

Formulation and Evaluation of Anti Dandruff Shampoo Based on Herbal Ingredients

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Abstract: *The purpose of this present research work was to formulate and evaluate anti-dandruff shampoo which was prepared from herbal plant Neem leaves and Tulsi. These two plants are major role in formulation of anti-dandruff shampoo with antimicrobial and anti-inflammatory activity.*

The dandruff is a common disorder which is caused by yeast over growth, there is a fungus which is lives in the scalp of peoples called Malassezia. When a shampoo used under prescribed condition removes skin debris and the dirt from the scalp. Various antifungal and antimicrobial agents or drugs are uses in the preparation of shampoos, which causes the various side effects like hair loss, scratching, discomfort.

An attempt to formulate Neem anti-dandruff shampoo which is safer and healthier than other anti-dandruff shampoo's who are based on the chemicals. Herbal anti-dandruff shampoo formulated by all the herbal ingredients Neem leaves extract as API and anti- dandruff activity, Tulsi leaves which have the anti-microbial activity, Aloe vera which has moisturizing effect etc.

The formulated shampoo were passed through evaluation parameter such as visual inspection, foaming capacity pH, viscosity, consistency of foam, etc.

This study aims to formulate and evaluate an anti-dandruff shampoo using herbal ingredients known for their antimicrobial and soothing properties. Natural extracts such as neem, aloe vera, and fenugreek were incorporated into a shampoo base.

The formulation was assessed for its physical properties, stability, and anti-dandruff efficacy. Results indicated that the herbal shampoo showed good cleansing ability, acceptable pH, and significant reduction in dandruff, suggesting its potential as a safe and effective alternative to synthetic products...

Keywords: anti-dandruff

I. INTRODUCTION

The goal of anti-dandruff products is to stop the development of dandruff flakes. In both developed and underdeveloped nations, dandruff is a significant cosmetic issue. *Malassezia restricta* and *M. globosa* are two types of fungi that cause dandruff. It happens when epidermal cells on the scalp shed in bulk. About once every month, the scalp's skin regenerates.

Dead cells are typically excreted from the scalp in a nearly imperceptible manner, but occasionally cell turnover becomes exceptionally rapid and dead cells are released as visible flakes, which is known as dandruff.

Shampoos are popular hair products that clean the hair and scalp and come in easy-to- use packaging. Additional uses for shampoo include lubricating, conditioning, bodybuilding, preventing the buildup of static electricity, treating illnesses, and more. The final need is that the entire shampoo formulation be long-term medically safe[4].

The manufactured herbal anti-dandruff shampoo was superior to commercial herbal shampoo because it contains neem, a natural anionic surfactant with anti-microbial and preservation properties.

Aloe vera and Neem are medicinal plant they are used as traditionally from ancient year in various herbal medicines such Ayurveda, Siddha, and Homeopathic. Dandruff is major hair problem and a great public distress in India and in all over the world.

Dandruff is one of the most common dermatological skin states and is a long non- inflammatory state of the scalp that is characterised by overweening scaling of scalp tissue. Dandruff caused by a fungus called *Malassezia restricta* and *M. globosa*.



Malassezia is also called pityrosporum is a yeast which is cause disinfection of skin.[1] Shampoos are most usually used in cosmetic product. Earlier soap cakes were used for washing hair, but now days both men and women's population mostly uses shampoos.

A shampoos may be defined as preparation of surfactant in a suitable form liquid, solid or powder which when used under the conditions specified will remove surface grease and skin debris from the hair.

A good shampoo can directly form abundant foam irrespective of the type of water used or the nature of soil or fat to be removed from the hair. But mostly people always prefer a high foam shampoos.

This makes the hairs too dry to handle or comb. So proper conditioning of hair is an also important fact. In another and in anatomical condition abnormal sebum from sebaceous gland called as seborrhea. This may lead to acne and psoriasis. The herbal shampoos are cosmetic preparation which are made by the traditional medical herbs and prepare for the cleansing of hair and dandruff free scalp.

They are used for the removal of oil, dirt, environmental pollution and dandruff. Dandruff is a chronic scalp condition leading to scaling, itching, and redness of the scalp by shedding epidermal cells. Some shampoos cause irritation to the eyes, these should be avoided. The herbal products presented in the market are contains herbal constituents such as plant extract and essential oils. Most frequently used of herbal ingredients in preparation of herbal shampoos are Neem, Tulsi, Aloe vera, Shikakai etc.

