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A REVIEW ON HERBAL ANTI-DANDRUFF SHAMPOO

Shiwangi1*, Kumar Bhupendra2*

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

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

Abstract:

The formulation and assessment of the herbal anti-dandruff shampoo described herein depict a careful fusion of natural elements that address diverse aspects of scalp well-being. Orange peel extract brings antioxidant qualities, while aloe vera gel hydrates the scalp. Eucalyptus oil, renowned for its antimicrobial attributes, introduces a revitalizing and purifying sensation, harmonized by hibiscus extract's nurturing attributes. Neem extract augments the shampoo's efficacy by shielding against microbes that cause dandruff. Sodium lauryl sulfate, serving as a surfactant, guarantees thorough cleansing, eliminating impurities and fostering a more salubrious scalp environment. Rose essential oil not only imparts a delightful fragrance but also provides calming properties, enriching the overall user experience. The inclusion of lemon juice regulates acidity and potentially contributes antimicrobial advantages. To preserve the cohesion of the herbal blend, sodium benzoate functions as a natural preservative, inhibiting microbial proliferation and prolonging the shampoo's shelf life. This proves pivotal for sustaining the product's enduring efficacy. The ultimate formulation is a harmonious amalgamation that tackles diverse facets of scalp health, delivering a comprehensive solution against dandruff and ensuring a revitalizing and aromatic encounter during application. Stability assessments additionally certify the product's durability, assuring users of a trustworthy and efficient anti-dandruff remedy. It is advisable for users to conduct patch tests and adhere to recommended usage instructions before widespread application. This herbal anti-dandruff shampoo embodies a dedication to fostering a healthier scalp, minimizing dandruff, and creating a pleasurable hair care routine by synergizing the potency of nature with potent ingredients. The formulation champions hair well-being and scalp health conscientiously, adhering to sound manufacturing practices.

Keywords: Herbal, anti-dandruff, orange peel, aloe vera, shampoo, Eucalyptus, aromatic, scalp.

Introduction:

The formulation of an effective anti-dandruff shampoo is a careful balance of active ingredients, moisturizers, fragrances, and preservatives, each playing a crucial role in combating dandruff while ensuring the product is safe, pleasant to use, and has a desirable shelf life. At the heart of any anti-dandruff shampoo lies its active ingredients, which directly target the underlying causes of dandruff. Zinc pyrithione is one such ingredient, renowned for its ability to regulate the production of yeast on the scalp, a common culprit in dandruff formation. Selenium sulfide works similarly, reducing the growth of Malassezia fungus, while ketoconazole tackles fungal infections that contribute to dandruff. Coal tar, another potent ingredient, slows down the rate of skin cell turnover, thereby reducing flakiness.

In addition to these active agents, anti-dandruff shampoos often contain moisturizing ingredients like glycerin, coconut oil, or aloe vera to counteract the drying effects of some active ingredients and prevent scalp irritation. These moisturizers also help to keep the scalp hydrated and nourished, promoting overall scalp health. Fragrance is another important component of anti-dandruff shampoo formulations. While not directly related to its efficacy against dandruff, a pleasant scent can enhance the user experience and mask any medicinal odors from the active ingredients. Fragrances are carefully selected to complement the other components of the shampoo and create an appealing sensory experience for the consumer.

Preservatives are essential for preventing microbial contamination and ensuring the product remains stable throughout its shelf life. Common preservatives include parabens, phenoxyethanol, and benzyl alcohol, which inhibit the growth of bacteria, yeast, and mold. Balancing all these ingredients requires meticulous formulation and testing to ensure the shampoo effectively combats dandruff while remaining gentle on the scalp and safe for regular use. Regulatory bodies like the FDA and EU Cosmetics Regulation also impose strict guidelines on the formulation and labeling of anti-dandruff shampoos to ensure consumer safety and product efficacy.

Dandruff, a common scalp disorder affecting millions worldwide, poses not only cosmetic concerns but also discomfort and embarrassment for those afflicted. While several commercial anti-dandruff shampoos exist, they often contain synthetic chemicals that may cause adverse reactions or be less effective over time due to microbial resistance. In light of these concerns, there has been a growing interest in the formulation and evaluation of herbal anti-dandruff shampoos, which harness the therapeutic properties of natural plant extracts while minimizing potential side effects.

