

A REVIEW ON HERBAL SHAMPOO**Disha A. Deulkar*, Pooja R. Hatwar, R. L. Bakal, N. B. Kohale and J. A. Kubde**

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Article Received on
24 October 2023,

Revised on 14 Nov. 2023,
Accepted on 04 Dec. 2023

DOI: 10.20959/wjpr202322-30502



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ABSTRACT

The herbal shampoo is a natural product. The herbal shampoo not only cleanses the hair but also provides conditioning, smoothing, and overall hair health, ensuring the absence of dandruff, grease, and lice. Its greatest advantage lies in its safety benefits, as herbal cosmetics are known for their non-toxic nature, minimizing allergic reactions and leveraging the proven effectiveness of various components. This review not only highlights the positive properties of herbal shampoo but also explores the optimization of its benefits as a cosmetic product for human use. Specifically, the study focuses on identifying harmful synthetic elements present in traditional cleansers and replacing them with safe, natural ingredients.

KEYWORDS:- Beautifying agent, Herbal Shampoo, Eclipta Prostrata, Sapindus Indica, Evaluation of shampoo.

INTRODUCTION

Since ancient times, humans have learned a lot from nature to care for health, skin and hair as natural ingredient with preventive, protective, and corrective properties, making them a valuable resource in the realm of cosmetics. Nature provides so many versatile nature ingredients that can enhance the beauty of both skin and hair. Hair serves as an external indicator of internal body conditions, and shampooing is the most common method of hair treatment.

The primary purpose of shampoo is to cleanse the hair by removing accumulated sebum, dust, scalp debris, and other impurities. Different shampoo formulations cater to various hair types, care habits, and specific issues like oily hair, dandruff, and androgenic alopecia.^[1]

Shampoo, typically in the form of a viscous liquid, is a liquid or cream preparation containing soap or detergent specifically designed for hair washing. The goal of using shampoo is to effectively eliminate build-up between strands while preserving a manageable amount of sebum.

Shampooing remains the most widely practiced form of hair treatment, with shampoos primarily serving as cleansing agents for both hair and scalp. Herbal shampoo are shampoo that infused with the extracts of natural ingredients. These shampoos have ability to yield superior and long-lasting results. They are formulated without harsh chemicals, ensuring minimal damage to the hair. Natural cosmetics are popular one all over the world as they convey the impression of having better purity, and safety. The cleansing action of the synthetic cleansers/shampoo aims basically to remove oil content from the hair leaving the hair dry and damaged, whereas herbal shampoos aim at delivering essential nutrients to the hair and at the same time has a mild cleansing effect to remove the unwanted oily content.^[2] Herbal shampoos are the cosmetic preparations that consists of traditional and ayurvedic herbs which are meant for cleansing the hair and scalp just like the regular shampoos.^[3] Added shampoo functions include lubrication, conditioning, body building, anti-static, medicinal, etc. Finally, the entire shampoo formulation must be medically safe for long-term use.^[4] A more radical approach in popularizing herbal shampoo would be to change the consumer expectations from a shampoo, with emphasis on safety and efficacy. The word shampoo in English is derived from Hindustani shampoo. Shampoos are typically composed of 10 to 30 ingredients.^[5]

OBJECTIVE^[2,6]

The objectives of using shampoo can be summarized as follows:

- 1. Cleansing action:** Shampoo serves the primary purpose of cleansing the hair, removing dirt, oil, and other impurities accumulated on the scalp and strands.
- 2. Oil removal:** Shampoo helps to eliminate excess oil from the hair, preventing it from appearing greasy or weighed down. However, excessive use of shampoo can lead to dryness and damage, so it's important to find a balance.
- 3. Nutrient delivery:** Some shampoos are formulated to deliver essential nutrients to the hair, such as vitamins, minerals, and proteins. These ingredients can help nourish and strengthen the hair strands.

4. **Texture improvement:** Shampoo can contribute to improving the texture of the hair, making it smoother, softer, and more manageable.
5. **Darkening hair colour:** Certain shampoos may contain ingredients that can darken or enhance the natural colour of the hair, providing a subtle change in shade.
6. **Gloss and Manageability:** Shampoos are designed to impart a glossy appearance to the hair, enhancing its shine and luster. Additionally, they help maintain the manageability of the hair, preventing tangles and making it easier to style.
7. **Functions of the Scalp and Skin layers:** Understanding the functions of the scalp and the different layers of the skin is essential to provide proper care and treatment during shampooing.
8. **Scalp manipulation:** Proper manipulation of the scalp, including massaging and exfoliating techniques, is a crucial part of the shampoo service. It helps to promote blood circulation, remove dead skin cells, and maintain a healthy scalp.
9. **Demonstrating Shampoo and Conditioning procedures:** Providing a step-by-step demonstration of the correct shampooing and conditioning procedures helps ensure that clients can follow the process effectively and achieve the desired results.

