



REVIEW ON: ANTI DANDRUFF HERAL SHAMPOO

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❖ ABSTRACT :-

Shampoos are primarily been products aimed at cleansing the hair and scalp. It seems improbable that herbal shampoo, although better in performance and safer, will be popular with the consumers. A more radical approach in popularizing herbal shampoo would be to change the consumers' expectations from a shampoo. The shampoo sector is one of the largest units of among the hair care products. Majority of the ingredients in the shampoos are chemicals and have been under severe attack due to its potential risk of side effects. The aim of this study is to study how to eliminate harmful synthetic ingredients from anti- dandruff shampoo and substitute them with safe natural ingredients. Dandruff is a common disorder affecting the scalp condition caused by yeast *Pityrosporum*. Dandruff cannot be completely eliminated but can only be managed and effectively controlled. The primary signs of dandruff are redness surrounding the scalp, itching of the scalp, and the presence of pieces. Two approaches exist for treating dandruff. These include of antidandruff shampoos with chemical bases and herbal bases that contain antifungal, antibacterial, and selenium sulphide, zinc pyrithione, and other antibacterial and antifungal substances. Among the hair care product categories, shampoo is one of the biggest segments.. This study aims to investigate the removal of hazardous synthetic components from anti-dandruff shampoo and their replacement with safe natural ones.

❖ KEYWORDS :-

PH Herbal anti-dandruff shampoo, shikaki extract and Foaming ability Herbal shampoo, Natural Ingredients, Hair, Dandruff, Cleansing action, Natural, Antidandruff shampoo, Evaluation.

❖ INTRODUCTION:-

Shampoo is undoubtedly the cosmetic product that we use on a regular basis to clean our hair and scalp. Traditionally used to cleanse the hair and scalp, herbal shampoos are classified as cosmetic preparations and contain ancient Ayurvedic herbs. Their primary purpose is to effortlessly eliminate oils, environmental contaminants, dandruff, dirt, and other debris while also nourishing your hair. Herbal shampoo substitutes synthetic shampoo that is sold in stores with plant-based herbs. The importance of herbal shampoo stems from two factors: people prefer it to chemical products these days since chemicals have negative consequences, and people need and are increasingly aware of natural ingredients in cosmetics [1, 2].

From ancient time human has been using nature care for their health, skin, and hair. The natural ingredients have preventive actions. While relationship between dandruff and seborrhea dermatitis has at times been a matter of discussion. Many regard seborrhea dermatitis of the scalp as severe

dandruff; others think dandruff should be used to describe any flaking of the scalp. Dandruff is nothing but a clinical condition caused by *Malassezia (pityrosporum)* species. Many natural substances have anti-dandruff properties widely used in combination with the herbal shampoos [3,4,5].

A shampoo may be defined as a preparation of a surfactant (i.e. Surface active material) in a suitable form-liquid, solid, or powder which when used under the conditions specified will remove surface grease, dirt and skin debris from the hair, shaft and scalp without affecting adversely the hair, scalp or the health of the user.[1] The word shampoo in English usage dates back to 1762, with the meaning “to massage”. The word derived from Anglo-Indian shampoo, in turn from Hindi champoo=merative of champna to smear, knead the muscles, massage. Today, a plethora of shampoos are available for men and women.[6,7]

Along with visual inspection and quality control tests, the evaluation of shampoos include physiochemical controls like as density, viscosity, and pH. NaCl Lauryl Sulphate Detergents with bases tend to be the most common; nevertheless, concentrations can vary greatly between brands even within a manufacturer's product line. A high detergent content may be seen in inexpensive shampoos. Except even high-end shampoos might only include traces of cheap detergent. The exact same detergent may be found in the same concentration in shampoos for oily and dry hair. The oily hair shampoo may have less oil or conditioning ingredient, or there can just be a variation in the packaging [13].

❖ **Hair & Skin Anatomy :-**

➤ Hair grows from hair follicles situated within the fatty layer of the scalp. Contrary to the popular belief that hair grows as single strands, hair follicles actually grow in groups of 1-4 hairs called “follicular units”.

➤ At the base of each hair follicle is a hair bulb where the growth mechanism for producing hair occurs. Hair follicles get their nourishment from the blood vessels within the dermis. The cells divide and develop to produce the hair shaft.

