purple, may create a wide range of beautiful hues in addition to imparting a brownish. Henna may be used as a coating on hair shafts with deep moisturizer, seal in moisture, or increase sheen.



Fig.No.9 : Henna

Lavender:

Stress is known to contribute to hair loss. A natural treatment for stress and stress-induced hair loss is lavender oil. It smells soothing. Scottish researchers have found a safe and effective method of treating alopecia areata: using lavender essential oil and a carrier oil (grapeseed or jojoba) to massage the scalp.



Fig.No.10 :Lavender

Preparation of Plant Extract:

A computerised balance was used to weigh each plant precisely. The raw herbs were gathered, and each one was ground into a fine powder using a hand-driven mixer. The fine powder was then put through a sieve number 120 and combined with 100 milliliters of distilled water, which was then brought to a boil until the water was reduced to a quarter. The extract was boiled, allowed to cool to ambient temperature, and then filtered through muslin cloth to get the final filtrate^[18]

Evaluating criteria for herbal shampoos:^[19-25]

External appearance:

Consumers typically evaluate shampoos based on their visual appearance, which includes the formulation's colour, clarity, and fragrance.

pH: With a pH detector set to at normal temp(252 °C), the shampoo's pH values was measured in 1 percent or 10 percent solution.

Dirt dispersion: Ten milliliters of diluting soap 1 A drip of Indian dye were added to a 1% shampoo solution with water; the test container was then sealed and shook ten times. It was judged that there was none, mild, moderate, or substantial ink in the foam. Shampoos that concentrate the ink in the foam are regarded as being of poor grade. The water part ought to keep the dirt in it. Remaining dirt within the froth would be hard to rinse out will end up back on the hair.

Rheological assessment: A viscosity of the liquid is measured with a capillary viscometer, specifically an Ostwald viscometer. The duration taken by the liquid to move from mark A to mark B is measured when it passes via an arterial tube. The duration of flow for a fluid being tested is compared to that of a reference sample with known viscosity

Test for Skin Dryness: The formulated Antibacterial herbal shampoo was applied to the skin for five minutes on the following which Its skin is examined for indications of inflammation or discomfort.

Washability: After putting shampoo on your hands, wash your hands.

Wet Duration: The duration of wetting a substance based on how concentrated it is. While the official test is Drave's test, As it is easy to use and saves time, the cloth disc method is usually used. Discs made of canvas paper and having a smooth surface were positioned on top of the herbal solutions for shampoo, and the stopwatch was initiated. The duration it took want the disk is start The soaking rate is noted as falling.

II. CONCLUSION:

Conclusion: By utilizing herbal natural extracts, formulation seeks to provide a stable and efficient shampoo that minimizes adverse reactions or promotes a healthful hair. This shampoo's pH set to 5 while maintaining the scalp's toxic skin. In order to achieve successful conditioning effects, the study recommends employing plant extracts and including Shikakai, Amla, and others instead of synthetic compounds. Formulators are in charge of altering consumers' perceptions of what constitutes a decent shampoo and raising the general standard of hair.

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