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## Research Article

# Preparation And Evaluation of Herbal Shampoo

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## ABSTRACT

The study aimed to formulate a pure herbal shampoo and to evaluate and compare its physicochemical properties with the marketed synthetic and herbal shampoos. The herbal shampoo was formulated by adding the extracts of Sapindus mukorossi, Acacia concinna, Amblica offinalis, Hibiscus rosa-sinesis, Aloe barbadensis, Citrus limon, Azardirachta indica. There are numerous sorts of shampoos on the market today, including synthetic, herbal, medicated, and non-medicated variants, but herbal shampoo is growing increasingly popular among customers due to their belief that natural items are risk-free and have no side effects. Synthetic shampoos contain surfactants for washing and foaming. However, prolonged usage can cause eye discomfort, scalp irritation, hair loss, and hair dryness. Natural herbal shampoos are a viable alternative to synthetic shampoos. Shampoo is a detergent-based solution with ingredients for hair conditioning, lubrication, and medication. There are various synthetic, herbal, medicated, and non-medicated shampoos on the market today, but the popularity of herbal shampoo among customers is growing due to their perception that these products are safe and free of adverse effects.

## INTRODUCTION


### Cosmetic Industry:

Cosmetics are a category of health and beauty products that are used to care for the face and body, or used to accentuate or change a person's appearance. Products that are used to care for the face and body, or used to accentuate or change a person's appearance. Cosmetics are used not only

to alter a person's look but also to take care of their skin and body in addition to giving them a new scent. Despite the fact that cosmetics are commonly used for skin and body care, there are many different kinds of cosmetics with important and distinct functions. Products that are used to care for the face and body, or used to accentuate or change a person's appearance. In daily life, a wide variety of races and cultures use cosmetics. The popularity of cosmetics in the modern era is

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thought to be largely due to the creative self-expression and self-identity aspects of the product. Products that are used to care for the face and body, or used to accentuate or change a person's appearance. The primary purpose of cosmetics is to give the wearer a new, respectable appearance. Although the cosmetics sector is experiencing tremendous growth, the real In many Western countries, the term "cosmetics" is misinterpreted as only makeup goods. The US FDA made it very evident that cosmetics are goods that are typically meant to be applied to the human body for changing the look to make it more appealing, cleaning, or beautifying without changing the structure or functions of the body. In 2021, the global cosmetics sector brought in US\$80.74 billion, according to Statista. By 2026, it is expected to generate about US\$131 billion in revenue. However, the industry's exponential expansion has also led to a sharp increase in the usage of plastic, which has made environmental problems worse. The beauty business has seen an eco-awakening due to the detrimental effects the industry has on the environment. Both small businesses and multinational conglomerates are now moving toward resource efficiency and sustainable development. Green products are the result of growing environmental consciousness. items that can be recycled or conserved that won't harm the environment or deplete natural resources are generally referred to as green or environmentally friendly items. The consistent demand and expansion for sustainable Consumer Packaged Goods (CPGs), including cosmetics, is reflected in Nielsen's consumer insights. In the UK.[12]

### Introduction:

People have been using herbs for cleansing, beautifying, and hair management since ancient times because hair is regarded as an essential

component of human beauty [1]. Keratin is the primary component found in hair. Keratin is a remarkable protein which is resistant to wear and tear. Synthetic agents have become increasingly prevalent in the formulation industries over the years, but consumers are becoming more drawn to natural products these days because they are less costly and have fewer negative effects. On the eyes, hair, and skin brought on by synthetic goods [2]. Throughout history, hair on the head has been linked to social status and attractiveness. Since the earliest ages, hair has been cut, styled, and even colored; yet, not much emphasis has been put on the cleaning process for it. Only this century has seen the development of true hair and scalp washing technology. First, hygienic facilities and cake soap were widely distributed to make personal hygiene and body cleansing practical. The specialty of branded shampoo products for the hair and scalp, available in a wide variety of sorts and shapes, followed [3]. Simple shampoo, anti-dandruff shampoo, anti-septic shampoo, and shampoos with vitamins, amino acids, and protein hydrolyses—referred to as nutritional shampoos—can all be used, depending on the kind and kind of components[4]. Shampoos are of numerous varieties, like powder shampoo, clear liquid shampoo liquid shampoo, lotion shampoo, solid gel shampoo, medicated shampoo, liquid herbal shampoo etc. Regarding herbal shampoos and stability requirements Depending upon the nature of the contents they may be simple or plain shampoo, antibacterial or antidandruff shampoo and nutritional shampoo containing vitamin, amino acids proteins hydrolyses [5]. Herbal shampoos are cosmetic preparations that, like conventional shampoos, are designed to cleanse the hair and scalp by utilizing traditional Ayurveda herbs. They are employed to get rid of dandruff, oils, filth, pollution of the environment, etc. Herbal shampoo is a kind of cosmetic preparation that replaces commercially available synthetic



shampoo with herbs derived from plants. The importance of the herbal shampoo is that individuals. People these days choose herbal products over chemical ones since they have been shown to improve health. Herbal cosmetics are becoming more and more popular, mostly because people think they're safe and don't have any negative consequences [6]. The middle ground between nature and culture is hair. Hair care attitudes are different from one society to another regardless of economic differences, and from one person to another within societies [7]. A preparation of a surfactant, i.e. surface-active material in a suitable form - liquid, solid, or powder, is how Harry defined shampoo. However, using surface active material for extended periods of time might be quite detrimental. Time for the children and our surrounding. The word herbal is a symbol of safety in contrast to the synthetic one which has adverse effects on human health. As a result, there is an increase the allure of herbal cosmetics and the enormous assortment of herbal goods that are already widely accessible to the public [8]. Due to their hectic schedules, people today often neglect to preserve their hair from different issues. Individuals don't have time for various forms of treatment to yield positive outcomes. Creating a technique for hair growth and strengthening without harming or influencing hair was the aim of this study. Herbal medications were used in the shampoo's formulation for this purpose. Shampoo is a polyherbal mixture that includes extracts from *Phyllanthus emblica* (phyllanthaceae), well known as Amla, and *Sapindus trifoliatus* (sapindaceae), commonly known as Reetha, Aloe vera gel, *Nardostachys jatamansi* (Valerianaceae) common name Jatamanasi, *Eclipta alba* (Asteraceae) common name Bhringraj, and *Azadirachta indica* (Meliaceae) known name Neem. These herbs were chosen using a combination of scientific rationale and traditional methods with contemporary

