



A REVIEW ON HERBAL SHAMPOO

Shubham^{1*}, Painuly Neelam^{2*}

¹Student, B. Pharma, Dev Bhoomi Institute of Pharmacy and Research, Dehradun

²Associate Professor, School of Pharmacy and Research, Dev Bhoomi Uttarakhand University, Dehradun

ABSTRACT:

The pursuit of healthier, more vibrant hair has led to the rise of herbal shampoos, marking a shift towards natural alternatives in the realm of hair care. This paper delves into the evolution and characteristics of herbal shampoo formulations, exploring their advantages, limitations, and role in promoting holistic hair health. Herbal shampoos, formulated with botanical extracts and essential oils, offer a gentle yet effective approach to cleansing and nourishing the hair and scalp. With a foundation rooted in traditional remedies and natural ingredients, herbal shampoos cater to the growing consumer demand for safe, sustainable, and efficacious hair care products. The advantages of herbal shampoos are multifaceted, encompassing increased hair luster, decreased hair fall, and the preservation of natural oils essential for hair health. These formulations also boast a completely natural composition, free from harsh chemicals, making them gentle on both the skin and scalp. However, herbal shampoos are not without their limitations. Challenges such as ingredient variability, stability issues, and the need for preservatives can pose obstacles to formulation and quality control. Nonetheless, the benefits they offer outweigh these challenges, making them a compelling choice for those seeking a more natural approach to hair care. The exploration of herbal shampoo formulations exemplifies the fusion of science and nature in personal care. By harnessing the power of botanical ingredients, herbal shampoos offer a holistic solution to hair care needs, prioritizing safety, efficacy, and sustainability. As the demand for natural hair care alternatives continues to grow, herbal shampoos stand poised to play a central role in shaping the future of hair care practices.

Keywords:- Shampoo, formulation, herbal, scalp, sustainability, hair care, remedies, approach.

1. INTRODUCTION:

Hair, an essential component of the body derived from the ectoderm layer of the skin, serves as protective appendages and is classified as an accessory structure of the integument alongside sebaceous glands, sweat glands, and nails. Referred to as epidermal derivatives, they originate from the epidermis during embryonic development. Hair significantly contributes to the overall aesthetic appeal of the human body, especially the hair on the head, which has historically symbolized beauty and social status. Various artistic representations across different cultures and eras highlight the significance attached to hair. While hair grooming, shaping, and coloring have been practiced since ancient times, the focus on hair cleaning has been relatively minimal until recent centuries. The advent of cake soap and improved sanitary facilities facilitated general bodily cleanliness and personal hygiene practices. Subsequently, specialized branded shampoo products emerged, catering to diverse hair and scalp needs in various forms and types. Today, shampooing the hair and scalp has become a widespread routine, with shampoos being among the most commonly used hair care products, formulated with both synthetic and herbal ingredients.[1,2]

Hair is essential for human beauty, and hair care products are mainly designed to cleanse and enhance it. These products not only rid the hair of impurities but also enhance its texture, provide nourishment, and promote a healthy appearance. Moreover, hair serves multiple functions in humans, including protection against external elements such as sebum, apocrine sweat, and temperature fluctuations. Among hair care products, shampoo stands as the most prevalent. Available in either liquid or powder form, shampoo is applied to cleanse both the hair and scalp, eliminating dirt, residues from previous styling products, and environmental pollutants. While early shampoos focused solely on cleansing, modern formulations offer additional benefits. Besides cleansing, they leave the hair easy to manage, comb, and conveniently use. Upon application, these hair products effectively reach the scalp, ensuring thorough cleansing of both the scalp and hair.[3]

