



FORMULATION AND EVALUATION OF AN ANTIDANDRUFF SHAMPOO BASED ON HERBAL INGREDIENTS

Aditya Pharmacy College Beed Near Nalvandi naka 431122, Tal. Beed, Dist. Beed, Maharashtra India (Dr. Babasaheb Ambedkar Marathwada University Aurangabad)

Corresponding author
Purushottam dattatrya gholve
Dr. Lahu hingane (PhD)
Pranjali Buddhushan Surywanshi
Aditya pharmacy college beed
Guide by :-Dr.Lahu hingane (PhD)

Abstract

Pityrosporum yeast is a frequent disorder that affects the state of the scalp and causes dandruff. Dandruff can only be adequately managed and controlled; it cannot be completely eliminated. A shampoo is a preparation that, when applied as directed, eliminates surface grease, grime, and skin debris from the hair shaft and scalp without negatively impacting the user. A suitable surfactant, also known as a surface-active substance, can be liquid, solid, or powder. For the dandruff procedure, many anti-fungal agents are employed in hair care solutions. Many side effects, including hair loss, increased scaling and itching, pain, nausea, and headaches, are reported with these medications. In order to address the dandruff condition and be safer for health than existing anti-dandruff shampoos, an attempt was made to create a herbal anti-dandruff shampoo.

Key word :-

Amla Extract, Majlth, Neem , Shikakai, Aloe Vera, Bhringraj

Aim :-

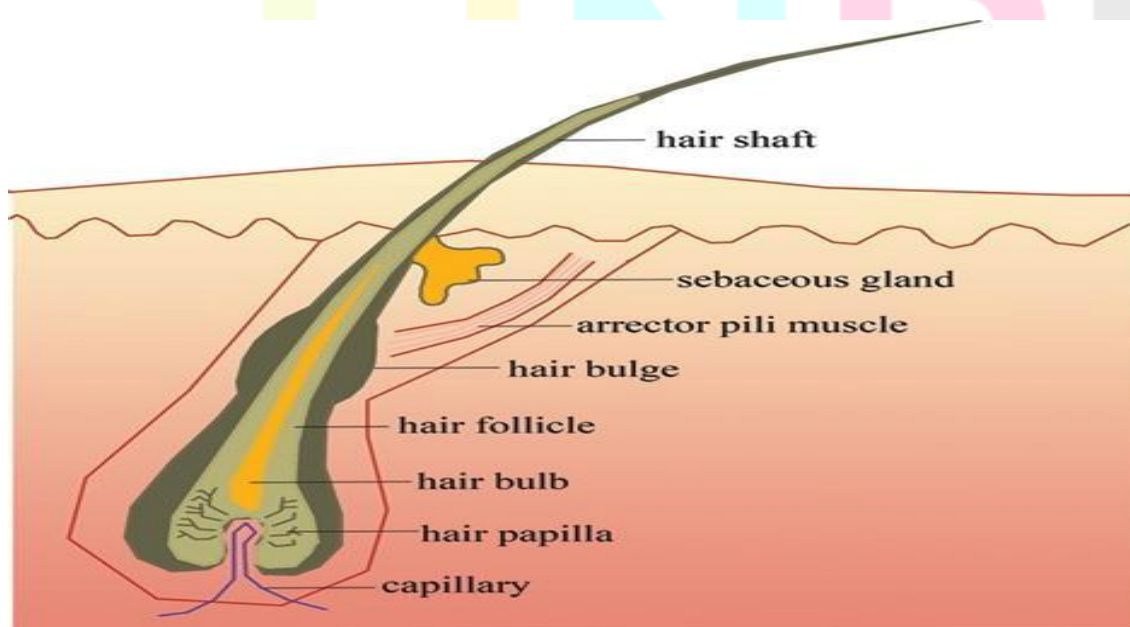
Aim One of the most prevalent dermatological skin disorders is dandruff, a chronic, non-inflammatory disorder of the scalp characterised by excessive scalp tissue scaling. Dandruff is treated with hair care preparations that contain a variety of antifungal agents. Numerous adverse effects, including hair loss, increased scaling, itching, irritation, nausea, and headaches, have been reported with these products. Thus, an effort was undertaken to create synthetic, An anti-dandruff shampoo that works which works well for both treating dandruff and ensuring safety. It appears that the fungi *Malassezia restricta* and *Malassezia globosa* are the cause of dandruff. The yeast *Malassezia*, formerly known as *Pityrosporum*, is responsible for skin and scalp infections. It itch quite a bit. An environment that is warm and humid, crowded, and unhygienic are perfect for the growth of *Malassezia*. Five percent of people have dandruff, which typically appears after puberty. Males are more likely than females to develop dandruff between the ages of 20 and 30. Only skin in regions with high sebum levels gets dandruff. Signs and symptoms, Cosmetics, which are referred to as Products hereafter, are made with a variety of approved cosmetic ingredients as a foundation, on which one or more herbal ingredients are used to achieve particular cosmetic benefits [10–11]. Herbal remedies are a good substitute for synthetic medications or their mixtures. The use of natural ingredients in cosmetics has skyrocketed in the last few decades. These days, the market is flooded with herbal shampoos that include plant extracts and essential oils among other herbal ingredients. Many documented plants are good for hair and can be used as a base for shampoo formulations. Some herbal formulations for shampoos include *Hibiscus rosasinensis*. *Citrus aurantifolia*, *Lawsonia inermis*, As anti-dandruff remedies, *Phyllanthus emblica*, *Ocimum sandum*, *Zingiber officindis*, *Azadirecta indica*, and aloe vera were utilised.