The formulation of an herbal anti-dandruff shampoo requires careful selection and combination of botanical ingredients known for their anti-fungal, anti-inflammatory, and scalp-nourishing properties. Ingredients such as tea tree oil, neem extract, aloe vera, rosemary, and peppermint have demonstrated efficacy in combating dandruff-causing microbes, soothing scalp irritation, and promoting overall scalp health. Additionally, incorporating conditioning agents like coconut oil or shea butter can help restore moisture balance and prevent dryness, a common trigger for dandruff.

In the process of formulation, various factors such as pH level, viscosity, stability, and sensory attributes must be optimized to ensure product efficacy and consumer acceptance. Furthermore, the compatibility and synergistic effects of different herbal extracts need to be evaluated to maximize anti-dandruff activity while maintaining product integrity.

Benefits :-

1. Herbal anti-dandruff shampoos use natural ingredients like tea tree oil and neem known for their anti-fungal properties.

2. These shampoos effectively combat dandruff without harsh chemicals, minimizing scalp irritation.

3. Natural botanical extracts soothe the scalp, reducing itching and flakiness associated with dandruff.

4. Regular use of herbal anti-dandruff shampoo promotes scalp health and prevents dandruff recurrence.

5. Ingredients like aloe vera and coconut oil in herbal shampoos moisturize the scalp, preventing dryness and flakes.

6. Herbal formulations are gentle on the scalp, making them suitable for sensitive skin types.

7. Eco-friendly production practices and biodegradable ingredients reduce environmental impact.

8. Herbal shampoos often have additional benefits like promoting hair growth and improving hair texture.

9. These shampoos provide a holistic approach to scalp care, addressing underlying causes of dandruff.

10. Users appreciate the natural fragrance and soothing sensation of herbal anti-dandruff shampoos.

Dandruff :

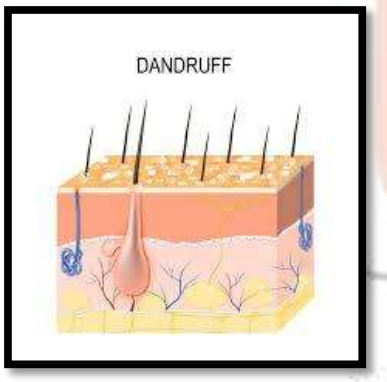
Dandruff is a chronic scalp condition that involves excessive shedding of dead skin cells from the scalp. It is caused by fungi called Malassezia restrita and Malassezia globosa. Malassezia, formerly known as Pityrosporum, is a yeast that causes skin and scalp infections.

Dandruff is caused by excess dead skin cells from the scalp. It occurs in 5% of the population and is most common after puberty, between the ages of 20 and 30 years, and dandruff affects men more than women. The scalp renews itself about once a month. Normally, the scalp sheds dead cells in an almost invisible way, but sometimes the cell turnover is unusually fast and the dead cells come off in visible flakes called dandruff. A warm and humid atmosphere, overcrowding and poor personal hygiene favor the growth of Malassezia.

Causes of Dandruff :

One explanation for dandruff is the fungus Pityrosporum ovale, which occurs naturally on the scalp and other parts of the skin. This fungus usually does not cause damage.

However, due to weather, hormonal and stress changes, the scalp produces more sebum, which causes P. ovale fungi to multiply. With the spread of the fungus, the skin cells of the scalp begin to itch, and the hair follicles and the so-called loss of dandruff Currently, it is believed that the exact mechanism of dandruff formation is due to the formation of enzymes called lipases. The Malassezia fungus breaks down fat into oleic acid with the help of these enzymes. Oleic acid then penetrates the top layer of the skin and increases skin cell turnover in sensitive individuals. This in turn causes scabbing and sometimes itching and redness.



Symptoms of Dandruff :-

- **Flaky scalp:** Dandruff often presents as white or yellowish flakes on the scalp and sometimes in the hair.
- **Itchy scalp:** Persistent itching, especially around the scalp and hairline, is a common symptom of dandruff.
- **Dryness:** Dandruff can lead to dry, tight-feeling scalp, sometimes accompanied by redness or irritation.
- **Oily scalp:** While dandruff is commonly associated with dryness, it can also occur on oily scalps, resulting in greasy flakes.
- **Scalp irritation:** Some individuals may experience mild to moderate discomfort or a burning sensation on the scalp due to dandruff.

Treatment of Dandruff :-

Shampoo: The composition of keratin protein in the shampoo protects the hair against environmental and chemical damage. showed that the shampoo compositions are designed to clean the head and body, soften the hair, providing a washing effect and treat atonic dermatitis. Many people buy and use hair products.