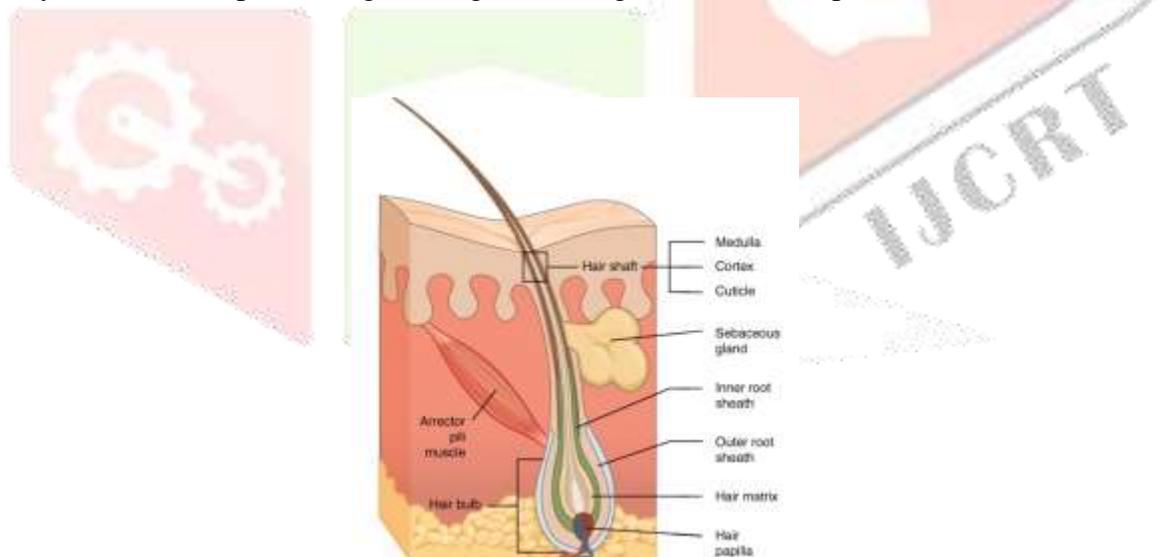


Fig 1: Hair Diagram

1.1 ANATOMY OF HAIR:

Hair primarily consists of keratin protein, comprising approximately 95% of its composition. Each strand of hair consists of a hair shaft and a hair root. Hair is essentially a protein filament that grows from follicles located in the dermis layer of the skin. The hair shaft is composed of cortex and cuticle cells, with some types of hair also containing a medulla.[4-7]

The structure of hair comprises three distinct components-

- The medulla: It is situated at the innermost layer of the hair shaft, is composed of an amorphous, soft, oily substance.[5,6]
- The cuticle: It serves as a thin protective outer layer of the hair shaft, housing beneficial nutrients for hair growth. Comprised of highly keratinized cells arranged like scales, it measures approximately 60 micrometers in length and 6 micrometers in width.[6]
- The cortex: It represents the primary component of the hair, housing lengthy keratin chains responsible for providing elasticity, suppleness, and resistance. Within the cortex, cells are interconnected by an intercellular cement abundant in lipids and proteins.[5-7]