➤ While the hair is still developing underneath the epidermis, it maintains a soft form. Once it pushes past the epidermis, its outside layer hardens into keratin

❖ **Parts of the Hair: - .**

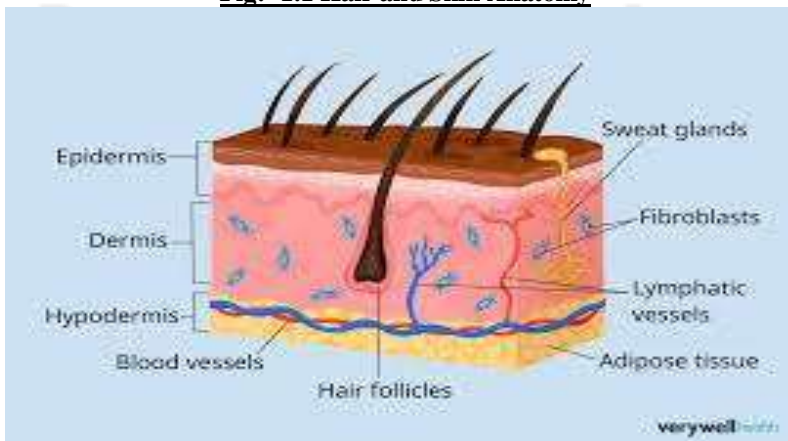
➤ **Dermal papillae:-** Dermal papillae are small, finger-like projections of the dermis that extend into the epidermis, crucial for hair follicle development and function, and also play a role in strengthening the junction between the dermis and epidermis.

➤ **Matrix: -** The hair matrix is a group of actively dividing cells at the base of the hair follicle, responsible for producing and elongating the hair shaft. It contains keratinocytes and melanocytes that form the hair and give it color.

➤ **Outer root sheath:-** The outer root sheath (ORS) is a crucial, multilayered epithelial layer that surrounds the hair follicle, extending from the hair bulb to the epidermis, and is a direct continuation of the basal layer of the epidermis.

➤ **Inner root sheath:-** The inner root sheath (IRS) is a structure within the hair follicle that surrounds and supports the growing hair shaft, composed of three concentric layers: Henle's layer, Huxley's layer, and the IRS cuticle.

Fig:- 1.1 Hair and Skin Anatomy



➤ **Hair shaft:** The hair shaft is the solitary part of the hair follicle that fully exits the surface of the skin. The hair shaft is made up of three layers: the medulla, cortex, and the cuticle.

➤ The medulla is described as an unsystematic and unstructured area located in the innermost region of the hair shaft and is not always present.

❖ PROBLEMS RELATED TO HAIR:

- Dandruff
- Dry hair
- Split ends
- Oily hair
- Frizzy hair
- Limp hair
- Hair loss
- Heat damage
- Color damage

➤ Grey

hair

Dandruff :-

A common ailment known as dandruff causes the scalp's skin to flake. It is neither serious nor contagious. However, it can be awkward and challenging to treat. A gentle daily wash can be used to treat mild dandruff. A medicated shampoo might be useful if that doesn't help. Seborrheic Dermatitis (SD), which only affects the scalp and creates itchy, flaky skin, is connected to dandruff. It affects nearly half of the world's adult population because it is so prevalent. Most people pay attention to the flakes. On the other hand, the most uncomfortable side effect could be itching.

Fig:- 1.2 HAIR DANDRUFF



○ TYPE OF DANDRUFF :-

- **Skin dandruff:** It is also called as pityriasis simplex characterize by excessive formulation of minute scales which accumulate on the scalp area. In this type of dandruff there is no excessive hair loss. The inflammation on the skin no observed. The scales are first found in middle of the scalp and then spread of frontal, parietal and occipital areas.

- **Oily skin dandruff:** Oil related dandruff happen when there is an accumulation of sebum oil on the scalp. It is mostly found in young men following puberty. Inflammation of varied intensity developed on the scalp along with oily scales of dirty yellow colour. Hair fall is mostly found in this condition.

➤ Symptoms :

1. Erythema, which is red patches on the skin of the scalp, and sometimes on the face
2. Eyebrow dandruff

3. Hair loss

4. Dry flakes on the skin of the face

➤ CAUSES OF DANDRUFF :-

- Dry skin.
- Irritated,oily skin.
- Not shampooing often enough
- Other skin conditions: 1. Eczema 2. Psoriasis
- Seborrheic dermatitis Malassezia-yeast like fungus
- Sensitivity to hair products (contact dermatitis)

➤ TREATMENT :-

- Follow a healthy diet.
- Avoid stress.
- Shampoo use a combination of special Ingredients to control dandruff.[8]

❖ ADVANTAGES :-

- ♣ No synthetic surfactants like Sodium lauryl sulphate are used.
- ♣ It is free from adverse effects.
- ♣ It is skin friendly
- ♣ It is eco-friendly
- ♣ Pure and organic ingredient used promotes hair growth and helps in maintaining moisture in the hair.