Introduction :-

Dandruff is caused by *psorosporum* yeast, a common condition that impairs the condition of the scalp. It is not possible to totally eradicate dandruff; it can only be effectively treated and controlled. When used as prescribed, a shampoo is a preparation that removes surface oil, dirt, and skin debris from the scalp and hair shaft without harming the user. A appropriate surfactant might be a liquid, solid, or powder. It is sometimes referred to as a surface-active material. Numerous anti-fungal ingredients are used in hair care products to treat dandruff. These drugs have a number of side effects that have been documented, such as hair loss, increased scaling and itching, discomfort, nausea, and headaches. Compared to current anti-dandruff shampoos, in order to treat the dandruff issue.

Anatomy of Hair:

- The hair follicles that produce hair are found inside the Layer of fat on the scalp. Unlike the widely accepted Conviction that hair grows in solitary strands In reality, follicles produce groups of one to four hairs called“follicular units” .
- In each hair follicle’s base Is a hair bulb that houses the mechanism of growth for Hair production happens. Follicles of hair get their Nutrition derived from the blood vessels in the Skin.
- The cells proliferate and differentiate to create the Hair shaft. While the hair is still growing It keeps its soft form beneath the epidermis.
- When it breaks through the epidermis, it is outside.Layer solidifies to form keratin



Parts Of Hair

1. Dermal papillae
2. Outer root sheath
3. Matrix
4. Inner root sheath
5. Hair shaft

Dermal papillae :-

The epidermal papilla contains androgen receptors that are responsive to DHT and is in charge of controlling the hair cycle and growth.

Outer root sheath :-

The tricholemma, which is keratinized, is the outermost section of hair. It covers the entire hair follicle inside the dermis and then transitions through to the epidermis. Providing the hair follicle with an opening from which to surface

Matrix :-

All of the active cells required for hair growth and the development of the various components of hair, including the hair shaft, inner root sheath, and outer root sheath, are found in the matrix, which envelops the dermal papillae. The hair bulb is composed of the dermal papillae and the matrix.

Inner root sheath :-

Is made up of the cuticle, the Huxley layer, and the Henley layer. The Huxley's and Henley's layers are capsular layers that stabilise the hair by anchoring onto one another. The innermost layer that is closest to the hair shaft, known as the cuticle, is composed of hardened, dead cells that provide additional protection to the hair shaft. This holds the hair in place and permits it to grow longer, working in tandem with the capsular layers that comprise the Henley's and Huxley's layers.

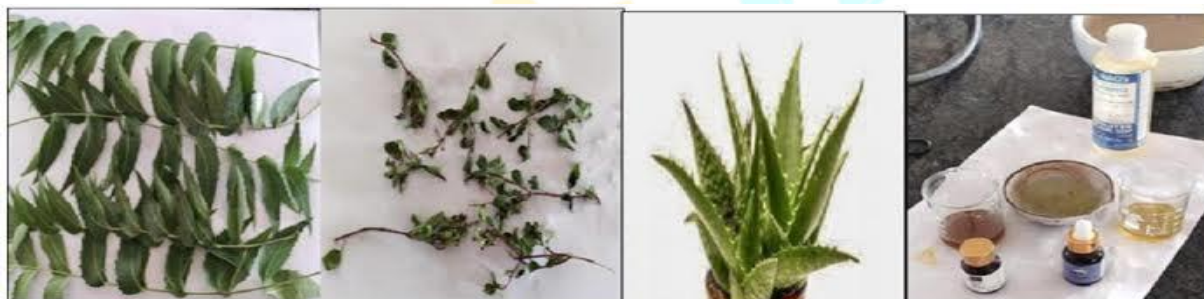
Hair shaft :-

The single portion of the hair follicle that fully emerges from the skin's surface is known as the hair shaft.

The medulla, cortex, and cuticle are the three layers that make up the hair shaft.

Material

Lemon Grass Oil, Neem Oil, Bhringraj Powder, Henna oil was procured from local market. Sodium lauryl sulfate glycerin, EDTA was procured form SVR Labs, Hyderabad.