Advantages^[7,3,8,9]

The advantages of using herbal shampoo include:

1. **Pure and Organic ingredients:** Herbal shampoos are formulated with pure and organic ingredients derived from nature, without the use of synthetic chemicals. This ensures a more natural and wholesome approach to hair care.
2. **Less side effects:** Due to their natural composition, herbal shampoos are generally associated with fewer side effects compared to shampoos containing artificial ingredients. They are gentle on the scalp and less likely to cause irritation or allergic reactions.
3. **Skin-Friendly:** Herbal shampoos are designed to be gentle and nourishing to the scalp and skin. They help maintain the natural pH balance of the scalp, promoting a healthy environment for hair growth.
4. **Eco-Friendly:** Herbal shampoos are environmentally friendly as they often utilize sustainably sourced ingredients and are produced using eco-friendly practices. They are biodegradable and have a lower impact on the environment compared to shampoos with synthetic chemicals.

5. **Cost-Effective:** While prices may vary, herbal shampoos can often be cost-effective in the long run. Their natural ingredients promote overall hair health, reducing the need for additional hair treatments or products.
6. **Cleansing properties:** Herbal shampoos effectively cleanse the hair, removing dirt, oil, and impurities. They help maintain hair hygiene, leaving the scalp and strands feeling fresh and clean.
7. **Treating scalp conditions:** Herbal shampoos often contain ingredients that help address specific scalp conditions, such as dryness or flakiness. They provide nourishment and moisture to the scalp, promoting a healthier scalp environment.
8. **Treatment for hair loss:** Certain herbal shampoos are formulated to address hair loss concerns. They may contain ingredients that help strengthen the hair follicles and promote hair growth.
9. **Relieves Itch and Irritation:** Herbal shampoos with soothing ingredients can provide relief from scalp itchiness and irritation, making them suitable for individuals with sensitive scalps.
10. **Repairs damaged hair:** Herbal shampoos can help repair and restore damaged hair by providing essential nutrients and hydration to the hair strands. They can improve hair texture and reduce breakage.
11. **Keeps hair Beautiful and Blossomed:** Herbal shampoos nourish and enhance the natural beauty of the hair, promoting healthy and vibrant-looking locks.
12. **No artificial ingredients:** Herbal shampoos are free from artificial ingredients such as synthetic fragrances, colours, and preservatives, making them a more natural and wholesome choice for hair care.
13. **No animal research:** Many herbal shampoos are produced without conducting animal testing, aligning with ethical principles and cruelty-free practices.

Disadvantages^[10,3]

While herbal shampoos offer numerous benefits, there are some limitations and considerations to be aware of:

1. **Difficult to hide Odour and Taste:** Due to the use of natural ingredients, herbal shampoos may have distinct odours and tastes that can be challenging to mask completely. This can affect the overall sensory experience during shampooing.

2. **Slower Effects and Long-Term Therapy:** Herbal drugs generally have a slower onset of action compared to allopathic drugs. Therefore, achieving desired results may require consistent and long-term use of herbal shampoos as part of a therapeutic regimen.
3. **Time-Consuming and Complicated manufacturing process:** The production of herbal shampoos can be more complex and time-consuming compared to conventional shampoos. The extraction and formulation of natural ingredients require careful processing and quality control measures.
4. **Sensitivity to scalp:** Some herbs used in herbal shampoos, like menthol, can be sensitive to certain individuals' scalps. This sensitivity can lead to discomfort or adverse reactions in some cases.
5. **Impact on product Uniformity and Quality control:** The use of natural ingredients in herbal shampoos can result in variations in product consistency and quality between batches. This can pose challenges in maintaining consistent product formulations.
6. **Seasonal variation of plant constituents:** The composition of herbal ingredients can vary depending on seasonal factors, such as climate and harvesting time. This variability can impact the consistency and effectiveness of herbal shampoos.
7. **Preservatives requirement:** Natural products are generally less stable compared to synthetic counterparts. Therefore, preservatives may need to be added to herbal shampoos to ensure their stability and prevent microbial growth.
8. **Inconsistency in consistency:** Batch-to-batch variations in herbal shampoos can occur, leading to inconsistencies in texture, viscosity, or overall product performance.
9. **Limitations of dry shampoo:** Dry shampoos, although convenient for quick hair refreshment, may not provide the same level of cleansing as traditional liquid shampoos. They are more suitable for temporary use and may not thoroughly clean the hair and scalp.
10. **Potential for skin allergies:** While herbal shampoos are generally considered skin-friendly, some individuals may still experience allergic reactions or sensitivities to specific herbal ingredients. It's important to be aware of potential allergies and perform a patch test before regular use. It's essential to consider these factors and individual sensitivities when choosing and using herbal shampoos.