❖ DISADVANTAGES :-

- ♣ Herbals have slower effects as compared to other dosage form.
- ♣ Most of the herbal drugs are not easily available.
- ♣ Manufacturing process is time consuming.
- ♣ No pharmacopoeia defines any specific procedure to be used in any herbal shampoo.

❖ MATERIALS AND METHODS :-

Fresh parts of the hibiscus (flowers) were collected from the local area of Nashik MH. All flowers collected were allowed to sun dry for nearly 15-20 days of span. The fine powder was obtained from these dried flowers and was labeled properly. Ginger was washed under tap water to eliminate contaminants and was dried in the shade, converted into fine powders, and was sieved using 60 meshes the prepared extracts were stored in a well-closed container[10,11,12].

❖ FUNCTIONS OF SHAMPOO: –

- 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 effectively and completely remove dirt or soil.
- 7) It should effectively wash the hair.
- 8) It should produce a good amount of foam to satisfy the user.
- 9) It should be readily removed by rinsing with water.
- 10) It should impart a pleasant fragrance to the hair.
- 11) It should not have any side effects or causes irritation to the skin and eye.

➤ IDEAL PROPERTIES OF SHAMPOO:-[14,15,16]

- a. To make the hair smooth and shiny.
- b. Produce maintained and good amount of foam.
- c. Should not cause irritation to eye,skin,scalp.
- d. Should completely remove dirt.
- e. Give pleasant fragrance to hair.
- f. Good biodegradability

❖ TYPES OF SHAMPOO:-

- Powder Shampoo
- Lotion Shampoo
- Cream Shampoo
- Jelly Shampoo
- Aerosol Shampoo
- Specialized Shampoo
- Conditioning Shampoo
- Anti-dandruff Shampoo
- Baby Shampoo
- Two Layer Shampoo
- Liquid Shampoo
- Dandruff shampoo
- Colored hair shampoo

○ **Powder Shampoo :-** "Powder shampoo is essentially the same as your liquid shampoo, delivered to you without the water," says founder Kailey Bradt. On average, liquid shampoos are 80% water and come in large eight-ounce bottles.

○ **Lotion Shampoo :-** "Hair lotions have moisturizing and conditioning ingredients that can soften hair and make it more manageable," Taliah Waajid, a natural hair expert and the founder of Taliah

○ Waajid, Uncle Jimmy, and FroBabies, explains. Further, they penetrate the scalp to relieve any itchiness or dryness at the root.

○ **Cream Shampoo :-** Cream shampoo is a hair cleansing product with a paste-like or creamy consistency, often packaged in jars or tubes, designed to clean hair and scalp, and sometimes enriched with conditioning ingredients.

○ **Baby Shampoo:-** Baby shampoo is a hair care product specifically designed for infants and young children, formulated to be gentle and less irritating to the eyes and skin compared to regular shampoos.

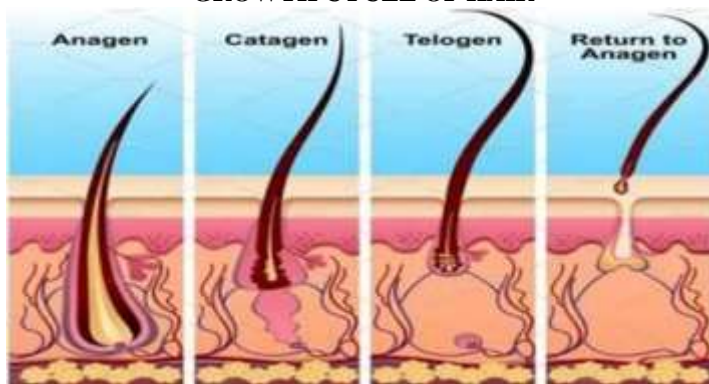
○ **Liquid shampoo:-** needs little introduction as it's the form of shampoo that most people are used to using. Typically, a person would squeeze liquid shampoo into the palm of their hand from a bottle, then massage it into the scalp to cleanse the hair and then rinse out the product.