- It should effectively remove dust completely, excess oil, dandruff, etc.
- It should leave the hair not dry, soft and shiny and manageable
- It should give a good amount of foam
- It should be easy to remove by washing with water
- It should give the hair a pleasant smell
- It should not irritate the skin or eyes

Materials and Methods:

The ingredients are-

1. **Hibiscus:**

Fig:1 Hibiscus

Hibiscus, a vibrant and tropical flower, is a valuable ingredient in various applications, including anti-dandruff shampoo formulations. Rich in antioxidants, hibiscus is renowned for promoting scalp health and combating dandruff. Its extracts are often infused into shampoos for their potential to soothe the scalp, reduce inflammation, and encourage a balanced environment for hair growth. The natural acids present in hibiscus help regulate sebum production, preventing excessive oiliness that can contribute to dandruff. Moreover, the flower's moisturizing properties can nourish the hair and scalp, promoting overall hair health.

Beyond its functional benefits, hibiscus adds a floral note and vibrant color to anti-dandruff shampoos, enhancing the sensory experience. With a history rooted in traditional medicine, hibiscus continues to be a prized botanical ingredient, contributing both therapeutic and aesthetic qualities to herbal anti-dandruff formulations.

2. **Orange peel:**

Fig.2. Orange peel

In the context of anti-dandruff shampoo formulations, orange peel plays a significant role. Rich in essential oils and flavonoids, orange peel extracts are incorporated for their potential benefits in addressing dandruff-related issues. The natural astringent properties of orange peel help regulate sebum production on the scalp, contributing to a balanced and healthier environment. Additionally, the citrus-derived compounds may possess antimicrobial qualities, aiding in the reduction of dandruff-causing microorganisms. The aromatic essence of orange peel adds a refreshing fragrance to anti-dandruff shampoos, enhancing the overall user experience. The inclusion of orange peel aligns with the holistic approach of herbal formulations, bringing not only functional benefits but also a sensory delight. As a natural and versatile ingredient, orange peel contributes to the efficacy and appeal of anti-dandruff shampoos, offering a botanical solution to scalp concerns.

3. **Neem:**

Fig.3 Neem leaves

Neem, scientifically known as Azadirachta indica, is a powerful botanical ingredient frequently incorporated into anti-dandruff shampoo formulations. Revered for its extensive medicinal properties, neem has been a cornerstone of traditional Ayurvedic medicine for centuries. In the context of anti-dandruff shampoos, neem's antibacterial, antifungal, and anti-inflammatory attributes play a pivotal role.

Neem extract is known to combat the microorganisms associated with dandruff, addressing the root cause of flaky scalp conditions. Its natural astringent properties help regulate sebum production, preventing excessive oiliness that can contribute to dandruff formation. Additionally, neem is often chosen for its soothing effects on irritated skin, providing relief to individuals dealing with scalp discomfort. Incorporating neem into anti-dandruff shampoos aligns with the holistic approach of herbal formulations, offering a botanical solution that not only addresses dandruff but also promotes overall scalp health. The inclusion of neem adds a traditional, therapeutic dimension to these formulations, contributing to their effectiveness in managing dandruff-related concerns.

4. **Aloevera:**

Fig.4 Aloevera

Aloe vera, a succulent plant with thick, fleshy leaves, is a prized botanical ingredient commonly featured in anti-dandruff shampoo formulations. Renowned for its versatile therapeutic properties, aloe vera gel extracted from its leaves is a staple in skincare and haircare products.

In the context of anti-dandruff shampoos, aloe vera brings a soothing and moisturizing element to the formula. Its hydrating properties can alleviate scalp dryness, a common contributor to dandruff. Aloe vera's natural enzymes, amino acids, and vitamins nourish the scalp and promote a healthy environment for hair growth. The anti-inflammatory nature of aloe vera can provide relief to irritated scalps, potentially reducing redness and itchiness associated with dandruff. Additionally, aloe vera's mild cleansing properties contribute to the overall effectiveness of anti-dandruff shampoos. Incorporating aloe vera aligns with the trend towards herbal and natural formulations, offering a gentle yet potent solution for addressing dandruff concerns while promoting a nourishing and soothing experience for the scalp and hair.

5. **Lavender oil:**

Fig.5 Lavender oil

Lavender oil, derived from the lavender plant (Lavandula angustifolia), is a popular and versatile essential oil often utilized in anti-dandruff shampoo formulations. Renowned for its calming aroma and therapeutic properties, lavender oil brings both sensory and functional benefits to hair care products.

