



# Formulation and Evaluation of Herbal Hair Pack

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## Abstract:

The hair follicle is the most important organ in the mammalian system, determining appearance, gender differentiation, providing severe temperature protection, and playing a role in self-defense. Due to many lifestyle-related changes such as fatigue, anxiety, junk food consumption, and the usage of various hairstyling colouring procedures, the younger generations have begun to experience severe hair loss difficulties. Alopecia is the loss of hair that is not transitory in most situations. Due to their anxiety and stress, many people suffering from hair loss seek a variety of remedies, ranging from mythology to conventional and therapeutic healing to the use of monoxide and finasteride. Hair root activation is necessary to improve hair development and prevent hair loss.

## Objective:

The goal of this study was to use various herbs to create a herbal hair mask for general use (hair application).

## Materials and Procedures

Herbs in their natural state are gathered from adjacent areas. To make the extract, the required parts of herbs including Amla, Reetha, Hibiscus, Neem, Bhringraj, Ginger, Tulsi, Multani mitti were weighed and dispersed in water, then heated, cooled, and filtered. Coconut oil and vitamin E were added to the filtrate. Physical appearance, viscosity, pH, homogeneity, eye sensitivity (Daze eye test), hair growth activity, hair weight, stability test, and other criteria were determined and reported in this text for the produced herbal hair mask. Herbal hair mask was discovered to be pale brown in hue and pseudo plastic in nature. The mixture had a smooth and lubricating texture, and the pH was within acceptable limits.

After the initial application with mild irritation, herbal hair mask demonstrated good hair growth as well as hair weight. For seven days, the formulation was confirmed to be stable.

### **Conclusion:**

Because herbal cosmetics have fewer side effects and a higher protection and safety profile, they are still widely utilised by ordinary people. Herbal compositions are useful in improving hair consistency, according to recent studies.

**Keywords :**Herbal,Hair,mask Drugs, Chemicals

### **1-INTRODUCTION:**

Hair development is controlled by a complex and dynamic mechanism that is still unknown. Hair shaft synthesis, elongation, and eventually loss are all part of this cyclical mechanism. Human hair consists of follicles in the antigen, cartage, and telogen stages. In the antigen phase, the hair follicle actively collects cytochrome and grows the hair shaft quickly. The telogen hair follicle is unable to generate newborn hair shafts after it grows into the antigen hair follicle . Alopecia Arcata (AA) is a recurring immune-mediated cetaceous condition characterised by hair loss that is not scarring. It has a prevalence of 1.7 percent to 2.1 percent in the general population, with a higher prevalence in young patients (21-40 years) and no significant difference in incidence. Hair is a vital element of the body and serves as a health indicator. Hair masks can help to keep our hair moisturised. They are especially good for hair that is dry or damaged. Hair masks can help to improve the condition of our scalp and strengthen our hair. Hairs...These hair masks can be be prepared at home, have no drawbacks, and are really useful. This mask is something we can manufacture. from whatever we have on hand, This product is critical for those whose hair is extremely thin or whose hair is damaged. If our hair is damaged, If that's the case, our personality will be enhanced. There are many different types of masks on the market, but they all contain the same ingredients. chemicals. Chemicals are also harmful to our hair. As a result, we have created a chemical-free product. This mask is fantastic.



fig :Hair dandruff

## 2. METHODS

Ingredients

**Amla**

Amla, often known as Indian gooseberry, is high in vitamin C. It has a lot of health benefits. Powdered Amla is an important ingredient in hair tonics, as it promotes hair growth and improves hair pigmentation . It strengthens the roots, maintains the colour, and increases shine. Hair growth and colour are improved when amla oil is applied to the roots . The most common application is to reduce baldness and hair loss. The tannin content, which includes tannic acid, ellagic acid, gallic acid, iron, and antioxidant material, prevents dandruff-induced free radical damage to hair follicles .

**Bhringraj:**

The medicinal herb bhringraj, often known as fake daisy, increases hair growth. It's an ayurvedic substance that promotes hair growth . It improves blood circulation to the scalp by encouraging and activating hair growth that has been lost due to a variety of factors, including dandruff. It also helps to prevent dandruff and irritation on the scalp, which can lead to hair loss.

**Hibiscus**

The most helpful element for hair is hibiscus or 'gudhal' . It is used to promote hair growth, regret, and hair loss. Hibiscus contains amino acids, Vitamin A, C, and alpha hydroxyl acids, as well as other

nutrients, all of which are excellent to hair and scalp health. They maintain the scalp healthy and reduce the likelihood of hair dandruff .

## Neem

Neem helps to keep the scalp clean. It clears clogged pores and promotes hair growth. The regenerative qualities are critical in the treatment of dandruff . It has antimicrobial and therapeutic properties, and it can be utilised to treat a variety of hair issues . Neem leaves can be used as a dandruff-removal rinse. The most common use of neem is in our hair care regimens. Ayurveda recommends amla, aloe vera, neem, and shikakai for healthy hair, increased hair development, less hair fall, and abundant hair .