Dandruff is a common scalp condition marked by flaking and itching, often linked to fungal growth or scalp imbalance. Conventional anti-dandruff shampoos may provide relief but can cause side effects with prolonged use. Herbal ingredients, known for their antimicrobial and soothing properties, offer a safer and more natural alternative.

This study focuses on the formulation and evaluation of an anti-dandruff shampoo using herbal extracts to ensure effectiveness, safety, and consumer acceptability.

Literature Review

Herbal shampoos are hair-cleansing formulations containing natural plant extracts as primary ingredients. They are free from harsh chemicals such as sulfates, parabens, and synthetic fragrances, offering a safer alternative for regular hair care.

2. Traditional Use

According to Ayurvedic and traditional medicine systems, herbs like Reetha (Soapnut), Shikakai, Amla, Neem, and Bhringraj have been used for centuries to cleanse, nourish, and strengthen hair. These herbs are known for their antimicrobial, antioxidant, and anti-inflammatory properties.

3. Scientific Research and Evidence

Saponin-containing plants such as Sapindus mukorossi have natural surfactant properties, making them effective cleansers (Bhat et al., 2013).

Studies on Amla (Emblica officinalis) have shown it promotes hair growth and reduces hair fall due to high antioxidant content (Scartezzini & Speroni, 2000).Neem (Azadirachta indica) has been documented for its antifungal activity, helpful in managing dandruff and scalp infections (Kumar et al., 2014).

4. Comparative Studies

Research comparing herbal shampoos to commercial shampoos has found that herbal formulations are less likely to cause irritation and may improve hair texture with regular use (Sharma et al., 2016).

5. Market Trends and Consumer Preference

The demand for herbal and organic personal care products has risen sharply. Consumers perceive herbal shampoos as safer, more environmentally friendly, and beneficial for long-term hair health.



6. Formulation Challenges

One limitation noted in studies is the shorter shelf-life and need for preservatives in herbal formulations. Achieving foam and lather levels comparable to chemical shampoos without synthetic additives is also a key challenge.

Dandruff is a prevalent scalp condition primarily caused by the overgrowth of *Malassezia* species, leading to flaking, itching, and irritation.

Traditional anti-dandruff shampoos often contain synthetic agents such as zinc pyrithione, ketoconazole, or selenium sulfide. Although effective, these chemicals can cause side effects with long-term use, including scalp dryness and allergic reactions.

In recent years, attention has shifted towards herbal remedies due to their safety profile, biodegradability, and therapeutic potential.

Various plants have been reported to possess anti-dandruff, antifungal, and anti-inflammatory properties. For instance, *Azadirachta indica* (neem) is well-known for its antifungal and antibacterial effects.

Aloe vera contains enzymes and polysaccharides that soothe the scalp and promote healing. *Trigonella foenum-graecum* (fenugreek) has anti-inflammatory and moisturizing effects.

Lawsonia inermis (henna) is recognized for its antimicrobial properties and its ability to condition the scalp. *Zingiber officinale* (ginger) exhibits strong antifungal activity and improves blood circulation in the scalp.

Aim and Objective

Aim: Formulation And Evaluation of Anti Dandruff Shampoo Based on Herbal Ingredients

Objective:

Herbal shampoo are made out of pure and organic ingredients and there are no synthetic additives or surfactants are free of any side effects.

- Are bio-degradable and earth friendly.
- It doesn't cause irritation to the eyes.
- It is cost friendly, not much expensive.
- Regular usage of herbal shampoo can do wonders for your hair.
- By using herbal shampoo, you can get the perfect oil balance
- They are made out of natural essential antiseptic properties that prevent our hair and scalp from the harsh U.V rays of the sun thus preventing skin infections
- To formulate a herbal anti-dandruff shampoo using natural ingredients known for their antifungal, antibacterial, and soothing properties.
- To evaluate the physicochemical properties of the formulated shampoo, including pH, viscosity, foamability, stability, and cleansing ability.
- To assess the anti-dandruff efficacy of the herbal shampoo through in vitro and/or in vivo studies.
- To compare the effectiveness of the herbal formulation with commercially available anti-dandruff shampoos.
- To ensure the safety and skin compatibility of the shampoo for regular use.

Classification of dandruff

1) Dry dandruff

2) Oily dandruff

A) It is also called pityriasis simplex characterize by excessive.

B) Information on the minute scale which accumulates on the scale area.

A) It is also called pityriasis steroids.