Ideal properties of herbal shampoo^[11,6,3,1,12]

1. To make the hair Smooth and Shiny.
2. Produce good amount of foam.

3. Should not cause irritant to scalp, Skin and Eye.
4. Should completely, effectively remove dirt.
5. Impart pleasant fragrance to hair.
6. It should be fluently removed on irrigating with water.
7. It should conduct an affable fragrance to the hair.
8. After application, it should be easily removed by washing with water.

Classification of herbal shampoo^[9,13,5]

A. Based on appearance.

- a) Powder shampoo
- b) Liquid shampoo or lotion shampoo
- c) Gel shampoo or Solid shampoo
- d) Cream shampoo
- e) Oil shampoo
- f) Miscellaneous anti dandruff shampoo or medicated shampoo

B. Based on use or function

- a) Conditioning shampoo
- b) Antidandruff shampoo
- c) Baby shampoo
- d) Balancing shampoo
- e) Clarifying shampoo

C. Based on origin

- a) Herbal shampoo
- b) Egg shampoo

MATERIAL AND METHOD^[14]

Plant material

The authenticity of the herbs used in the preparation of the herbal shampoo was verified by the Department of Crop and Herbal Physiology. The plant material underwent a series of steps, including drying, powdering, and sieving, to ensure its suitability for the study. The processed plant material was then carefully stored in a well-closed container to maintain its Quality and Preserve it for future investigations.

Ingredients^[15,16, 9]**1) Amla (Emblica Officinalis)**

- **Family:** Phyllanthaceae
- **Part used:** Fruit
- **Uses:** The herbal shampoo addresses hair loss, Scalp dryness, Dandruff and Infections.

**Amla (Emblica officinalis)**^[19]

Amla, also known as "Indian Gooseberry," is derived from the Greek word for leaf flower. It contains phyllembic acid as its primary component, along with tannins like Gallic acid, Ellagic acid, and Phyllembelin. The aqueous extract of Amla is used in the formulation. Amla is a rich source of Vitamin C, Iron, and Calcium. It possesses astringent, cooling, laxative, and diuretic properties.

2) Neem (Azardirachta indica)

- **Family:** Meliaceae
- **Part used:** Leaves
- **Uses:** Prevent the dryness of hair, Flaking of hairs



Neem (*Azadirachta indica*)^[20]

Neem, also known as "Indian Lilac," is a plant native to the Indian subcontinent. Neem leaves contain various beneficial compounds like flavonoids, steroids, terpenoids, sterols, imbibing, and Salinan. The aqueous extract of Neem is used, as well as high-quality Neem oil, which is pressed from the plant. These extracts are used in formulations to control ticks, fleas, and lice. Neem possesses anti-inflammatory, antioxidant, antiseptic, and healing properties.

3) Shikakai (*Acacia concinna*)

- **Family:** Fabaceae
- **Part used:** Leaves and pods
- **Uses:**
 - i. Makes Hair Clean. Give the hairs more shine Prevents Gray's.
 - ii. Curbs Hair Loss. Prevents Gray's.

**Shikakai (*Acacia concinna*)^[21]**

Shikakai, also known as the "Fruit of Hairs," is commonly found in Asia. It acts as a natural cleanser and detangler for hair. Shikakai has a low pH and possesses various beneficial properties, including anti-inflammatory, anti-fungal, anti-bacterial, and antioxidant effects. It provides a cooling sensation when used. Remarkably, Shikakai is considered safe for daily use without causing any side effects. The pods of Shikakai contain saponins, including acacia acid and natural surfactants, which contribute to its cleansing properties for hair.