application [9]. In India, neem leaf extract was initially used to treat skin conditions and fungus infections. Additionally, it has been utilized for millennia for its anti-tumor, anti-inflammatory, antifungal, and antibacterial properties [10]. One of the visible indicators of interior bodily disorders is hair. The most popular hair treatment is shampooing. Shampoo's main purpose is to cleanse the hair, which is necessary because of accumulated sebum, dust, and other waste from the scalp. Various shampoo formulations are associated with hair quality, hair care habit and specific problems such as treatment of oily hairs, dandruff and for androgenic alopecia[11]. Since ancient times, aloe vera and neem have been utilized as medicinal plants in a variety of herbal remedies, including Ayurvedic, Siddha, and homeopathic. In India and around the world, dandruff is a serious hair issue that causes a lot of public anguish. One of the most prevalent dermatological skin conditions is dandruff, a protracted, non-inflammatory condition of the scalp marked by excessive scaling of the tissue. A fungus known as *Malassezia restricta* and *M.globosa* is the cause of dandruff. *Pityrosporum*, another name for *Malassezia*, is a yeast that causes skin disinfection. The most common usage of shampoos is in cosmetic products. In the past, people used soap cakes to wash their hair, but today, most men and women use shampoos. A shampoo is a formulation of surfactant in an appropriate liquid, solid, or powder form that, when applied as directed, removes surface oil and skin debris from hair. Regardless of the kind of water used or the kind of dirt or fat that needs to be removed from the hair, a good shampoo can immediately produce a lot of foam. However, The majority of individuals always favor shampoos with a lot of foam. The hairs become too dry to handle or comb as a result. Thus, it's also crucial to properly condition hair. Seborrhea is another anatomical problem characterized by abnormal

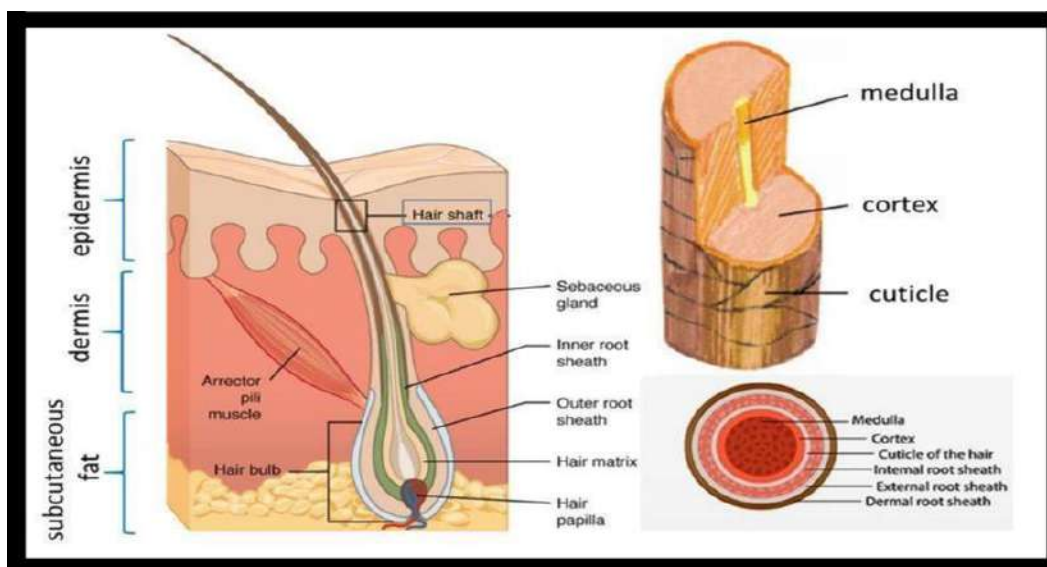
sebum from the sebaceous gland. Psoriasis and acne could result from this. Herbal shampoos are cosmetic preparations produced from traditional medicinal plants that aid in washing of hair and a scalp free of dandruff. They are employed to get rid of dandruff, oil, filth, and pollutants from the environment. Dandruff is a persistent scalp ailment that causes the scalp to shed epidermal cells, causing scaling, itching, and redness. You should stay away from shampoos that irritate your eyes. Plant extracts and essential oils are among the herbal ingredients used in the herbal goods that are now on the market. The most common natural ingredients used to make herbal shampoos include shikakai, aloe vera, tulsi, and neem. For ages, aloe vera and neem, which are acknowledged as therapeutic plants with a long history in conventional systems such as Ayurveda, Siddha, and homeopathy, have been essential components of herbal therapy. Excessive scaling of the scalp tissue is the hallmark of dandruff, a persistent non-inflammatory hair problem that is common around the world and especially in India. The fungi *M. globosa*, commonly referred to as *pitrosporum*, and *Malassezia restricta* are the primary causes of dandruff. These yeasts aid in the disinfection of the skin. Traditional soap cakes have given way to the increasingly popular shampoos in the history of hair care. The term "surfactant" Shampoos are liquid, solid, or powder preparations that efficiently remove skin waste and surface grease from hair. Regardless of the type of water or the type of pollutants present, a high-quality shampoo produces a lot of foam, yet using high-foam shampoos frequently leaves hair feeling overly dry. In these situations, proper hair conditioning becomes essential. Acne and psoriasis can also result from seborrhea, which is the abnormal release of sebum by sebaceous glands. Herbal shampoos are made from ancient medical plants and have two functions: they clean hair and keep the scalp free of dandruff. These compositions are