B) It arrives on the scale with sebum production





(Dry da

(Oily dandruff)

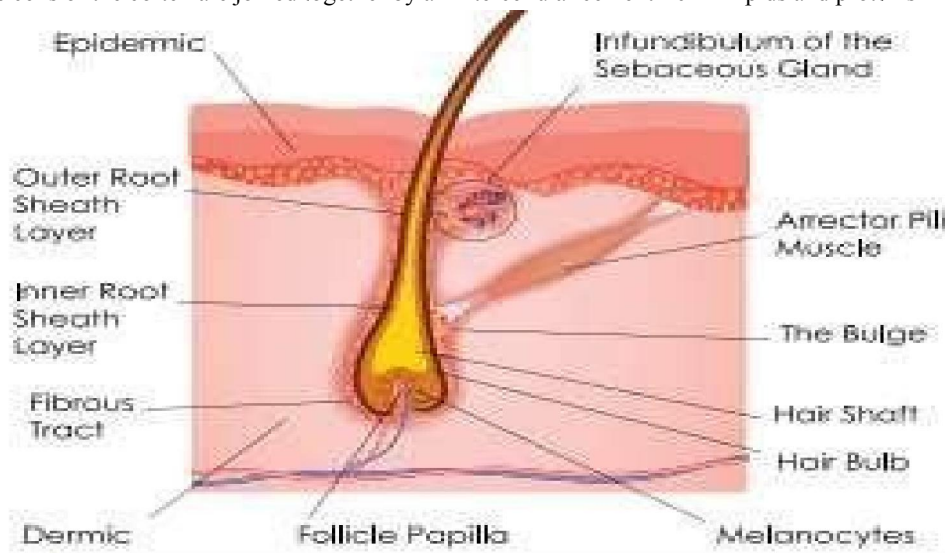
Anatomy Of Hair

The hair is made up of 95% keratin a fibrous, helicoidal protein (shaped like a helix) that forms part of the skin and all its attachments (body hair, nails etc.). The hair structure consists of 3 different parts:

It is the innermost layer of the hair shaft, made up of an amorphous, soft, oily substances.

Thin protective outer layer that contains nutrients beneficial for hair growth. It is highly keratinized with cells shaped like scales that are layered one over the other, measuring about 60 micro-meters long and about 6 micro-meters wide.

It is the main constituent of the hair, containing long keratin chains which gives elasticity, suppleness and resistance to the hair. The cells of the cortex are joined together by an intercellular cement rich in lipids and proteins



(Fig: Anatomy of Hair)

When the oil from the scalp doesn't reach the ends of the hair, it tends to dry and split over time and another reason is heat worse the ends. Applying a dash of oil on the ends can avoid split ends.

Hair loss occurs due to several factors such as stress, hormonal imbalance, and using the wrong products. Prevention is possible by using protein-rich food, switching to mild shampoos, massage with hot oil, staying hydrated, and exercise regularly



The scaly particles that cling to the root of the hair is dandruff which is caused by poor diet, dry scalp, infection, excess sebum, and sensitivity to certain products. It is a harmless, non-inflammatory skin condition that affects the scalp and can lead to hair loss.

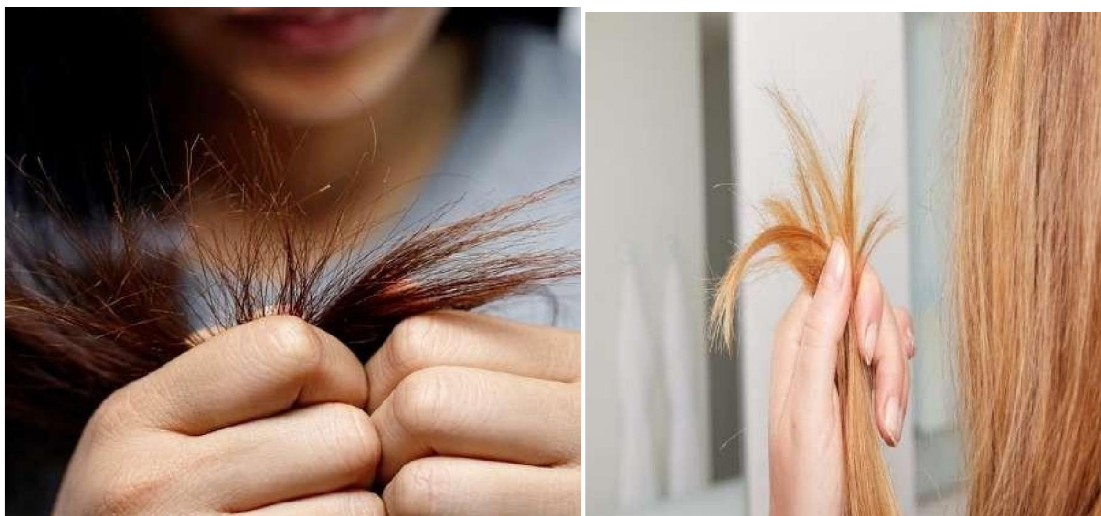
Regular colouring sessions can damage the hair in the long run. The chemicals in the dye can also cause dryness, dandruff, breakage, and split ends. Medicated shampoos extra care, conditioning, and nourishing can treat the damaged hair.