Shampoo Composition

The following ingredients are used to manufacture shampoos. We use essential surfactants. For instance, Lauryl sulphate sodium salt. Lauryl Sulphate trichanol. For instance, secondary surfactants, dialkyl and monoalkyl sulphosuccinates, For example, benzoic acid, salicylic acid, insecticides, and anti-dandruff products. Packaging agents e.g. fatty materials, including fats and lanolin. Forexample, 4-methyl-7-diethylamino coumarin is a drug used in adolescence. Sequesters, such as Sodium EDTA Salt. Thickening agents. Alginates are what they are. Preservatives include things like propyl paraben, methyl paraben, and formaldehyde. Agents that solubilize, such as urea, aliphatic alcohols, and others [2–6]. One of the most prevalent dermatological skin disorders is dandruff, a persistent, non-inflammatory disorder of the scalp

characterised by excessive scalp tissue scaling. It appears that at least one of the following causes dandruff:

TYPES OF SHAMPOO :-

1. Powder shampoo

2. Jelly shampoo

3. Liquid shampoo

4. Cream shampoo

5. Aerosol shampoo

6. Volumizing shampoo

Powder shampoo.

It can be purchased as a dry powder. Dry soaps were originally used to prepare them, but these days, dry synthetic detergents are used instead. When water or another solvent is added to powder shampoo, the constituents' activity is decreased, particularly when the shampoo is medicated. These days, people don't use these shampoos because applying them is difficult.

Jally shamphoo.

These are typically thick and transparent due to the incorporation of a gelling agent (cellulose, for example). In beauty salons and hair salons, it is very useful. Detergent is the main component and can be used either by itself or in conjunction with soap. It is possible to obtain gel with the desired consistency by adjusting the detergent proportion. Gel shampoo is created by thickening clear liquid shampoo after adding methyl cellulose to it.

Liquid shamphoo

The most popular preparations are these transparent liquid ones. Usually, low cloud point detergent is used to make them. A few of these shampoos might be clear.

Cream shamphoo

These are variations of clear liquid cream shampoos, referred to as lotion shampoos. Additionally, soluble substances like magnesium stearate are used to dissolve the additional opacifier.

Aerosol

Because they are packaged in aerosol containers, they are known as aerosol shampoos. They require more effort in their formulation, preparation, and packaging because they contain an extra propellant. The propellant that is added needs to be compatible and shouldn't lessen the shampooing ingredients' activity. There is a valve present in the container opening. When the valve is pressed, foamy shampoo is released. Thus, it is also known as foam type shampoo.

Volumizing shampoo

Shampoos give hair a fuller, more bouncy, and more substantial appearance. The thickness of the hair strands is less important than the texture of the hair. Rather, volumizing shampoos ought to be sufficiently light so as not to burden your hair, ultimately resulting in increased body.

CONCLUSION

The study's goal was to create a stable and functionally effective herbal shampoo without the use of synthetic chemicals, which are typically added in greater amounts to such formulations. It is well known that using synthetic hair shampoo damages the hair cuticle, making it dry, dull, and brittle. While the formulated shampoo does contain a synthetic chemical called SLS (7.5%), the percentage is too low when compared to other synthetic shampoos on the market (10–40%). Our shampoo's evaluation study demonstrated its superior foaming ability, quick wetting time, and good cleaning action. Aloe-vera gel has been utilised to produce the conditioning effects.

References

1. Jain U. 1997, Beauty through Herbs, Institute of herbal science publishers, 1st Edition, 23-27.
2. Hay RJ and Graham BR, 1997, Dandruff and Seborrheic Dermatitis: Causes and Management, Clin Exp Dermatol, 22: 3-6.
3. Mukherjee PK, 2008, Quality Control of Herbal Drug, An Approach to Evaluation of Botanical, 3: 184, 291.
4. Subrahmanyam CVS, 2000, Text Book of Physical Pharmacy, Vallabh Prakash an, 2nd Edition, 2: 221- 224.
5. Richa MS, Kinjal S and Janke P, 2011, Evaluation of prepared herbal shampoo formulations and to compare formulated shampoo with marketed shampoos, Int J Pharm Sci, 3: 402-405.
6. Al Badi K. and Khan S.A. 2014. Formulation, evaluation and comparison of the herbal shampoo with The commercial shampoos. Beni-Sue University Journal of Basic and Applied Sciences. 3: 301-305
7. Doi T, Kayihura K and Taguchi S. 2010. Survey of formaldehyde (FA) concentration in cosmetics Containing FA-donor preservatives. Journal of Health Science. 56(1):116-122.
8. Kadima R.B and Saad, A.H. 2011, Formulation and Evaluation of herbal shampoo from ziziphus spina Leaves extract. International Journal of Research in Ayurveda and Pharmacy. 2(6): 1802-1806.
9. Kurnai T. Dharam P. Mesh ram, D.P and Mitesh. P. 2014. Evaluation of standard of some selected Shampoo preparation. Word Journal of Pharmacy and Pharmaceutical Sciences. 5(2): 3622-3630.
10. Mainak AR, Jolly CI. 2000. Evaluation of commercial herbal shampoos. Int J Cosmo Sci, 22 (22): 385-391
11. Persaud D and Kamath YK. 2004. Torsional method for evaluating hair damage and performance of hair Care ingredients. International Journal of Cosmetic Sciences. 5: 65-77.
12. Comedian J.M, Carbajal J.M, Franco R, Milan V.J, Padilla M and Sarmiento C. 2000. Evaluation of the Irritant capacity of decylpoly glucoside. International Journal of cosmetic science. 22 (1): 73-81