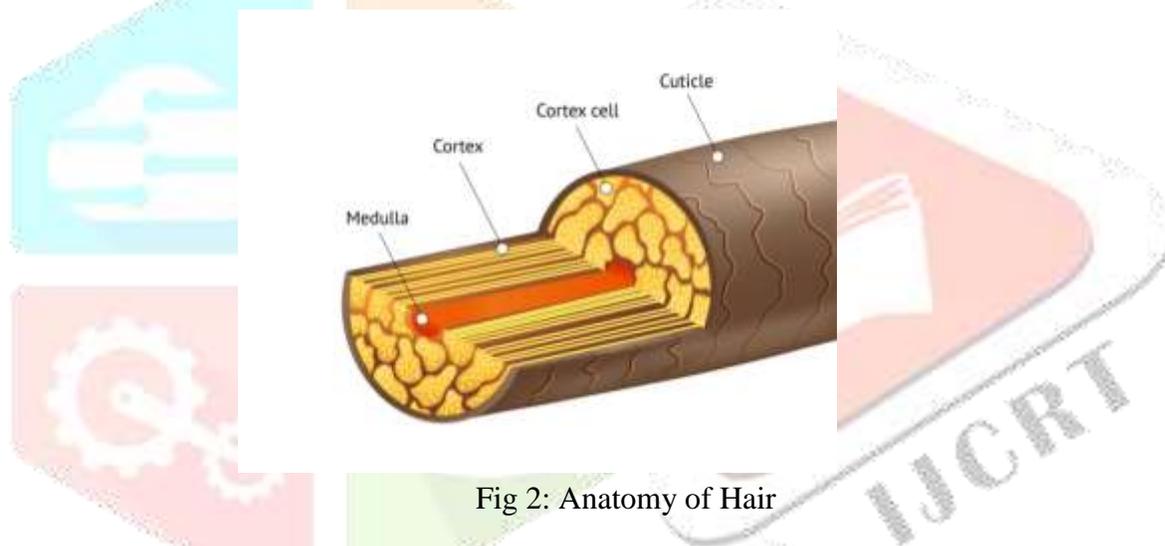


Fig 2: Anatomy of Hair

1.2 PROBLEMS ASSOCIATED WITH HAIR:

- **Dandruff:** Dandruff is a non-inflammatory, benign skin condition that impacts the scalp and can potentially lead to hair loss. It manifests as scaly flakes that adhere to the hair roots.[8]
- **Hair loss:** Stress, medication, hormonal fluctuations, and the use of numerous hair styling products are major factors contributing to hair loss.[8]
- **Dry hair:** Inadequate protein intake, menopause, anemia, hormonal fluctuations, and the use of birth control pills can result in dry hair.[8]
- **Oily hair/Greasy hair:** Excessive secretion of natural oil (sebum) by the scalp's sebaceous glands leads to oily hair. Occasionally, these glands become hyperactive, resulting in an overabundance of oil on the scalp and hair.[9,10]
- **Split Ends:** Split ends develop when the hair ends become dry, exacerbated by exposure to harsh weather conditions. Hair styling methods like straightening, curling, and the application of chemical hair products may also contribute to split ends.[9,10]

1.3 SHAMPOO:

A shampoo can be defined as a cosmetic product designed for cleansing the hair and scalp, packaged for easy application. Its main purpose is to remove accumulated sebum, scalp debris, and residues from hair products. Shampoos may also provide additional benefits such as lubrication, conditioning, adding volume to hair, preventing static charge buildup, and even medicinal properties. Ultimately, a shampoo formulation should be medically safe for extended use. Shampoos are primarily employed for cosmetic purposes, serving as hair care products for daily use. They function by cleansing both the scalp and hair. Typically, they are thick solutions containing detergents, along with additives, preservatives, and active ingredients. Application involves wetting the hair, massaging the shampoo into it, and then rinsing thoroughly with water. The aim is to eliminate accumulated dirt while preserving the natural oils on the scalp. In today's market, a variety of synthetic shampoos are available, including both medicated and non-medicated options. However, there's been a surge in popularity for herbal shampoos, prized for their natural ingredients, safety profile, and lack of adverse effects, leading to increased consumer demand.[11-14]

1.4 HERBAL INGREDIENTS BASED SHAMPOOS:

Herbal remedies or their formulations present a promising alternative to synthetic drugs. Over the past few decades, there has been a notable surge in the utilization of natural products in cosmetics. Natural botanicals can be employed in their raw state or subjected to extraction, purification, or derivatization processes to enhance their suitability for cosmetic use. A diverse array of active compounds found in various plants, such as vitamins, hormones, phyto-hormones, bioflavonoids, enzymes, tannic acid, fruit acids, amino acids, sugars, glycosides, and essential oils, are being explored for their potential applications in cosmetic formulations.[15,16]

The growing awareness and demand for herbal cosmetics stem from the belief that these products are safe and devoid of adverse effects. Nowadays, numerous herbal shampoos are readily available in the market, incorporating herbal ingredients like plant extracts and essential oils. Many plant species are recognized for their beneficial effects on hair and are commonly incorporated into shampoo formulations. [17]

1.5 SYNTHETIC SHAMPOO VS HERBAL SHAMPOO:

Synthetic shampoos often include surfactants for their cleansing and foaming properties. However, prolonged use of these surfactants can lead to adverse effects such as eye and scalp irritation, hair loss, and dryness. To avoid these issues, natural herbal shampoos are a viable alternative. Yet, formulating cosmetics solely with natural ingredients presents challenges. Despite this, there are numerous medicinal plants traditionally used worldwide for their beneficial effects on hair, which can be incorporated into shampoo formulations. These plants may be used in various forms, including extracts, powders, crude forms, or derivatives. Creating a shampoo using only one natural substance with similar efficacy to synthetic shampoos, while ensuring safety and mildness, is challenging. The ideal natural cleanser should possess good foaming, cleansing power, and solid content comparable to synthetic alternatives. Therefore, we've embarked on developing an unadulterated natural cleanser using traditional techniques and commonly used plant materials for effective hair washing.[19,20]