Many reasons like poor diet, genetics, or hormonal changes, the biggest culprit of an oily scalp is excessive washing. Ingredients like lactic acid help to regulate the production of oil.

Herbal formulations are considered as alternative to synthetic shampoo but formulating cosmetics using completely natural raw material is a difficult task. There are large numbers of medicinal plants which are reported to have beneficial effects on hair and are commonly used in formulation of shampoo.

These plant products may be used in their powdered form, crude form, purified extracts or derivative form. Herbal shampoos are prepared from natural ingredients and are meant for cleansing hair and scalp just like regular shampoo.

These shampoos are free from side effects since no surfactants are involved it has good stability and are less harmful compared to synthetic shampoo. Synthetic shampoo contains surfactants and long term use of these surfactants can lead to serious effects like scalp irritation, loss of hair, drying of hair, greying of hair, split ends and skin irritation. Due to these reasons public is getting attracted towards herbal cosmetics due to its insignificant side effects and inexpensive nature



Split ends of Hair)

(Ficus religiosa) commonly known as Peepal is the most popular member of the genus Ficus and it is known by more than 150 names. Ficus religiosa has got mythological, religious and medicinal importance in Indian culture.

Since the times of the Vedas, the sages of ancient India have recognized the profound relationship between nature and human wellness. The Atharva Veda and Ayurvedic texts like the Charaka Samhita describe the use of potent herbs and natural oils for maintaining scalp health and hair vitality. In these sacred texts, ingredients like neem (Azadirachta indica), amla (Emblica officinalis), bhringraj (Eclipta alba), and shikakai (Acacia concinna) were revered for their purifying, nourishing, and dandruff-fighting properties.

The Rishis would prepare herbal decoctions and oils, combining botanical wisdom with spiritual rituals, to treat imbalances in the scalp—what modern science now recognizes as dandruff. They believed that scalp impurities could block the flow of prana (vital energy), and thus, maintaining a clean, healthy scalp was essential for overall well-being.



Inspired by these age-old traditions, our herbal anti-dandruff shampoo harnesses the timeless power of Ayurvedic herbs, blending ancient science with modern formulation to gently cleanse, detoxify, and restore the scalp's natural balance—leaving your hair free of flakes and full of life.



(fig : Loss Hair Problem)

In Ayurveda, herbs such as neem (*Azadirachta indica*), amla (*Embllica officinalis*), shikakai (*Acacia concinna*), and bhringraj (*Eclipta alba*) were commonly used for hair cleansing and scalp treatment. These natural ingredients were often prepared in the form of pastes, oils, or decoctions rather than modern shampoos.

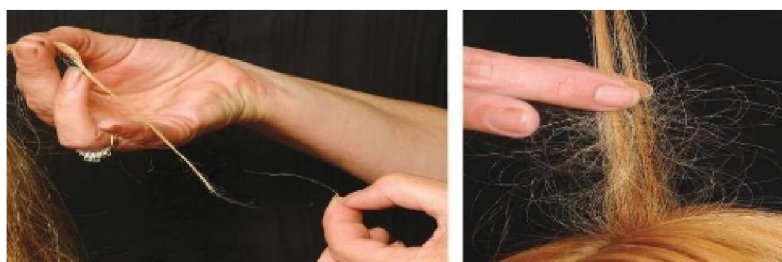
The concept of liquid shampoos was introduced much later, in the early 20th century. With growing awareness of the potential side effects of synthetic chemicals in personal care products, interest in herbal formulations resurfaced in the late 20th and early 21st centuries. This led to the development of herbal anti-dandruff shampoos, combining traditional knowledge with modern pharmaceutical practices.

Modern herbal shampoos incorporate plant extracts with proven antifungal, antibacterial, and anti-inflammatory properties.