designed to remove dandruff, oil, grime, and contaminants from the environment. Dandruff is distinguished by. Scalp scaling, itching, and redness are frequently caused by the persistent loss of epidermal cells. Most likely, shampoos are utilized as cosmetics. It is a hair care product that we use on a daily basis to clean our hair and scalp. Shampoos are a viscous mixture of detergents with appropriate additions, preservatives, and active substances that are most commonly used as beautifying agents. Typically, it is massaged into damp hair into the hair, followed by a water rinse to clean it. Shampoo is meant to remove accumulated dirt from hair without removing a significant amount of sebum. There are numerous synthetic shampoos available on the market now, both medicated and non-medicated. Herbal shampoo gained popularity since it is safer, has no negative effects, and comes from a natural source. Synthetic surfactants are used to synthetic shampoos primarily for their foaming and washing capabilities, although frequent usage of these surfactants causes severe consequences including dry hair, hair loss, and irritation of the eyes and scalp. We can use shampoos with natural herbs as an alternative to synthetic ones. It is quite challenging to create cosmetics with solely natural ingredients, nevertheless. Although making cosmetics with entirely natural raw materials is challenging, herbal formulations are thought to provide an alternative to synthetic shampoo. There are numerous medicinal plants that are frequently utilized in shampoo composition and are said to have positive effects on hair. These plants Products can be employed as derivatives, refined extracts, powders, or crude forms. Making a herbal shampoo with just one natural ingredient that is safer and milder than synthetic ones while yet competing well with its foaming, detergency, and solid content is really challenging. As a result, we thought about creating a pure herbal shampoo with traditional and widely used plant ingredients for



hair cleaning in India. Many medicinal plants that may have hair-related benefits have been utilized for centuries all over the world and are used in shampoo formulations. These therapeutic plants can be utilized as extracts, powders, crudes, or derivatives. When describing an unadulterated natural cleanser, we used a traditional method with commonly used plant material for hair washing. In essence, a shampoo is a detergent solution with appropriate ingredients for additional benefits like improved hair conditioning, lubricants, drugs, etc. There are various synthetic, herbal, medicated, and non-medicated shampoos on the market today, but people are increasingly choosing herbal shampoos because they think these natural products are safe and have no negative side effects. Herbal compounds have long been used in personal care products, such as shampoos, with roots in traditional medicine and cultural customs. Growing consumer awareness of the possible negative effects of synthetic chemicals in

traditional hair care products has led to a recent upsurge of interest in herbal shampoos. Among the botanical extracts frequently found in herbal shampoos for their alleged hair care advantages are aloe vera, neem, hibiscus, and curry leaves. An overview of the scientific data in favor of these plant extracts' use in shampoo formulations is what this paper attempts to present. In the Indian subcontinent, a variety of herbs and their extracts have been used as shampoos from ancient times. To make a potent early shampoo, dried Indian gooseberry (amla) and several other herbs were boiled with sapindus using the filtered extract. The tropical sapindus tree, also known as soapberries or soapnuts, is found all over India. Fruit pulp has been reported to contain saponins, which are naturally occurring surfactants, in ancient Indian literature. Phenaka is the term used in Indian scriptures to describe the lather that soapberry extract produces.



**Fig 1. Structure Of Hair**

#### **Ideal Characteristics of Herbal Shampoo:**

- It should remove loose corneal cells from the hair, excess sebum or other fatty substances, and dust or debris thoroughly and effectively.
- It should generate a sufficient amount of foam to meet the user's psychological needs.
- When you rinse it with water, it ought to come off with ease.
- The hair should be left with minimal fly aways, soft, glossy, and manageable texture.



- It ought to give the hair a pleasing fragrance.
- It shouldn't irritate the skin or eyes or have any negative consequences.
- The hand shouldn't get rough and chapped as a result.

### Advantages Of Herbal Shampoo:

**Gentle & Mild Formulation-** There are no artificial elements in herbal shampoos that could deplete the hair's natural oils. Because they contain mild substances derived from plants, they are appropriate for all hair types, but particularly for individuals with sensitive scalps.

**Free From Harmful Chemicals-** Traditional shampoos typically contain harsh chemicals like phthalates, parabens, and sulfates that are harmful to your hair. Because herbal shampoos don't include these harmful components, they are safer and less likely to cause allergies or hair damage.

**Reduce Hair Loss-** Herbal shampoos made of natural components have been used for millennia to prevent hair loss. The herbal shampoo's natural ingredients have antibacterial qualities that help maintain a healthy scalp and protect against viral or inflammatory factors that can cause hair loss.

**Soothe Scalp Irritation-** Herbal shampoos that contain compounds like Piper Nigrum Seed Oil, which reduce scalp irritation, inflammation, and itching, are often the best for dandruff and hair loss. These organic components promote easy and healthy scalp care.

**Suitable For All Hair Types-** Regardless of whether your hair is greasy or dry, herbal shampoos can satisfy your specific needs. Goatmilk or herbal shampoo made entirely of natural ingredients offers targeted care, guaranteeing that your hair receives the right kind of nutrients.

**Stimulate Hair Growth-** Hair growth has historically been aided by certain plants, such as rosemary. Herbal shampoos that contain rosemary aid in increasing blood flow to the scalp, which fosters the development of hair follicles.

**Balance Scalp Oil Production-** Dandruff and itching are symptoms of a dry scalp, but a greasy scalp may be the result of excessive oil production. Herbal shampoo for dry hair that contains neem and tea tree oil helps control sebum production, the natural oil the scalp produces, to keep the scalp healthy.