➤ HAIR PHYSIOLOGY: -

At any particular time, the majority of the hair grows. Every hair goes through this phase for a few years. The hair follicle shrinks and hair development decreases over a few weeks during the catagen transitional period. Resting phase, or telogen: The capacity of the hair follicles to generate new hair stops over a few months, and the old hair falls out. When a new hair begins to develop, the old hair is pushed aside.

➤ GROWTH CYCLE OF HAIR [17, 18, 19, 20]

- The hair growth cycle consists of four phases:
- Anagen (growth phase) : It is the growing phase. This phase last for several years.
- Catagen (transitional phase) : At the time of this phase the hair follicle shrinks and hair growth slows.
- Telogen (resting phase) : It is the rest phase where hair growth stops and new hair begins the growth phase, pushing the old hair out.
- Exogen phase : last phase of hair growth cycle where hair strand completely detaches from the scalp and sheds off.

GROWTH CYCLE OF HAIR**➤ INGREDIENTS :-****1) Piper betel leaf**

The chemistry of betel leaf is mostly dominated by chavibetol and varies locally. The main ingredient in Sri Lankan piper betels is safrole. In different chemotypes, additional dominating chemicals include eugenol, isoeugenol, and germacene D. Eugenol, chavicol, hydroxychavicol, and caryophyllene are also found in leaves. Alkaloids (piperine, pellitorine, piperdardine, guineensine, etc.), phytosterols (beta-sitosterol, beta-daucosterol, stigmasterol, etc.), lignan (pinoresinol), and other bioactive substances are found in stems. Among these are Bornyl cis-4-hydroxycinnamate, Bornyl p-Coumarate, piperolein-B, dehydropiperonaline, and oleanolic acid. Aristololactam A-II, 4-allyl resorcinol, a novel phenylpropene, and the diketosteroid stigmast-4-en-3,6-dione are all found in the roots. The 50 distinct chemicals that made up.

2) Hibiscus

- **Synonym:** shoeblack plant mahagua, cotton rose, mahagua, roselle [27]
- **Biological Source:** Genus of many species of herb rosa sinensis, belonging to the family Malvaceae they are native to subtropical and tropical regions.
- Several are cultivated for the purpose of decoration as ornamentals for their fancy flowers and a number are useful as the fibre plants [22, 23].
- **Chemical Constituents:** The phytochemical analysis resulted into many constituents in the Hibiscus rosasinensis containing tannins, phenols, anthraquinones, quinines reducing sugars, essential oils, flavonoid, alkaloids, terpenoids, saponin, cardiac glycoside, protein, free amino acids and carbohydrates[24,25, 26,23]

3)Aloe vera



Aloe Barbadensis Miller-Asphodelaceae

Aloe vera may also reduce inflammation, which can help people with dandruff symptoms, such as itchiness. It has an antifungal with antibacterial properties of Aloe vera may prevent dandruff. It will restore the PH of scalp and increases the hair growth[28].

4) Fig 1.7Lemon



Scientific name: Citrus limonum ,Family: Rutaceae

Genus: Citrus, Species: Citrus limonum L.

Chemical Properties: Lemons contain various different chemicals and are thought to have some health benefits. It contains a terpene compound called D-limonene which gives their natural lemon smell and taste. Lemons contain sufficient amounts of citric acid; therefore they have a low pH with a sour taste. They also

contain Vitamin C (Ascorbic acid) which is beneficial to human health. 100 milliliters of lemon juice contains nearly to 50 milligrams of Vitamin C (55% of the required daily value) and 5 grams of citric acid[29,30].

➤ **Active ingredients**

The Citrus limonum has essential oil about 2,5 %. The active components are: D-limonene (amount: 90 %), citral (amount 3 – 5 %), geranylacetate, citronelyl acetate, methyl ester- flavonoids: naringine, rutin, hesperidine, eriocritin. lemons contain flavonoid compounds that have antioxidant with anti-cancer properties. These may be able to delete cell growth in cancers. Limonins compound that are found in lemons could also be anti-carcinogens. Citrus flavonoids improve the permeability of vascular vessels, they show anti-phlogistic effects and diuretic properties. Citrus flavonoids inhibit bacterial muta-genesis

6) Reetha-

Sapindus Mukorossi-Sapindaceae, Reetha or Soapnuts is also called as Arishtak in Ayurveda and “Soap nut tree” in India. It is well known for its traditional medicinal uses and is commonly used as a hair cleanser. It is an anti hair loss shampoo, the natural antifungal and anti bacterial which may helps in anti dandruff. It can be used on a daily basis to provide nourishment to the hair scalp and promote hair regrowth. Reetha helps to control dandruff and promotes hair growth due to its Tridosha balancing property. The Tikshna (sharp) nature of Reetha also helps to keep the scalp dandruff- free

Reetha



6) Ginger-

Zingiber Officinale-Zingiberaceae, the anti septic properties of ginger helps in treating dandruff effectively by getting rid of infections and fungus on the scalp. One of the main reason for dandruff is imbalance in PH. Ginger balances the PH of the scalp that ultimately helps in hair growth.