In the context of anti-dandruff shampoos, lavender oil is valued for its potential to soothe irritated scalps. Its anti-inflammatory and antimicrobial properties may contribute to reducing scalp inflammation and addressing microbial factors associated with dandruff. The pleasant scent of lavender oil also adds a calming and refreshing element to the shampoo, enhancing the overall user experience. Beyond its potential dandruff-fighting qualities, lavender oil is known for promoting a sense of relaxation and stress relief, creating a holistic and enjoyable shampooing experience. Its inclusion aligns with the growing preference

for natural and aromatherapeutic ingredients in hair care products, offering a botanical solution for both scalp health and well-being.

6. Rose oil:

Fig.6 Rose oil

Rose oil, derived from the petals of the rose flower (Rosa damascena or Rosa centifolia), is a luxurious and aromatic essential oil often incorporated into anti-dandruff shampoo formulations. Recognized for its captivating fragrance and various skincare benefits, rose oil enhances both the sensory and therapeutic aspects of hair care products.

In anti-dandruff shampoos, rose oil contributes to a soothing and calming experience for the scalp. Its natural antibacterial and antifungal properties may help address microbial concerns associated with dandruff, while the oil's moisturizing attributes nourish the scalp and hair. Beyond its functional benefits, the exquisite and floral scent of rose oil adds a touch of elegance to anti-dandruff shampoos, providing a pleasant and luxurious user experience. Known for its mood-enhancing properties, the aroma of rose oil may also contribute to a sense of relaxation and well-being during the hair care routine. The inclusion of rose oil aligns with the trend towards botanical and aromatherapeutic formulations, offering a holistic approach to scalp health and hair care.

7. Lemon juice:

Fig.7 Lemon juice

Lemon juice, derived from the citrus fruit lemon (Citrus limon), is a tangy and acidic ingredient that finds application in various contexts, including anti-dandruff shampoo formulations. In the realm of hair care, lemon juice contributes both functional and aromatic qualities.

In anti-dandruff shampoos, lemon juice is appreciated for its natural acidity, which can help balance the pH of the scalp. This acidity is thought to create an environment less conducive to the growth of dandruff-causing microbes. Additionally, lemon juice is known for its clarifying properties, aiding in the removal of excess oils and residues from the scalp. The refreshing and citrusy scent of lemon juice adds a zesty element to anti-dandruff shampoos, contributing to a revitalizing and invigorating hair-washing experience. The

inclusion of lemon juice aligns with the preference for natural and fresh ingredients in hair care products, providing a brightening and cleansing effect for the scalp. However, it's essential to use lemon juice in moderation to avoid excessive drying of the hair and scalp.

8. **Sodium Benzoate:**

Fig.8 Sodium benzoate

Sodium benzoate is a widely used preservative in various industries, including the cosmetic and personal care sector, and is sometimes included in anti-dandruff shampoo formulations. As a salt derived from benzoic acid, sodium benzoate serves primarily as a preservative to extend the shelf life of products by inhibiting the growth of bacteria, yeasts, and molds.

In anti-dandruff shampoos, sodium benzoate helps maintain the stability and integrity of the formulation, preventing microbial contamination and spoilage. Its antimicrobial properties contribute to the prevention of potential dandruff-causing microorganisms, ensuring the efficacy and safety of the product over time. Sodium benzoate is considered safe for use in cosmetics and personal care products when used within established concentration limits. Its inclusion aligns with the industry's standards for preserving the quality and longevity of anti-dandruff shampoos, offering consumers a product that remains effective throughout its intended use.

9. **Sodium lauryl sulphate:**

Fig.9 Sodium lauryl sulphate

Sodium Lauryl Sulfate (SLS) is a common surfactant, detergent, and emulsifying agent used in various personal care products, including shampoos, to create lather and facilitate the cleansing process. In the context of anti-dandruff shampoos, SLS serves several functions.

- Cleansing: SLS is effective at removing dirt, oils, and residues from the hair and scalp, providing a thorough cleansing experience.
- Lathering: It contributes to the formation of rich lather, enhancing the perception of shampooing effectiveness.
- Solubilizing: SLS helps solubilize other ingredients in the formulation, ensuring a homogeneous mixture.

While SLS is widely used, it's essential to note that some individuals with sensitive skin or specific hair conditions may experience irritation. For those seeking milder alternatives, sulfate-free formulations are

available. The inclusion of SLS in anti-dandruff shampoos is a balance between effective cleansing and potential considerations for individual skin sensitivities.