These formulations are now increasingly preferred due to their safety, eco-friendliness, and minimal side effects, offering an effective and natural alternative to chemical-based anti-dandruff products.



(fig : Dandruff Problem In Hair)



(fig : Hair Color Damage)



(fig: Oily Scalp)

Types Of Shampoo:

Shampoos are of following types

- Baby shampoo
- Lotion shampoo
- Powder shampoo
- Solid gel shampoo
- Medicated shampoo
- Clear liquid shampoo
- Conditioning shampoo
- Liquid herbal shampoo
- Anti-dandruff shampoo

Benefits of herbal Anti dandruff

- More shine
- Less hair loss
- Remove dandruff
- Long lasting colour
- Promote hair growth.
- All natural, no chemicals
- Keep healthy natural oils
- Keep healthy natural oils
- Won't irritate skin or scalp
- Stronger and more fortified hairs

Functions of Herbal Anti D

It should clean the hair and should leave hair manageable. It should not irritate to sebaceous gland.

It should contain anti-microbial to prevent growth of incidence microbes.

It should remove soil and residues of hair setting lotions/dressing from hair and scalp. It should produce foam of degree that will satisfy the user.

Shampoo should be easy to remove by rinsing, leaving the hair soft and manageable. It should impart pleasant fragrances during use masking the odour of wet hair

Lubrication. Conditioning. Medication.



Antifungal Activity: Herbal ingredients such as neem, tea tree oil, and ginger possess natural antifungal properties that help combat *Malassezia*, the fungus commonly associated with dandruff.

Cleansing Action: Herbal shampoos gently cleanse the scalp and hair, removing excess oil, dead skin cells, and dirt without stripping natural moisture.

Anti-inflammatory Effect: Many herbs like aloe vera and fenugreek soothe scalp irritation and reduce inflammation, which helps relieve itching and redness.

Moisturizing and Conditioning: Ingredients like aloe vera and hibiscus provide hydration, helping to prevent dryness and flaking while improving the texture and softness of hair.

Improved Blood Circulation: Certain herbal extracts such as ginger and rosemary stimulate blood flow to the scalp, promoting healthier hair growth and scalp regeneration.

Safety and Skin Compatibility: Herbal shampoos are generally free from harsh chemicals, making them suitable for sensitive skin and long-term use.

Materials & Method

> Ingredients that are used in the preparation of shampoo are :-

1) Active Pharmaceutical Ingredients (API):-

Ficus Religiosa is a Botanical name of Peepal tree, which is also known as Bodhi tree. It is a herb commonly used as traditional medicine for about fifty types of disorders & hair. The stem bark of *F. religiosa* are reported phytoconstituents of phenols, tannins, steroids, alkaloids and flavonoids, β -sitosterol-D-glucoside, vitamin K, n-octacosanol, methyl oleanolate, lanosterol, stigmasterol, lupen-3-one.

Application: Hair Follicle Regeneration, Promote Hair Growth.



(Fig : Weighing Ficus Religiosa Leaf Powder)

> Other Ingredients :

2) Hibiscus :

Hibiscus is a genus of flowering plants in the mallow family, Malvaceae. The genus is quite large, comprising several hundred species that are native to warm temperate, subtropical and tropical regions throughout the world. Hibiscus is a flowering plant native to warm, tropical regions, such as Africa, Asia, and the Pacific Islands. This herb has been used in traditional medicine for centuries to treat hair loss and thinning hair.



Hair fall control.



Aloevera is a succulent plant species of the genus Aloe. It is widely distributed, and is considered an invasive species in many world regions. Aloe vera has many active ingredients and minerals that can help strengthen your hair. It has fatty acids and amino acids and is rich in vitamins A, B12, C, and E. These play a part in healthy hair follicles and controls greasy hair.

Moisturizer.



Shikakai is a spiny climbing shrub native to China and tropical Asia, common in the warm plains of central and south India. It is renowned as a raw material for shampoo, and the leaves and young shoots are often eaten. Shikakai has been used traditionally for hair care in the Indian Subcontinent since ancient times. It is traditionally used as a shampoo and it is also added in synthetic Ayurvedic shampoos. It is an herb especially used for controlling hair fall and dandruff.