## Ginger:

Ginger is a fantastic hair conditioner, full of minerals and essential oils that make hair more manageable, smoother, and shinier . It provides relief from itchy scalp, dryness, and dandruff. It has anti-inflammatory and antibacterial characteristics that help keep the scalp clean and healthy .

Table 1. Composition of Herbal Hair Mask

S.NO	Name	Biological name	Quantity
1	Amla	Phyllanthus Emblica	55gm
2	Bhringraj	Eclipta prostrate	20gm
3	Neem	Azadirachta mukorossi	20gm
4	Tulsi	Ocimum tenuiflorum	25gm
5	Hibiscus	Hibiscus rosa- Sinensis	50gm
6	Coconut oil	Cocos Nucifera L	30gm
7	Ginger	Zingiber Officinale	10gm

## Composition of the Constituents (quantity):

The largest dose of Amla and Hibiscus was taken since they have established hair nutrition properties, and because the scalp becomes dry during dandruff treatment, it is critical to nourish it. Bhringraj, Tulsi, and coconut oil were each given 25 gram because they enhance blood circulation, revitalise hair follicles, and promote hair growth. Coconut oil and Tulsi have antibacterial and antifungal properties. Because neem and ginger contain pungent active components in concentrated levels, they should only be used in small doses.

**Formulation:**

The dried herbs were powdered and weighed precisely after being harvested and dried in the sunlight. In the mortar pestle, all of the components were homogeneously mixed, as shown in Table 1 and Fig. 1. Formulation Innovation It comes in the form of a bundle. There are no artificial additives in this recipe. Because the ingredients are readily available, they can be prepared at home. It can be freshly prepared before usage. Herbal hair mask care formulation application The pack, also known as a coarse pack, should be applied to hair on a weekly basis as a semi-solid paste in lukewarm water, since it improves the efficacy of the ingredients. consistency. It should be applied evenly to the hair with a brush, from the roots to the tips. It should be permitted to dry completely for 30 minutes. Then it should be treated with simple water to get rid of it.

**Use**

As a Herbal Hair mask is nourished, which helps to prevent greying and hair loss. Enhance the hair's lustre and gloss. Following the creation of the Herbal hair mask, the following evaluation is carried out:

**Organoleptic Evaluation**

The examination of the formulation is performed under this evaluation, and it involves macroscopic aspects of the drug or product, such as colour, scent, and taste, by using sensory organs such as the eyes or nose. Table 2 explains how macroscopic elements like as texture and appearance are incorporated.

Table 2 Features and Observations of Ingredients.

S.No	Organoleptic features	Observation
1.	Colour	Greenish Brown
2.	Odour	Characteristic
3.	Texture	Fine
4.	Appearance	Coarse Powder

**Physicochemical Research**

The formulations' physicochemical investigations were carried out as shown in Table 3 to examine physical and chemical characteristics such as pH, ash value, and loss on drying (Moisture content).

Table 3 Physiochemical studies:

S.No	Physiochemical Test	Observation
1.	pH	6.7
2.	LOD(loss of drying)	1.25% w/w
3.	Ash Value	3.0% w/w

### Evaluation of Phytochemicals

Several tests were carried out, as shown in Table 4, to identify the phyto constituents present in the products and their impact on the body. Phytochemical characteristics are found in every plant and have a variety of beneficial benefits.

Table 4. Phytochemical Evaluation.

S.No	Test	Purpose for detection	Result
1.	Molisch's Test	Presence of carbohydrate	Positive
2.	Fehling's Test	Presence of Carbohydrate	Positive
3.	Hager's Test	Presence of alkaloids	Positive
4.	Mayert's Test	Presence of alkaloid	Positive
5.	Volatile oil test	Presence of volatile oil	Negative
6.	Biuret test	Presence of proteins	Negative
7.	Foam Test	Presence of saponin	positive

### Rheological evaluation

The physical properties of the powdered formulation are examined in rheological examination, as indicated in table 5. The flow ability of powders in this bulk density tapped density angle of repose hausners ratio Carr's index are assessed using powder rheology.

1.	Bulk density	0.45
2.	Tapped density	0.5
3.	Angle of repose	41.7
4.	Carr's index	10
5.	Hausner's Ratio	1.11

### Patch Test:

In this procedure, a small amount of moistened formulation is applied to the hand's surface, and the effects of the formulation on irritancy and itching have been noticed.