S.No.	Ingredients	Uses
1	Hibiscus	Strengthening agent
2	Neem	Anti-microbial agent
3	Orange peel	Antioxidative agent
4	Aloevera	Moisturizing agent
s5	Lemon juice	Prevervative
6	Shikakai	surfactant
7	Demineralized water	Base
8	Lemon juice	Prevervative

Methods:

1. Preparation of Herbal Extracts:

- Dry and grind orange peel for the extract by maceration.
- Extract aloe vera gel from fresh aloe leaves.
- Obtain hibiscus extract by decoction, and neem extract by steam distillation.

2. Formulation:

- Mix 1 part orange peel extract, 2 parts aloe vera gel, and hibiscus extract, and neem extract.
- Add a suitable amount of sodium lauryl sulfate as a surfactant.

3. Preservative Addition:

- Dissolve sodium benzoate in a small amount of demineralized water. Add to the formulation.

4. Fragrance Enhancement:

- Incorporate a few drops each of rose oil and lavender oil for fragrance.

5. Acidity Adjustment:

- Add lemon juice to adjust acidity, providing potential antimicrobial benefits.

6. Mix Thoroughly:

- Blend all ingredients thoroughly for a homogeneous shampoo base.

7. pH Adjustment:

- Check and adjust the pH of the shampoo to the desired range (between 4.5 and 6.5).

8. Stability Testing:

- Conduct stability tests to ensure the efficacy of the preservative and overall product stability.

9. Packaging:

- Transfer the shampoo into suitable packaging, ensuring it is airtight and light-resistant.

This method leverages the natural benefits of the listed ingredients, offering a holistic herbal anti-dandruff shampoo. Always perform patch tests and stability tests to ensure safety and efficacy. Adjust ingredient quantities based on specific formulation goals and desired product characteristics.

Evaluation Parameters:

- **Foam and Foam ability:**

Shampoo foam refers to the foam that occurs when the product is mixed with water during application. It is an important part of shampooing and promotes effective cleansing and a sensory element in hair care. The lathering power of shampoo is its ability to produce a rich and stable lather. This property is influenced by surfactants such as sodium lauryl sulfate, which reduce surface tension and allow bubbles to form. A well-formulated shampoo forms a dense, creamy lather that spreads evenly and improves the distribution of active ingredients. Foamability is not just about visual aesthetics; it plays a role in removing dirt, oils and dirt from the hair and scalp. However, over-reliance on lather does not define shampoo and its cleansing ability, as the overall composition and synergy of ingredients are critical to a successful and rewarding shampooing experience.

- **Wetting Action:**

The moisturizing effect in relation to shampoo refers to the product's ability to disperse and effectively penetrate the surface of wet hair. This feature is crucial to ensure even coverage and contact of the shampoo with the hair and scalp. The moisturizing effect is particularly important because it allows the formula to penetrate water and surface tension, ensuring that the shampoo reaches and interacts with the hair fibers and scalp. Surfactants such as sodium lauryl sulfate play a notable role in increasing the moisturizing effect by reducing water and surface tension, allowing the shampoo to fully cover the hair. This powerful moisturizing function ensures that the active ingredients of the shampoo can work effectively and provide the cleansing, moisturizing and other desired effects during the hair wash.

- **Oral Toxicity:**

Oral toxicity refers to the potential adverse effects that a substance can cause if ingested. It is a measure of the toxicity of a substance when ingested and absorbed into the body through the gastrointestinal tract. The severity of oral toxicity can vary depending on factors such as the nature of the substance, its concentration, and the duration of exposure. To assess oral toxicity, researchers conduct studies using animal models or in vitro experiments to determine the substance and its effects on the gastrointestinal tract, organs and general health. The results help determine safe human exposure levels and help develop regulatory guidelines for consumer products, drugs and other substances. In consumer products such as shampoos, it is very important to ensure low or low oral toxicity because accidental ingestion is possible, especially around the mouth or in products used by children. Manufacturers adhere to safety standards and carry out extensive tests to minimize the risk of harmful effects from consuming products.

- **Eye Irritation Test:**

An eye irritation test is a standard safety assessment performed to assess the potential harmful effects of a substance or product if it comes into contact with the eye. This test is necessary to ensure the safety of consumer products such as shampoos and other personal care products. The procedure usually involves applying a small amount of a test substance (such as shampoo) to the eyes or periorbital skin of test animals, often rabbits, while observing for signs of irritation or damage. Observations include redness, swelling, discharge and other visible signs of irritation. It is important to note that the use of animal testing was an ethical issue, and alternative methods such as in vitro testing using human cell cultures are increasingly emphasized to minimize the use of animals in safety testing.