**Adds Volume & Shine-** Herbal shampoos can give your hair a natural boost by adding volume and gloss. One component that has been shown to enhance hair texture and give it a fuller, glossier appearance is rosemary.

### Disadvantages Of Herbal Shampoo:

**Side Effect-** Certain herbal shampoos, such as coal tar shampoo, may induce side effects like pruritus, edema, vertigo, or respiratory difficulties.

**Taste & Odor-** Herbal shampoos can be challenging to mask their flavour and scent.

**Manufacturing-** The manufacturing process for herbal shampoos can be time consuming and complicated.

**Consistency-** From batch to batch, herbal shampoos might differ in consistency.

**Quality Control-** Herbal shampoos' consistency and quality control may be impacted by natural components.

**Seasonal Variation-** Seasons might affect the plant components used in herbal shampoos.



**Stability-** Due to their lower stability, herbal shampoos may require the addition of preservatives.



## Literature Review:

### Mr. Sankara Bhavani et.al (Jan 2023)

Now a day's peoples are conscious about hairs due to increase in pollution hairs get damaged. Pollutants badly effects on hair resulted into spilt ends, roughness, retarded growth of hairs, loss of shine of hair and hair falls. These all problems of hair are covered by shampoo but in case of synthetic shampoos they are made from chemical constituents shows side effects on hairs.

### Jaya Preethi P. Srikanth J. et.al (Nov 2013)

Hair is one of the external barometers of internal body conditions. Shampooing is the most common form of hair treatment. The primary function of shampoo is aimed at cleansing of the hair necessitated due to accumulated sebum, dust, scalp debris etc. Various shampoo formulations are associated with hair quality, hair care habit and specific problems such as treatment of oily hairs, dandruff and for androgenic alopecia. Shampoos

are liquid, creamy or gel like preparations. The consistency of the preparation depends on the inclusion of traditional soaps saturated with glycerides and natural or synthetic fatty alcohols or the thickening agents (e.g. gum, resin and PEG). A shampoo is a preparation of a surfactant in a suitable form- liquid, solid or powder- which when used under the specific conditions will remove surface grease, dirt and skin debris from the hair shaft without adversely affecting the user.

### Janrao kaveri et.al (Oct 2022)

Herbal Shampoo are probably the most widely used cosmetic products for cleansing Hairs and scalp in our daily life Herbal shampoos are the cosmetic preparations That with the use of traditional ayurvedic herbs are meant for cleansing the hair and scalp just like the regular shampoo. They are used for removal of oils, dandruff, environmental pollutions etc. shampoo is a type of cosmetic mixture that uses herbs from plants as an alternative to the synthetic Shampoo available in the market. The herbal shampoo is important, as

people today prefer herbal products than chemical ones for, they proved to enhance. Shampoos are most probably used as cosmetics. Shampoos are most likely utilized as beautifying agents and are a viscous solution of detergents containing suitable additives preservatives and active ingredients.

**Khaloud Al Badi, Shah A. Khan et.al (Nov 2014)**

Shampoos are probably the most widely used cosmetic products for cleansing hairs and scalp in our daily. A shampoo is basically a solution of a detergent containing suitable additives for other benefits such as hair-conditioning enhancement, lubrication, medication etc. Now-a-days many synthetic, herbal, medicated and non-medicated shampoos are available in the market but popularity of herbal shampoo among consumers is on rise because of their belief that these products being of natural origin are safe and free from side effect. Synthetic surfactants are added to shampoo primarily for the foaming and cleansing action but their regular use leads to dryness of hairs, hair loss, irritation to scalp and eyes.

**Umesh B. Telrandhe, Akhilesh R. Tapase et.al (Sep 2023)**

In our daily lives, shampoos are likely the most frequently used cosmetic products for cleaning our hair and scalp. A shampoo is essentially a detergent solution with appropriate additives for additional benefits such as improved hair conditioning, lubrication, medication. There are many different types of shampoos available today, including synthetic, herbal, medicated, and non-medicated varieties, but consumers are becoming more and more interested in herbal shampoo because they think that because these products come from natural sources, they are risk-free and without side effects.

**Pratiksha S. Sawant, Ganesh B. Vambhurkar et.al (Jul 2020)**

Now a day peoples are interested in the hair care preparation like shampoos and hair conditioners. Shampoos are the products which are used for the removal of the dirt and surface grease from the hair shaft and scalp. There are numbers of synthetic shampoos in the market as compared to the herbal or natural shampoo, but synthetic shampoo has some harmful effect on the hair or scalp like dryness of hair and keratin loss. Now a day peoples are more aware about the side-effects each and every ingredient used in the formulation of shampoo or any of the cosmetic preparation. Hence due to this reason there is increase in demand for the natural ingredient containing formulation. From the results and discussion, we were concluded that the formulation was better in all aspects when compared to the synthetic shampoos.

**Mr. Barde Gaurav S, Prof. Mali Shubhangi R et.al (Jun 2022)**

Shampoos are may be the most widely used the cosmetic product for cleansing hairs and scalp in your daily life. A shampoo is basically a solution of a detergent containing suitable additives for other benefits such as hair conditioning, lubrication, medication etc. Now days many synthetic, herbal, medicated and non-medicated shampoos are available in the market [ Ishii – 1997]. But popularity of the herbal shampoos among consumers is on rise because of their belief. The herbal shampoos are safe and free from side effect. Herbal shampoos are widely unstable product all over the world it has been used form many years. Chemical herbal shampoos are prepared with several chemicals which can care hairs problems bur also responsible for damage of hairs.