Ginger-



7)Rose Oil (31)

- It repairs hair damage
- Improves Growth of hairs
- Reduces the dandruff
- Gives fragrance to the shampoo

Rose Oil



8)Tulsi

Tulsi is a shrub in the basil family Lamiaceae .The plant and its oil contain diverse phytochemicals, including tannins, flavonoids, eugenol, caryophyllenes, carvacrol, linalool. The plant contains a family of 10 neolignan compound that is called tulsinol A. aromatic compounds in the essential oil are camphor (31%), eucalyptol (20%), α -bisabolene (18%), eugenol (15%), germacrene (10%) and β -bisabolene (12%) [32].

With reference to Ayurveda, tulsi is also known as “The Incomparable One,” “Mother Medicine of Nature” and also “The Queen of Herbs,” and is revered as an “elixir of life” that is combination of both its medicinal, spiritual properties. Ancient Ayurveda suggests that tulsi is a good tonic for the body, mind with spirit that offers solutions to various modern day health problem.

Research Through Innovation

Tulsi**FORMULA**

SR NO	INGRIDIENTS	ROLE
1	P. Betel leaf extract	Anti dandruff activity
2	Hibiscus leaf extract	Moisturizer
3	Ginger	Promtes longer
4	Lemon Juice	Vitamin C
5	Aloe Vera	Conditioner
6	Tulsi Ext	Perservative
7	Rose Oil	Reducing hair fall
8	Water	q.s

❖ CONCLUSION :-

The present study was carried out with the aim of preparing the herbal shampoo that reduces hair loss during combing, is safer than chemical conditioning agents as well as strengthens hair growth. Herbal shampoo was formulated with the aqueous extract of medicinal plants that are commonly used for cleansing hair traditionally. Use of conditioning agents (synthetic) reduces the protein or hair loss. To provide the effective conditioning effects, the present study involves the use of reetha, aloe vera, and other plant extracts instead of synthetic cationic conditioners. The main purpose behind this investigation was to develop a stable and functionally effective shampoo by excluding all types of synthetic additives, which are normally incorporated in such formulations. The study of the developed shampoo is further scientific validation is needed for its overall quality.

The objective of the study was to develop a stable and functionally successful herbal shampoo without the use of synthetic substances, which are frequently employed to a higher amount in such formulations. Synthetic hair shampoo is known to irritate the cuticle of the hair, making it dry, dull, and brittle. Although 7.5% of the shampoo's composition contains synthetic chemicals, it is still less than the market's synthetic accessible

shampoo (10–40%). Our shampoo passed tests with flying colours. Wetness period, speed, improved foaming ability, and cleaning action.

The study's goal was to create a herbal shampoo that was stable and functionally successful without the use of synthetic ingredients, which are frequently used in such formulations to a greater extent. Shampoo for synthetic hair is known to damage the hair cuticle, causing it to become brittle, drab, and dry. Despite the fact that the shampoo's recipe SLS (7.5%) is a synthetic chemical, however its % is insufficient compared to synthetic accessible shampoo (10–40%) in the market. A testing of our shampoo produced positive results. Quickness, enhanced foaming ability, and cleaning action. Wetness period.

The main purpose behind this formulation was to develop a stable and effective shampoo by including all types of additives which are added in this formulation. By using herbal natural extracts we can reduce the side effects of shampoo. Herbal shampoo is more safer than synthetic shampoo. The PH of the shampoo was adjusted to 5, to retain the mantle of scalp which is acidic. Shiny hair having a smooth texture and clean-cut end is generally perceived to be healthy. Use of conditioning agents (synthetic) reduces the protein or hair loss. To provide the effective conditioning effects, the present study involves the use of shikakai, amla, and other plant extracts instead of synthetic. There is a strong need to change the consumer perception of a good shampoo and the onus lies with formulators.

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