The results of eye irritation tests provide valuable information to ensure that consumer products are designed to be safe to use and do not cause harm or discomfort when they come into contact with the eyes. Regulatory agencies often establish guidelines and standards to guide these tests and ensure the safety of end users.

- **Determination of pH:**

pH determination is the process of measuring the acidity or alkalinity of a solution, indicating the concentration of hydrogen ions. The pH scale ranges from 0 to 14, with 7 being neutral, values below 7 indicating acidity, and values above 7 indicating alkalinity.

To determine pH, a pH indicator or a pH meter is commonly used. pH indicators are substances that change color based on the solution's acidity or alkalinity. Examples include litmus paper, phenolphthalein, and universal indicator solution. Litmus paper, for instance, turns red in acidic solutions and blue in alkaline solutions. A more precise method involves using a pH meter, which provides a numerical pH value. The pH meter consists of a probe that is inserted into the solution, and the device displays the pH reading.

In the context of shampoo formulation, pH determination is crucial to ensure that the product falls within the appropriate pH range (typically between 4.5 and 6.5) to maintain a balance suitable for the scalp and hair, preventing irritation or other adverse effects.

- **Percentage of Solid Contents:**

Percent solids, often called solids content or simply solids, represent the part of a substance or mixture that is not in liquid or gaseous form. It is expressed as a percentage of the total weight of the material. For a shampoo or other liquid formulations, the solids percentage indicates the amount of non-liquid components in the product. These solids may contain active ingredients, plant extracts, thickeners and other components that affect the composition, viscosity and overall effectiveness of the product. The Formulators often adjust the percentage of solids to achieve certain product characteristics such as thickness, stability and performance. Controlling the solid content is crucial to ensure that the product maintains the desired compositions and properties during its shelf life. In short, the solid content of shampoo indicates the percentage of non-liquid components in the total weight of the product, which affects its physical and chemical properties.

- **Cleansing Efficacy:**

Cleansing power refers to the ability of a product, such as shampoo, to effectively remove dirt, oil, grime and other substances from the hair and scalp during the washing process. It measures how well the product cleans and refreshes the hair, leaving it clean and maintaining a clean and healthy scalp. A number of factors affect the cleansing power of shampoo, including the type and concentration of surfactants (cleansing agents) used in the formulation. Surfactants help break down oils and dirt so they can be washed away with water. In addition, the presence of other active ingredients such as plant extracts or moisturizers can also affect the overall cleansing experience. A highly effective cleansing shampoo not only removes unwanted substances, but also leaves hair fresh, soft and easy to care for. It plays an important role in maintaining optimal scalp hygiene and preventing common hair problems, contributing to overall positive hair care.

Conclusion:

In short, it can be said that the composition of the herbal shampoo with natural ingredients shows a commitment to holistic hair care. The infusion of orange peel extract provides antioxidant properties against free radicals, while the aloe vera gel moisturizes the skin. Eucalyptus oil with antimicrobial properties provides a refreshing and cleansing experience, complemented by hibiscus extract known for its nourishing properties. Neem extract adds an extra layer of protection against dandruff-causing microbes, improving the shampoo and its effectiveness.

The addition of sodium lauryl sulfate as a surfactant ensures effective cleansing, removes dirt and promotes a healthier scalp environment. Rose essential oil not only provides a pleasant aroma, but also provides soothing properties, improving the overall user experience. The addition of lemon juice not only moderates the acidity, but also adds potential antimicrobial benefits to the formula.

To maintain the integrity of the herbal mixture, sodium benzoate acts as a natural preservative that prevents microbial growth and extends the shelf life of the shampoo. This is important to maintain the effectiveness of the product in the long term. The ultimate formula is a carefully balanced blend that addresses multiple aspects of scalp health, from fighting dandruff-causing factors to providing a refreshing and aromatic experience during use.

Stability tests ensure product longevity and provide users with a reliable and effective anti-dandruff solution. Users are advised to perform patch tests and follow recommended usage guidelines before widespread use. The herbal anti-dandruff shampoo features a harmonious combination of nature and powerful ingredients that embody a commitment to a healthier scalp, reduced dandruff and a pleasant hair care routine. This herbal shampoo aims to promote hair wellness and scalp health in an environmentally conscious way, as it is carefully formulated and follows good manufacturing practices.

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