While herbal formulations are often seen as substitutes for synthetic shampoos, creating cosmetics solely from natural ingredients presents considerable hurdles. Nonetheless, numerous medicinal plants are known to offer beneficial effects on hair and are commonly integrated into shampoo formulations. These plant-derived products can take various forms, including powdered, crude, purified extracts, or derivatives. Crafting a herbal shampoo using only one natural material that is gentler and safer than synthetic counterparts, while also matching their foaming, cleansing, and solid content, poses a significant challenge. Therefore, our approach involves

developing a purely herbal shampoo using traditional and widely used plant materials for hair washing, particularly focusing on India and the Gulf region, specifically Oman.[21]

1.4 NECESSITY OF HERBAL SHAMPOO:

The scalp's production of sebum, an oily substance, serves as a protective barrier for the hair, coating it throughout the scalp. This natural process imparts a lustrous shine to the hair, enhancing its overall health and appearance. However, an overproduction of sebum can lead to hair looking visibly greasy and unkempt. [22]

In response to this, herbal shampoos formulated for promoting hair growth are meticulously crafted to address these concerns. These specialized shampoos aim to not only cleanse the hair and scalp but also deliver vital nutrients and essential oils directly to the hair follicles. By nourishing the roots and follicles, these herbal formulations strengthen the hair from its foundation, promoting healthy growth and enhancing overall hair health.[23]

1.6 IDEAL CHARACTERISTICS OF HERBAL SHAMPOO:

- The herbal shampoo should efficiently and thoroughly eliminate dust, soil, excess sebum, and other oily residues, as well as loosen dead skin cells from the hair, ensuring a clean and refreshed scalp and hair.[24]
- It should generate a generous amount of lather to meet the user's psychological expectation for a satisfying cleansing experience.[24]
- It should rinse off easily with water, facilitating a hassle-free removal process during rinsing.[24]
- It should leave the hair moisturized, soft, shiny, and easily manageable, with minimal frizz and flyaways.[24]
- It should leave a delightful fragrance lingering on the hair, enhancing the overall experience of using the shampoo.[25]
- It should be gentle on the skin and eyes, causing no adverse reactions or irritation.[25]
- It should not result in rough or chapped hands after use.[25]

1.7 ADVANTAGES: The advantages of herbal shampoo are as follows:

- Increased hair luster
- Decreased hair fall
- Extended retention of hair color
- Completely natural formulation, free from chemicals
- Strengthened and fortified hair strands
- Gentle on the skin and scalp, preventing irritation
- Preserves the natural oils essential for hair health

1.8 LIMITATIONS:

- The use of natural ingredients can influence the consistency and quality control of the product.
- Due to their lesser stability, preservatives may need to be incorporated.
- Plant constituents may vary seasonally.
- Certain herbs, such as lemon, menthol, peppermint, and papaya, can have stimulating effects on the scalp

2. CONCLUSION:

The exploration of hair anatomy, problems associated with hair, and the development of herbal shampoo formulations underscores the intricate relationship between personal care and well-being. Understanding the anatomy of hair, from its protein-based structure to the role of its different components like the medulla, cuticle, and cortex, provides a foundational knowledge base for addressing common hair-related issues. From dandruff to split ends, the spectrum of problems associated with hair necessitates effective solutions that balance cleansing with nourishment.

Shampoo emerges as a key player in maintaining hair health, offering not just cleansing but also additional benefits like conditioning and volume enhancement. The dichotomy between synthetic and herbal shampoos reflects a broader debate in the cosmetic industry, highlighting the consumer demand for natural, safe, and effective alternatives. While synthetic shampoos may offer immediate results, concerns regarding long-term effects drive the growing interest in herbal formulations. The necessity of herbal shampoo becomes apparent in its ability to address specific concerns like excessive sebum production while promoting hair growth and overall health. Crafting an ideal herbal shampoo requires meticulous attention to detail, ensuring not only effective cleansing but also a delightful user experience characterized by soft, shiny hair and a refreshing fragrance.

Despite their advantages, herbal shampoos also present limitations, such as variability in plant constituents and the need for stabilizing agents. However, these challenges are outweighed by the numerous benefits they offer, including increased hair luster, decreased hair fall, and preservation of natural oils vital for hair health.

In conclusion, the journey from understanding hair anatomy to formulating herbal shampoo exemplifies the fusion of science and nature in personal care. By harnessing the power of natural ingredients, herbal shampoos offer a holistic approach to hair care, catering to both aesthetic and therapeutic needs while prioritizing safety and sustainability.