**Pawan Maurya, Piyush Yadav et.al (Jun 2021)**

Herbal shampoos are the cosmetic preparations that with the use of traditional ayurvedic herbs are meant for cleansing the hair and scalp just like the regular shampoo. They are used for removal of oils, dandruff, dirt, environmental pollutions etc. Herbal shampoo is a type of cosmetic preparation that uses herbs from plants as an alternative to the synthetic shampoo available in the market. The herbal shampoo is important, as people nowadays prefer herbal products than chemical ones for, they proved to enhance health. The awareness and need for cosmetics with herbs are on the rise, primarily because it is believed that these products are safe and free from side effects.

**Anshul Sharma, Shikha Virk et.al (May 2023)**

Shampoos are the cosmetics preparations that meant for cleansing the hairs by removal of the dirt grease from the hair shaft and scalp. There are different types of synthetic shampoos available in the market, but these shampoos show many harmful effects on the hairs and scalp like dryness of hairs and hair fall. Due to these reasons herbal shampoos are formulated as an alternative to synthetic shampoos because of safe and traditionally used ingredients in them. Herbal shampoos are used for cleansing of the hairs, also smoothing of hair surface, good health of hairs, dandruff free hairs etc. therefore an attempt is made to formulate herbal shampoos that is safer in terms of health and is chemical free.

**Ishita Kumari, Rajat Das et.al (June 2022)**

Hair is an important part of overall appeal of human body. There are many hair problems like thinning of hair, lack of hair volume, immature graying, conditioning, hair loss etc. have been observed by most of the individuals. Shampoo can also be defined as a cosmetic preparation used for

washing scalp and hair packed in a form which is convenient for use. Hair, protective appendages on the body and the structure of integument with sebaceous glands, sweat glands and nails are considered an important part of a body, derived from the skin ectoderm. They are also known as epidermal derivatives, since they originate from the epidermis during embryological development. Herbal shampoo is a widely daily unstable product all over the world. Herbal shampoos are defined as a preparation of surface-active material (surfactant) in suitable form solid, powder, or liquid which when used under the conditions specified will remove dirt, grease from the scalp and hair. It contains all natural ingredients with herb extract. It helps to improvise the quality of hair by providing shine, moisture, growth and strength to hair roots.

**Objective:**

- To spread awareness of herbal products
- To educate people about hair health
- To promote natural products
- To avoid chemical and synthetic products
- To improve & maintain hair growth
- To promote hair strength & thickness

**MATERIAL & METHOD:**

**Plant Material & Uses**

**1] Amla**

- Make your hair and scalp stronger.
- Treat or prevent bacterial and fungal infections of the scalp and hair.
- Reduce greying, or premature hair pigment loss.
- Encourage the growth of hair.
- Cut down on hair loss.





**Fig 2: Amla**

## 2] Reetha

- Its conventional therapeutic applications and is frequently used as a hair cleaner.
- Reetha is widely utilized in the formulation of natural hair care products due to its ability to enhance hair luster.
- It can be utilized regularly to nourish the scalp and stimulate hair regeneration.



**Fig 3: Reetha**

## 3] Hibiscus

- Hibiscus blossoms supply essential elements to stimulate hair development.
- These amino acids generate a specific type of structural protein known as keratin, which serves as the fundamental component of hair.



**Fig 4: Hibiscus**

## 4] Shikakai

- Prevents Grays.
- Crubs Hair Loss.
- Prevents Lice, Psoriasis, Enhance the luster of the hair.
- Provides Nourishment to the hair and promote healthy and rapid hair growth.



**Fig 5: Shikakai**

## 5] Aloe vera

- Alleviates scalp pruritus.
- Deep cleans oily hairs.
- Strengthens.
- Aloe vera contains proteolytic enzymes which repairs dead skin cells on scalp.
- Promote hair growth.
- Smooth natural curls.



**Fig 6: Aloe Vera**

## 6] Lemon Juice

- Increase the shine.
- Eliminate dandruff.
- Split ends.
- Decreases Hair loss.
- gives hair its natural colour.
- Cleanse the scalp.
- encourages hair growth.



**Fig 7: Lemon Juice**

## 7] Gelatine

- Gelatine can increase the growth and thickness of hair.

- alopecia patients were given a gelatine supplement.
- It makes hairs thicker.
- To make hairs stronger.



**Fig 8: Gelatine**

## 8] Rose Oil





- It fixes damaged hair.
- Enhances Hair Growth.
- Diminishes Dandruff.
- Gives the shampoo its scent.






**Fig 9: Rose Oil**

**Table No. 1: Ingredients**

Sr. No	Common Name	Picture	Biological Name	Part Used
1.	Reetha		Sapindus	Fruit

			mukorossi	
2.	Shikakai		Acacia concinna	Powder
3.	Amla		Amblica offinalis	Fruit
4.	Hibiscus		Hibiscus rosa-  sinesis	Flower
5.	Aloe Vera		Aloe barbadensis	Leaf



				
6.	Lemon		Citrus limon	Fruit
7.	Neem		Azadirachta Indica	Leaf

### Methodology:

#### Preparation of extract:

- Firstly, boiling 50g of fresh Amla powder fruits in 75ml of water, the leaves were strained.
- After boiling 50g of powdered Acacia concinna (Shikakai) dried fruits in 75ml of water, the mixture was strained.
- Twenty-five ml of Aloe barbadensis (aloe) juice were extracted from the leaves.
- After boiling 25 grams of fresh Azadirachta indica (neem) leaves in 25 milliliters of water, the leaves were strained.
- 50gm powder of dried flowers of Hibiscus rosa-sinesis (Hibiscus) was boiled in 75ml of water & filtered [13].