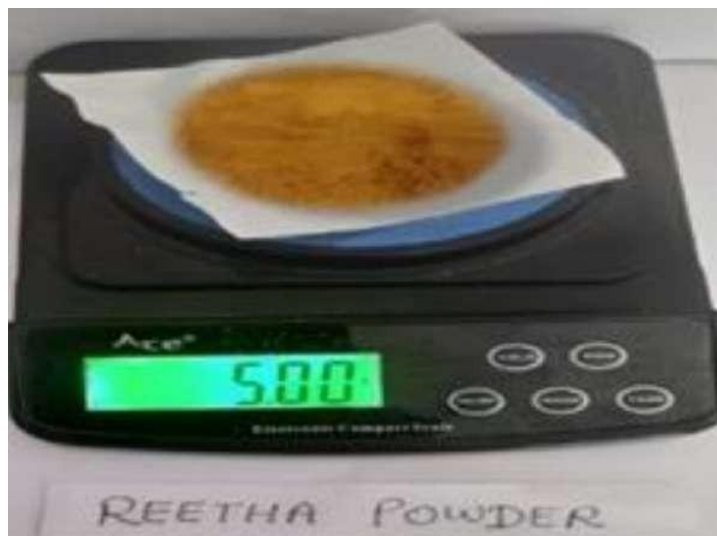


Anti Dandruff.



Reetha is a species of tree in the family Sapindaceae. It is a deciduous tree that grows in the lower foothills and mid hills of the Himalayas at altitudes of up to 1,200 metres, the value of the tree mostly comes from its fruit. With regular use of it, any scalp infection, such as dandruff, is treated. It is also useful in getting rid of head lice, which frequently occur when dirt and soap residue is left to fester. It ensures that the hair and scalp are thoroughly cleansed and that head lice are not present.

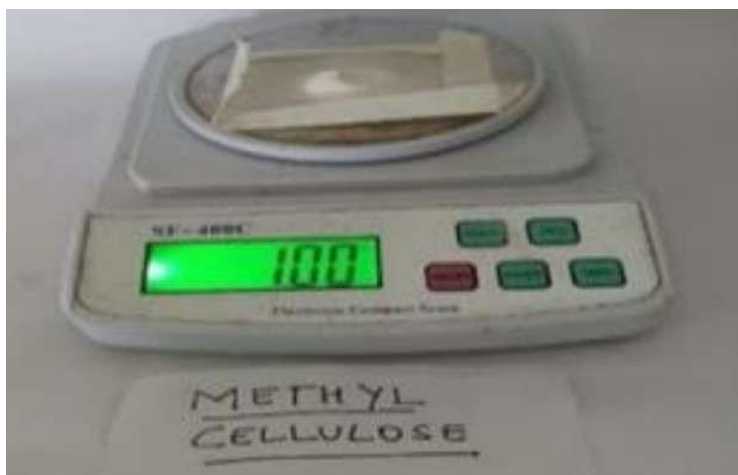
Conditions Hair.



Methyl cellulose is a compound derived from cellulose. It is sold under a variety of trade names and is used as a thickener and emulsifier in various food and cosmetic products, and also as a bulk-forming laxative. Like cellulose, Methyl cellulose is occasionally added to hair shampoos, tooth pastes and liquid soaps, to generate their characteristic thick consistency

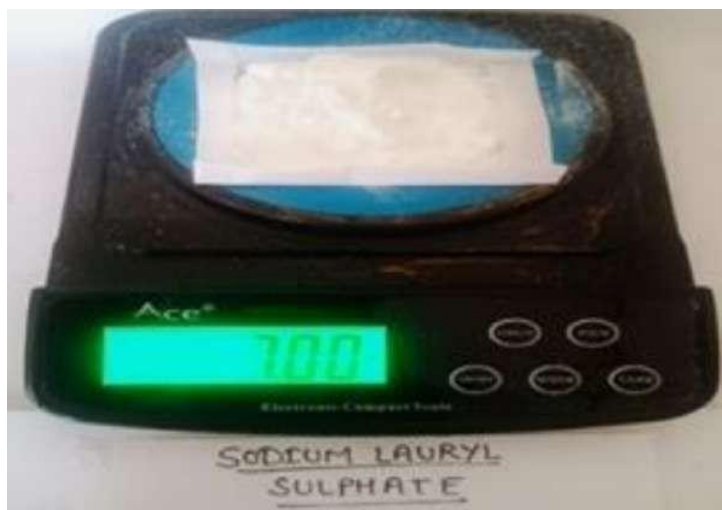


: Thickener.



Sodium lauryl sulphate (SLS), is an anionic detergent and surfactant found in many personal care products (soaps, shampoos, toothpaste, etc.) and for industrial uses. It is derived from palm kernel oil or coconut oil. In herbicides, it is used as a surfactant to improve absorption of the herbicidal chemicals and reduces time the product takes to be rain fast.