4) Aloe vera (*Aloe barbadensis miller*)

- **Family:** Asphodelaceae (Liliaceae)
- **Part used:** Leaves.
- **Uses:**

- i. Relieves a scratchy scalp. Deeply cleans greasy hair,
- ii. Consolidate, Strengthens



Aloe vera (*Aloe barbadensis miller*)^[22]

Aloe vera, a plant with thick leaves, contains a gel-like substance that serves as a raw material for treating hair care issues. It is rich in vitamins that promote cell growth and strengthen the hair.

5) Reetha (*Sapindus mukorossi*)^[16]

- **Family:** Sapindaceae
- **Part used:** Fruits
- **Uses:**
 - i. Stops hair loss, Prevents dandruff, Battles scalp infections



Reetha (*Sapindus mukorossi*)^[23]

Formulation of herbal shampoo^[4]

Typical formulation of a shampoo consists of following components:

1. Surfactants

2. Foam boosters and stabilizers
3. Conditioning agents
4. Special additives
5. Preservation
6. Sequestering agents
7. Viscosity modifiers (thickening thinning agents)
8. Opacifying or clarifying agents
9. Fragrance
10. Colour
11. Stabilizers (suspending agent's antioxidants, UV-Stabilizers)

Evaluation of herbal shampoo^[7, 4,17,2, 6]

The prepared formulation underwent evaluation for product performance, including assessment of organoleptic characteristics, pH level, physicochemical properties, and solid content. To ensure product quality, specific tests were conducted to measure surface tension, foam volume, foam stability, and wetting time, following standard protocols.

1. Visual assessment

- **Colour:** Colour of the prepared shampoo is evaluated for its colour. The colour is checked visually.
- **Odour:** Odour is found by smelling the product.
- **Transparency:** The transparency is checked visually.

2. pH Determination: The pH of the prepared herbal shampoo in distilled water 10%v/v is evaluated by means of pH analyser in the room temperature.

3. Determination of solid content percentage: Approximately 4g of the shampoo is weighed in a dry, clean, and evaporating dish. The liquid portion was evaporated by placing the dish on a hot plate. The percentage and weight of the solid content in the shampoo are calculated after complete drying.

4. Dirt dispersion: Two drops of the shampoo are added to a test tube containing 10 ml of distilled water. One drop of India ink is added, and the test tube is stoppered and shaken ten times. The amount of ink in the foam is observed and categorized as none, light, moderate, or heavy.

5. Foam stability test: The foam stability is determined using the cylinder shake method. About 5 ml of a 1% solution of the formulated shampoo is taken in a measuring cylinder

and vigorously shaken ten times. The foam volume is recorded after 1 minute and 4 minutes of shaking.

6. **Stability study:** The prepared shampoo underwent a stability study at a standard room temperature of 25-30 degrees Celsius for a duration of 4 weeks.
7. **Skin irritation test:** The prepared herbal shampoo is applied to the skin for 5 minutes, washed off, and observed for any signs of irritation or inflammation.
8. **Microbial examination:** A sterile petri dish is filled with 1 ml of the shampoo under aseptic conditions and allowed to set. The plates are then incubated at 37°C for 24 hours and observed for any microbial growth.
9. **Rheological evaluations:**^[17] The viscosity of the shampoo is measured using a Brookfield Viscometer (Model DV-1 Plus, LV, USA) with a T95 spindle. The viscosity is measured at different spindle speeds ranging from 0.3 to 10 rpm, while keeping the temperature and sample container size constant.

The functions of herbal shampoo include^[7,11,6,13,5]

1. Effective removal of dirt or soil.
2. Efficient hair washing.
3. Generation of a sufficient amount of froth.
4. Easy rinsing with water.
5. Imparting a pleasant scent to the hair.
6. Promoting hair growth.
7. Maintenance of hair colour.
8. Medicinal properties.
9. Enhancing manageability and reducing flyaways.
10. Providing a pleasant fragrance to the hair.
11. Non-irritating and free from side-effects on the skin or eyes.
12. Maintaining the hands smooth and moisturized.

CONCLUSION

The purpose of this review article is to raise awareness among individuals about the potential of traditional plants in hair care treatments. The article primarily highlights various plants and their distinctive properties, demonstrating the positive outcomes observed upon their use. Importantly, these natural remedies are shown to be free from side effects and toxicity, ensuring their safety and effectiveness for hair care purposes.

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