1.	Swelling	Nil
2.	Redness	Nil
3.	Irritation	Nil

### Stability test:

The powdered formulation was kept at different temperatures (35oC and 40oC) and humidity levels for a period of time. The change in physical attributes was detected under various situations

1.	Change in Colour	Nil
2.	Change in odour	Nil
3.	Change in pH	Nil
4.	Change in Texture	Nil
5.	Change in Smoothless	Nil

### Result and Discussion

The herbal hair mask mixture has been created to include the benefits of natural herbs as well as potent phyto-constituents. It acts as an anti-dandruff agent and moderately nourishes hair. It effectively removes excess oil from the scalp, which is one of the primary causes of dandruff.

**Amla** provides additional nutrients and antioxidants to nourish hair, as well as protecting hair follicles from free radical damage caused by dandruff. Amla's vitamin C, anti-inflammatory, and antibacterial qualities can help prevent dandruff.

### **Bhringraj**

protects the scalp from irritation caused by dandruff, allowing hair to grow freely. It serves as an antioxidant, cleansing the scalp of sebum buildup, opening blocked pores, killing bacteria, and promoting hair growth. It hydrates hair while also removing dandruff. It has antibacterial and antifungal qualities, which can aid with dandruff, psoriasis, and other scalp skin irritations. It is also known to promote scalp circulation.

### **Hibiscus:**

Hibiscus contains amino acids, vitamins a, c, and alpha hydroxyl acid, all of which are beneficial to the scalp, and a healthy scalp is essential for removing Herbal hair mask. The flower's estrigent characteristics help reduce oil gland secretion and excessive oil secretion of the scalp. This property of the flower helps cool and smooth the scalp, providing relief from itchy scalp and hair mask.

### **Neem:**

Neem helps to clear congested pores and promotes hair development. Neem's antifungal qualities work wonders in the fight against dandruff.

### **Ginger:**

Ginger is used to cure itchy scalps caused by dandruff and dry scalp. It aids in the maintenance of a healthy and clean scalp. Its anti-bacterial or anti-microbial properties help it battle skin and scalp problems. Ginger juice can aid to improve scalp health and may even help with itchy scalp and dandruff.

### **Tulsi**

Because of its religious and spiritual significance in Indian culture, Tulsi (scientific name: *Ocimum sanctum*) is also known as holy basil. It is a perennial herb native to India that blooms throughout the year in tropical parts of Southeast Asia. Tulsi is a branching shrub that can grow up to 60 cm in height. It has scented leaves and hairy branching stalks with small white to purple blooms on them. Because of its numerous health advantages, the plant is known as the "queen of herbs" or "mother medicine of nature" in Ayurveda. Tulsi is considered an adaptogen in Ayurveda, India's ancient medicine. An adaptogen is a naturally occurring chemical that aids the body's adaptation to varied stimuli Tulsi.

### **Coconut oil:**

Coconut oil is an edible oil derived from the wick meat and milk the coconut palm fruit coconut oil is a white solid fat melting at warmer room temperture of arroung 25 degree calcius in warmer climates during the summer months it is a clear thin liquid oil unrefined verieties have a dinstict coconut aroma.



## Organoleptic

evaluation signified that the pack is characteristic smelled, coarsely powdered. Physicochemical parameters revealed that the loss on drying was as minimal as 1.26%. pH was found to be neutral as 6.69 to fit the requirements of different hair types. Ash value was found to be optimum, visualizing the presence of minerals in nominal quantities. It confirmed the presence of main phytoconstituents, which provide complete nourishment for both the scalp and the hair. Because the ingredients were employed in their natural form, without artificial additives, the irritancy test for redness and swelling was negative. Rheological evaluation is required to examine the flow ability of powdered formulations to ensure that they are neither dense or compact, as this could cause them to absorb moisture, compromising their stability. It was also shown to have a very low moisture content. Because the formulation's constituents have a well-established literature review stating them to be an important part of a home hair care cure, and because this article only covers the preparation and evaluation of the formulation, efficacy in a variety of situations. Stability tests were carried out to determine the formulation's compatibility, including colour, odour, appearance, texture, and pH. Because the formulation is manufactured using dried herbal materials, it has a low risk of breakdown because it contains a humid substance in either raw or final form. The formulation was stored at room temperature for a month to see if any noticeable changes in colour, odour, texture, or appearance occurred. The pH of the water was also noted. Because it is a natural herbal based formulation with no dangerous ingredients, it can be stored easily and utilised at any temperature, in any location in its stable state. However, frequent use of it results in a large amount of data.

## CONCLUSION:

A herbal hair mask is a light and gentle treatment for dandruff in the hair. The non-toxic nature of herbal-based cosmetics is well-known. It nourishes both the skin and the hair on the scalp. It removes excess oil from the scalp, which helps to treat dandruff. The usage of this pack on a regular basis results in hair that is free of problems, healthy, and rich. Dandruff is caused by an oily scalp and poor hygiene. The beneficial features of the herbal hair pack were revealed in this study, and more research is needed to discover the additional benefits that this hair pack can provide. Natural therapies are widely utilised today all over the world since they are safer and have fewer side effects.

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