Surfactant.



Jasmine oil is generally considered safe and non-irritating and reports of skin irritation are very rare. Jasmine Oil is renowned for its skin-friendly, & produce fragrance properties.



Fragrance.



Menthol shampoo treats your hair and scalp to a well-deserved detox: It gently yet deeply cleans hair and reliably removes invisible residues. Deeply cleaned and reinvigorated, your scalp's natural balance will be restored in no time. Menthol consists cooling, calming and anti-irritation properties.

Coolant.



Process Of Material Pre

1) Preparation of Ficus Religiosa Leaves Powder:-

At first, we collected Ficus religiosa leaves.

Washed and Dried the Ficus Religiosa leaves in a tray drier or Shade dry. After drying, grinded it in grinder and make a fine powder.

Sieved the Ficus Religiosa Leaves powder by sieve number 120.

At last, collected the fine Ficus Religiosa Leaves Powder in air tight sample bag. After collection use the Ficus Religiosa Leaves Powder in the Formulation.

Preparation of Hibiscus powder:-

At first, we collected hibiscus flower. Dried the Hibiscus Petals in tray drier.

After drying, grinded it in grinder and make a fine powder. Sieved the Hibiscus Petals powder by sieve number 120.

At last, collected the fine Hibiscus Petals powder in air tight sample bag. After collection use hibiscus petals powder in the formulation.



Preparation of Shikakai powder-

Firstly, we collected shikakai pods.

Washed the shikakai pods with distilled water. Dried it in tray drier.

After drying, grinded it in grinder and make a fine powder. Now, sieved the shikakai powder by sieve number 120.

At last, collected the fine shikakai powder in air tight sample bag. After collection use Shikakai powder in the formulation.

Preparation of Reetha powder:-

Firstly, we collected the Reetha fruits. Remove the seeds from the fruits.

Dry fruits in the Tray dryer.

Grind the dried fruits in a mixer or grinder and make a fine powder. Sieve the powder by sieve number 120.

Collect it in air tight sample bag.

After collection use Reetha powder in the formulation.

Preparation of Aloe vera gel-

At first, we collected Aloe vera leaves. After collection, peel it in a Beaker.

Then grinded the aloe vera in grinder.

After grinding, transfer the grinded aloe vera into the beaker for use.

Ingredients use in Herbal A

Ingredients	Quantity	Uses
1) Fucus Religiosa leaves Powder	10gm	Hair follicle regeneration, hair growth
2) Hibiscus petals powder	5gm	Hair fall control
3) Shikakai powder	5gm	Anti dandruff
4) Reetha powder	5gm	Conditioner
5) Aloe vera jel	5ml	Moisturizer
6) Sodium lauryl sulphate	7gm	Surfactant
7) Methyl cellulose	1gm	Thickener
8) Menthol	2ml	Coolant
9) Jasmine oil	Q.S	Fragrance
10) Distilled water	Q.S	

Formulation of the herbal shampoo v

above Table:



Firstly, we weighed all the ingredients according to the formula.
Powder of Ficus Religiosa leaves, Hibiscus petals and Aloe vera gel were prepared in one part of distilled water.
Powder of Reetha and Shikakai were prepared in another part of distilled water. Mix both the mixture with each other and stir it continuously.
Pour all ingredients into mortar pestle to make uniform mixture.
After that add Sodium Lauryl Sulphate and Methyl cellulose as a surfactant and thickening agent.
At last, Jasmine oil and Menthol were added to it for Fragrance and coolant property. Heated on Hot plate and make up the volume using Distilled water.
The product was prepared and transferred to the container.
Labelled the container properly and stored it in a cool and dry place.

Evaluation Parameters

To evaluate the prepared formulations, quality control tests including visual assessment and physicochemical controls such as pH, density and foaming were performed.

: We have done the visual inspection of product and observed that it was of-

- Brown
- Aromatic
- Liquid
- Viscous

The pH of formulated shampoo was 6.2. A formulated shampoo is acid balanced which is near to the skin pH. The pH of shampoo is important for improving and enhancing the qualities of hair, minimizing irritation to the skin and stabilizing the pH balance of the scalp. Mild acidity prevents swelling and promotes tightening of the scales, thereby inducing shine.