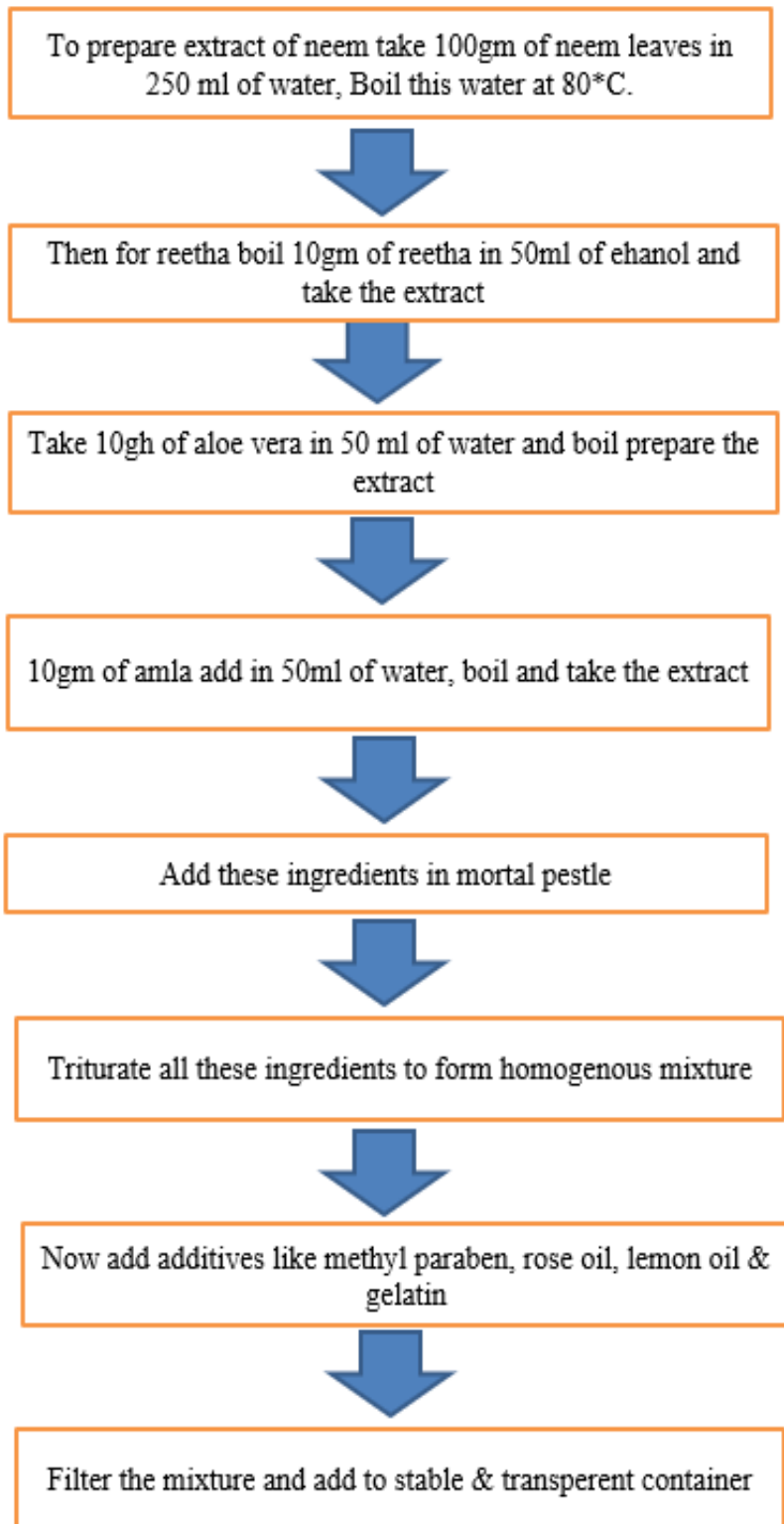
**Table No. 2: Ingredient with Quantities**

Sr. No.	Name of ingredients	Quantity
1.	Neem extract	15ml
2.	Amla powder extract	10ml

4.	Aloe vera extract	10ml
5.	Reetha extract	10ml
6.	Lemon juice	4ml
7.	Gelatin	2gh
8.	Rose Oil	2ml

9.	Methyl paraben	1gm
10.	Water	q.s
Total		100ml

### Formulation Of Herbal Shampoo:



**Evolution Parameters:****Physical appearance:**

The physical appearance of a shampoo should be enticing. Its color, odor, and transparency can all be assessed.

**PH study:**

A shampoo's performance, stability, and suitability for the hair and scalp are all impacted by its pH. A shampoo's ideal pH range is normally between 4.5 and 6.5.

**Viscosity determination:**

Viscosity is the resistance of a fluid (solid, liquid, or gas) to a change in shape or movement of a nearby soft component in comparison to the mean other. According to the rheological analysis, samples' viscosity gradually changes as PM rises. One rheological factor that influences a shampoo's thickness and flow characteristics is viscosity. It also impacts how well the shampoo cleans and how the user feels about it.

**Determination of foam formation:**

The initial amount of foam produced by the herbal shampoo formulation was measured by pouring 20 mL of shampoo into a dry, clean measuring cylinder. The following computations were performed to ascertain the foam formulation after the measurement cylinder was shaken ten times to record the final volume[15].

**Dirt dispersion test:**

To make a volume of 10 mL, add two shampoo droplets to a test tube. After that, ten shakes, one drop of India ink, and water are added to the test tube. A precise measurement of the ink content in the foam was made[16].

**Determination of surface tension:**

The amount of surfactant in a shampoo is indicated by the surface tension measurement. In order to lower the surface tension of water, surfactants are necessary. The shampoo's capacity to clean is enhanced by a decreased surface tension.

**Wetting time test:**

The concentration of a surfactant determines how well it wets. A quick and accurate test to determine a shampoo's wetting ability is the canvas disc method. A longer wetting time means there are less detergents in the shampoo.

**Percentage solid content:**

The solid content of a high-quality shampoo should range from 20% to 30%. Shampoo with a higher solid content is more difficult to remove.

**Patch Test:**

Use a cotton bud to dab a small amount of the product onto your skin in an innocuous place, for example behind your ear or at the nape of your neck. Wait 24 to 48 hours before checking for a reaction to either of the products. If irritation occurs, do not use the product.