3. REFERENCES:

- Kothari S, Patidar K, Solanki R. Polyherbal Anti-Dandruff Shampoo. Basic concept, benefits, and challengers, *Asian J. Pharm*, 2018, 12(3); S849-58.
- Ankule A, Wani S D, Murkute P M, Pundkar A S. Multipurpose herbal powder shampoo world j. pharm. Life sci, 2020, 6(5); 166-182.
- Gubitosa J, Rizzi V, Fini P, Cosma P. Hair care cosmetics from traditional shampoo to solid clay and herbal shampoo, *A review cosmetics* 2019, 6(13); 1-16.
- Mottram F J. Hair shampoos. In; Buffer, (eds) Poucher's Perfumes, Cosmetics and Soaps 10th ed Great Britian: academic publishers; 1993.
- Joshi N, Patidar K, Solanki R, Mahawar V. Preparation and evaluation of herbal hair growth promoting shampoo formulation containing. Piper betle and psidium guajava leaves extract, *Int J. Green pharm* 2018; 12(4); S835-39.
- Pundkar A S, Ingale S P, Formulation and evaluation of herbal liquid shampoo. *World J. pharm. Res* 2020; 9(5); 901-11.
- Hantha PN, Supraja P, Samreen S, Hrudayanjali, Qureshi M, Sandya P, Swetha T, A Review on polyherbal shampoo powder. *Int J pharm Res* 2021; 21(2); 346-63.
- Jacob Rhea, Sakthivel KM, Kannan N, Guruvayoorappan C, Formulation of costeffective herbal shampoo powder a comparative study with market shampoos. *Int J curr. Res* 2015, 7(2); 12645-49.
- Patil SS, Mane YJ, Mohite SK. Formulation and evaluation of herbal shampoo powdering J. *Adv Res* 2015;3(3);939,46.

- Snehal W, Nitin K, Vaibhav B. preparation and evaluation of antidandruff polyherbal powder shampoo, *Pharmacophore*. 2014, 5(1); 77-84.
- Vijayalakshmi A, Sangeetha S, Ranjith N. Formulation and evaluation of herbal shampoo, *Asian J pharm clin Res* 2018; 11(4); 121-24.
- Jaya Preethi P, Padmini K, Srikanth J, Lohitha M, Swetha K, Vengal Rao P.A. Review on herbal shampoo and its evaluation. *Asian journal of pharmaceutical analysis*. 2013; 3(4) 153 56.
- Kapoor VP. Herbal cosmetics for skin and hair care. *Nat prod radiance* 2005,4;306 14.
- Khushboo PS, Jadhav VM, Kadam VJ, Sathe NS. *Psoralea corylifolia* Linn “Kushtanashini” *Pharmacogn Rev* 2010, 4; 69-76.
- Srivasuki KP. Nutritional and health care benefits of amla. *J pharm* 2012; 3; 147-51.
- Shinde PR, Tatiya AU, Surana SJ. Formulation development and evaluation of herbal antidandruff shampoo. *Int J res cosmet Sci* 2013, 3; 25-33.
- Finhouse PU. Effects of *Ocimum sanctum* and *Azadirachta indica* on the formulation of antidandruff shampoo herbal shampoo powder. *Der pharm let* 2009, 1;68-76.
- Pooja A, Arun N, Maninder K. Shampoos based on synthetic ingredients vis-à-vis shampoos based on herbal ingredients; A review *Int J pharm Sci Rev Res* 2011; 7;41-6.
- Sarath C, Vipim KV, Ann RA, Lindumol KV, Arun S. Development and evaluation of antidandruff shampoo based on natural sources. *J pharm Phytother* 2013, 1,10-4.
- Tarun J, Susan J, Suria J, Susan Vj, Criton S. Evaluation of pH of testing soaps and shampoos for skin and hair care. *Indian J Dermatol* 2014, 59;442-2.
- Badi KA, Khan SA. Formulation, evaluation and comparison of the herbal shampoo with the commercial shampoo. *Ben- Suef Univ J Basic Apple Sci* 2014, 3;301-5.
- Gaud RS, Gupta GD. *Practical Physical Pharmacy*. 1st Ed New Delhi; C. B. S. Publisher and Distributer, 2001, p. 81-105.
- Mainkar AR, Jolly Cl. Evaluation of commercial herbal shampoos. *Int J Cosmet Sci* 2000, 22;385-91.