The stability of the foam was determined using cylinder shake method. About 50 ml of formulated shampoo (1%) solution was taken in a graduated cylinder of 50 ml capacity and shaken for 10 times vigorously. Foam stability was measured by recording the foam volume of shake test after 1 min and 4 min, respectively. The total foam volume was measured after 1 min of shaking. From the consumer point of view, foam stability is one of the important needs of a shampoo. The foam volume produced by the formulated shampoo is above 10 ml. The prepared shampoo generates uniform, small sized, compact, denser, and stable foam.

A Clean dry china dish was weighed and 4 grams of shampoo was added to it. The weight of dish and shampoo was noted. The exact weight of shampoo was calculated. Place the china dish with herbal shampoo on hot plate until the liquid portion was evaporated. The weight of shampoo (solids) after drying was calculated. Measurements were carried out with a 10% shampoo dilution in distilled water at room temperature. Thoroughly clean the stalagmometer using chromic acid and purified water because surface tension is highly affected with grease or other lubricants and after cleaning determine the surface tension.

About 1 g of grease is spread on non-adsorbent cotton and kept in conical flask containing 1% shampoo solution. The conical flask is shaken for 1 hr in mechanical shaker. Cotton is collected, dried and weighed. The amount of grease removed is determined by observation.

- To measure the reduction in dandruff, often through in vitro or in vivo testing.
- To determine the product's physical and chemical stability under different storage conditions.
- To ensure the shampoo is safe and non-irritating for topical application.
- To assess color, odor, and appearance for consumer acceptability.



Result & Discussion:

Parameters	Result
1) Color	Dark brownish
2) Odour	Aromatic
3) pH	Mild acidic (6.2)
4) Foam type	Small, Dense
5) Solid content	1.12 Gram
6) Texture	Smooth

The Formulated shampoo was clear and good appealing. It demonstrated good stability, detergency, cleansing, small bubble size, low surface strain and execute good conditioning property.

The herbal shampoos are the preparations which are used for the washing and cleaning of hairs and to provide nourishment. The herbal shampoos are widely used due to their no or less side effects as compared to conventional shampoos, because it contains pure natural or herbal ingredients rather than synthetic chemicals. Herbal shampoo does not require animal testing and it is skin friendly. Herbal shampoo was formulated by mixing different Ingredients in specific proportions. Selected plant materials are rich in polyphenol compounds such as alkaloid, flavonoid, tannins and saponin. They have found to exhibit Anti hairfall, Anti dandruff, cleansing, moisturising and surfactant properties. Physicochemical properties of the herbal shampoo were statistically evaluated. The effectiveness of herbal shampoo containing Ficus religiosa leaves, Hibiscus petals, Aloe vera, Shikakai and Reetha can vary depending on several factors, including individual hair type and condition. While these ingredients are commonly used in ayurvedic and herbal hair care remedies, there is limited scientific research specifically on the combination of these ingredients in shampoo form.

II. CONCLUSION

The formulated shampoo is not only safer than the chemical conditioning agents but also greatly reduce the hair loss as well as strengthen the hair growth. The pH of the shampoos was adjusted to 6.2 to retain the acidic nature of scalp. Synthetic preservatives have sometimes been the cause of adverse effects among consumers. We have used the physicochemical approach to preservation and by formulating a self - preserving shampoo and avoided the risk posed by chemical preservatives. However, the aesthetic attributes, such as lather and clarity, of the laboratory shampoo are not comparable with the marketed shampoos. The foam volume is on a par although the retail products do not fare so well in the tests conducted by us and they enjoy market popularity, especially if they foam well. This is mainly due to the false information among consumers that 'a shampoo that foams well works well', and no real effort was taken on the part of manufacturers to counter this fallacy. In the present scenario, it seems improbable that herbal shampoos are better in performance and safer than the synthetic ones which are popular in consumers. A more radical approach in popularizing herbal shampoo would be to change the consumer expectations from a synthetic shampoo with emphasis on safety and efficacy. Formulators must play an active role in educating the consumers about the potential harmful effects of synthetic detergents and other chemical additives present in shampoos. There is a strong need to change the consumer perception of a good shampoo and the harmful shampoo. All the ingredients used to formulate the shampoo are safer than generic commercial shampoos and the physicochemical evaluation showed ideal results. The main purpose behind this investigation was to develop a stable and functionally effective shampoo. The present study was carried out with the aim of preparing the herbal shampoo that provides smooth and straight effect to hairs, safer than the



chemical conditioning agents. Herbal shampoo was formulated with the powder of medicinal plants that are commonly used for cleansing and smoothening hair traditionally.

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