**Evaluation Tests:**

Sr. No.	Evaluation Tests	Observation	Result
1.	Physical appearance	Turbit brown	Pass
2.	pH	6.2	Pass
3.	Viscosity determination	1.30Pa	Pass
4.	Foam formation	Stable foam	Pass
5.	Dirt dispersion test	Removes dirt	Pass
6.	Surface tension	30 dynes/cm	Pass
7.	Wetting time	18 seconds	Pass
8.	Solid content	28%	Pass



9.	Patch test	No allergic reaction	Pass
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### Standard preparation:

Take a bowl and add Shikakai, Soap nuts, Dried Amala. Soak in in 1.2 liters of water all over the night. In the morning, it becomes a black colour liquid. Put that liquid in a pressure cooker and let

it go for three to four whistles. Take out the soap nuts' seeds. We have now prepared the aloe vera gel and leaf extraction. Put 250 milliliters of water in a pan and bring it to a boil. Add the aloe vera gel, tulsi, neem, and hibiscus leaves. Add this extraction to the Shikakai mixture after it has thoroughly boiled. Mix this mixture thoroughly. Use a fine filter to strain the shampoo. Store it in a glass bottle after allowing it to cool.



### Type of Shampoo:

#### 1. Deep cleansing shampoos:

These shampoos include more detergent and produce a lot of foam; they are also referred to as thickening, oil control, balancing, volumizing, and clarifying.

#### 2. Anti-dandruff shampoos:

Medicated to reduce dandruff.

#### 3. Baby shampoos:

These shampoos, also referred to as tear-free, have less detergent and create less foam.

#### 4. Moisturizing shampoos:

Excellent for giving hair—especially thick, curly, or coarse hair—more hydration, luster, and smoothness.

#### 5. Conditioning shampoos:

These shampoos, which are also referred to as moisturizing, 2-in-1, smoothing, anti-frizz, color care, and hydrating, use silicone or polyquaternium-10 to promote smooth hair.

#### 6 Antibreakage shampoos:





Excellent for hair that is brittle, fragile, highlighted, damaged, or overprocessed.

### 7. Thickening shampoos:

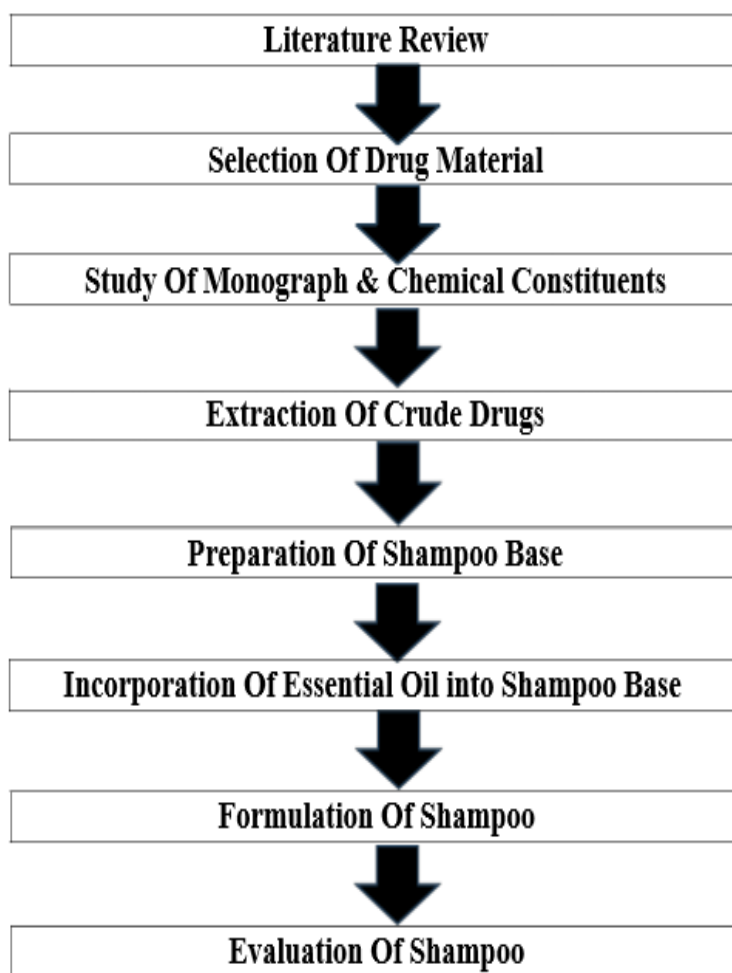
By removing perspiration, debris, and other contaminants that might harm hair follicles, these shampoos can make your hair appear healthier. They are most effective on thinning, fine, and thin hair.

Normal	Strawberry/Peach (fruit)	Cleans the hairs
Dry	Coconut/Almond oil	Replace moisture
Greasy	Lemon	Removes grease
Damaged	Protein	Strengthens
Colored	PH Balanced	Restores natural PH
Dandruff	Medicated	Relieves soreness/itching

**Table No.3**

Hair condition	Shampoos type	Benefits
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### Plan of work:

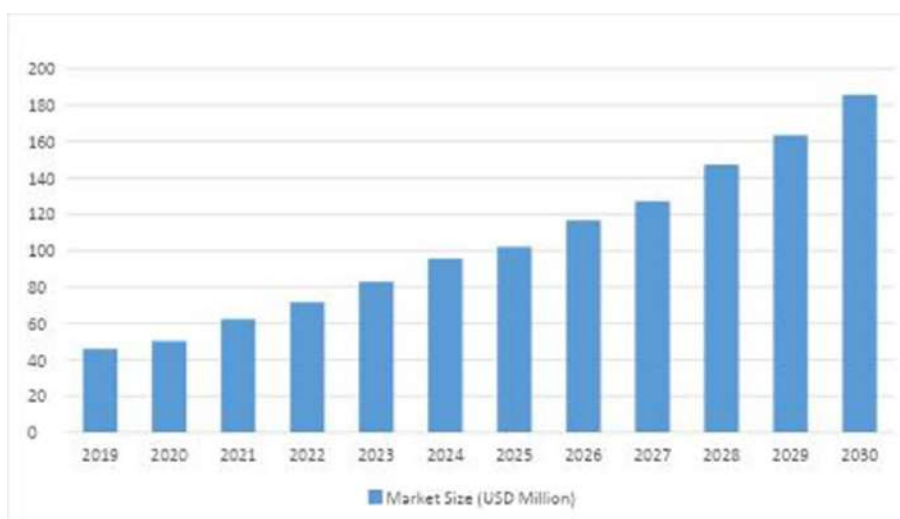




### Future Scope:

In 2023, the Indian herbal shampoo market was projected to be worth USD 578.33 million. The

size of the Indian herbal shampoo market is anticipated to increase at a compound annual growth rate (CAGR) of 6.07% from 2024 to 2030, reaching a value of USD 789.21 million.



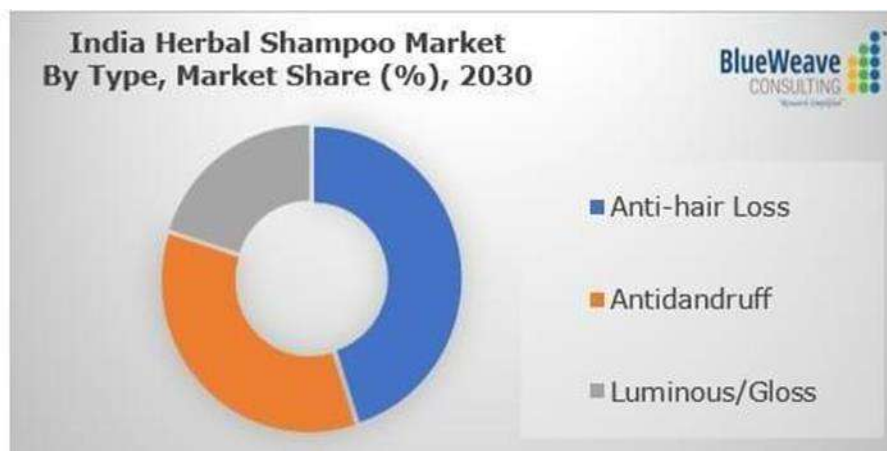
### India Herbal Shampoo Market – By Type:

The growing emphasis and spending on personal grooming and hygiene by consumers, the growth of e-commerce, the increase in disposable incomes, and improved accessibility, especially in

tier 2 and tier 3 cities, are the main factors propelling the Indian herbal shampoo market. Growing knowledge of the negative effects of chemicals in conventional products is causing a change in the market from synthetic to herbal shampoos. The need for herbal shampoos, which

are renowned for their low side effects and affordability, is increased by India's tropical environment, pollution, and stressed lives, all of which contribute to the country's widespread hair-

related problems. In order to maintain market leadership and client loyalty in this changing environment, major industry players are aggressively developing new products [17].



### Estimation:

Consumers favor herbal items due to the significance of Ayurveda and traditional herbal medicines in Indian culture. Moreover, there is a growing trend toward shampoos that address specific hair concerns, such as color-treated hair, frizz control, and thinning hair. Herbal shampoos targeting these niche needs are becoming more prevalent. Although affordability is significant, a portion of consumers is prepared to pay a premium for superior, luxury herbal shampoos. These products often come with added benefits like exotic ingredients or specialized hair treatments. Manufacturers also respond to this trend by launching premium products. For instance, in May 2023, CavinKare introduced a 'Nyle Natural and Pure' range of no-sulphate hair care products under its Nyle brand. The new line included formulas that combined elements to give customers a better value, efficacy, and enjoyment. Shampoos, conditioners, and other items were part of the newly introduced line, which the business positioned as a high-end hair care brand. Furthermore, more herbal shampoos are being sold through e-commerce platforms as a result of

consumers' increasing use of online purchasing. As a result, it anticipates rising to prominence in the market throughout the course of the forecast period. For example, in January 2022, WOW Skin Science, a well-known personal care brand, encouraged consumers to switch to natural goods through its most recent campaign, #AbNatureKiSuno, which featured Disha Patani. The goal of the campaign is to inform and persuade people to switch from harsh chemical-based goods to herbal ones.

### Market Trends:

- The expansion of the Indian personal care sector is being complemented by people's growing awareness of hygiene and beauty. Another important reason for the rising demand for personal care items like herbal shampoo is the prevalence of e-commerce. According to a poll conducted by top Indian e-commerce business Nykaa, over 27 million orders for cosmetics and personal hygiene items were placed on its website in 2022. Almost 10 times as many orders were placed as the year before.

- Hair health can be harmed by exposure to specific chemical compounds, such as surfactants, preservatives, and antibacterial agents, which are typically included in synthetic shampoos. Customers are switching to herbal formulations as a safer substitute as a result. Accordingly, companies are always working to raise customer knowledge of the advantages of herbal extracts in shampoos through commercials, promotions, and product demos [18].

### Applications:

- Shampoo was created to remove excess sebum from the scalp and hair, replacing soap.
- Shampoo was created to eliminate dandruff and replace soap in the cleaning of the scalp and hair.
- Shampoo was created to balance hair oil and substitute soap for cleaning the scalp and hair.
- Shampoo was created as an alternative to soap to clean the scalp and hair by eliminating dust from the environment and product residue.
- Shampoo was created contains various herbal medicament to cure dandruff and other debris.

### RESULT & CONCLUSION:

100 ml of herbal Antidandruff Shampoo Prepared & Evaluated.

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