

A Review on Herbal Anti Dandruff Hair Mask

Miss. Mrunal T. Wakale¹, Miss. Ankita P. Jadhav², Miss. Pratiksha V. Varpe³,
Mr. Ganesh M. Telangi⁴, Mr. Rahul Lokhande⁵

Samarth Institute of Pharmacy Belhe, Pune, Maharashtra, India^{1,2,3,4}

Assistant Professor, Samarth Institute of Pharmacy Belhe, Pune, Maharashtra, India⁵

mrunalwakale@gmail.com¹, ankitapj105@gmail.com², patuvarpe12@gmail.com³

ganeshtelangi25@gmail.com⁴, rahulloks18@gmail.com⁵

Abstract: Herbal anti dandruff hair mask helps you smoothen the irritating, oily and flaky scalp by controlling dandruff thus giving you itch free healthy scalp and nourished hairs. The dandruff is a major problem of hair, which cannot be fully cured with the aid of chemical. This chemicals causes split ends and weakens the hair. Hairs are the delicate part of the body. So, accordingly to take care of them we made the formulation of hair mask. The ingredients in the hair mask are added by knowing their benefits to hairs. The purpose of using hair mask is to remove dirt and dandruff, promotes hair mask, luster, strengthens and darkens the hairs. The formulation of hair mask that is completely free of chemicals. It only contains the natural ingredients which does not harm you hairs.

Keywords: Hair, Herbal, Anti Dandruff, Neem, Shikakai

I. INTRODUCTION

The Product which is use for cleansing, modifying the texture, changing of the color, giving life to the stressed hair, providing the nourishment to the hair and giving the healthy look to the hair is called as hair care products. There are some type of hair like normal hair, oily hair, dry hair vary from human to human. In day today life dandruff is major and common problem nowadays. In this condition flakes on scalp skin produces, causes itching on skin. In most dermatological skin problem dandruff is a non inflammatory and chronic condition related to the scalp that is eminent by an excessive range of scalp tissue being affected. The main reason of dandruff is not visible properly, but there are many factors such as oily scalp, poor hygiene leading to fungal infections and it become more often if hair is not washed for a week. The families who can't afford anti-dandruff tools and uses dirty water this causes dandruff frequently. A Yeast like fungus, *malassezia*, feeds on oils on the scalp of most adults, dry skin, sensitivity of hair care products or contact dermatitis, other skin conditions such as psoriasis and eczema are also the causative factors behind dandruff. Dandruff causes hair loss and embarrassment in public places on the skin in various areas because of dandruff a high level of sebum occurs. Its symptoms are redness, flakes, and itching of the scalp.

The formulation are herbal based with viable substituent for synthetic drugs. There are many herbal formulations available in market containing herbal ingredients like extracts of plants and essential oils. In recent few days, natural products have shown a huge growth in herb based cosmetics. Many plants have beneficial effects on hair. The antioxidant potential is tested at various levels. Various preparations used in hair care are present in various forms of creams, dyes, powders, tonics, etc. Hence, the knowledge from Ayurveda and Herbals will be enhanced by information on the evidence basis of these plants. These herbal drugs are easily available, cost effective, safe, effective and have very less side effects. Due to the less side effects and natural effect demand in the market of herbal products is increasing. Mostly Many Formulation deals with the preparation and assessment of poly-herbal antidandruff formulation containing the goodness of Amla, Bhringraj, Reetha, Hibiscus, Neem, Tulsi, Ginger, Shikakai and Nagarmotha.

1.1 Benefits of Herbal Anti-Dandruff Hair Mask-

1. Stimulate hair growth.
2. Cleansing.
3. Remove dandruff.
4. Reduce hair fall.
5. Prevent premature graying.

1.2 Uses of Herbal Plants-

A. Amla

Amla known as source of vitamin C. It is packed with many health benefits. Powdered amla is used as a gooseberry. Amla is a rich essential ingredient in hair tonic to promote hair growth and improve hair pigmentation. It strengthens and nourishes the roots, improves the colour and radiance. Applying amla oil to the roots of hair improves hair growth and color. A very popular application is to reduce baldness and hair loss. This quality is due to the tannin content in the form of antioxidants.

B. Neem

Neem helps to cleanse the scalp. It removes clogged pores and improves hair growth. Regenerative properties are very important for the treatment of dandruff. It provide with preservatives and healing properties and can be used for a variety of hair problems. Dandruff can remove by using neem leaves as a rinse. The most common uses of neem can be found in our hair care rituals. According to Ayurveda, Amla, Lisa, Neem and Acacia it is a necessary herb for healthy curls, promoting hair growth, reducing hair loss, and making hair more voluminous.

C. Reetha

Reetha shows cooling effects and acts like a very good thing for cleansing of the skin. It prevent the scalp from drying out and keep the skin soft. A mixture of reetha and chana when applied to the skin, it gives excellent results on skin. It makes the skin soft and gental. It is also used to remove cell flakes from the head.

D. Bhringraj

Bhringraj is a herb that promote hair growth. A popular Ayurvedic ingredient used for hair growth. It helps increase blood flow to the scalp by stimulating and inducing hair growth, which is probably lost due to dandruff. It also prevents scalp problems caused by dandruff and irritation and does not affect hair growth.

E. Tulsi

Tulsi, or Holy Basil, has been used in religious works for centuries. Contributes to blood circulation, smoothens the scalp, reduces irritation and dandruff, and promotes hair growth. Used in the form of paste to prevent dandruff and keep the base of the scalp clean.

F. Ginger

Ginger is an excellent hair conditioner rich in minerals and essential oils that makes your hair easy to comb, soft and shiny. Helps relieve itching, dryness and flaky scalp. It has natural anti-inflammatory and antiseptic properties that help keep the scalp healthy and clean.

G. Hibiscus

Hibiscus or "Gudar" is the most beneficial ingredient in hair. It is used for hair growth, it regrowth and hair loss. Hibiscus contains amino acids, vitamins A and C, alpha hydroxy acids, and other nutrients that are very beneficial to hair and scalp. Keeps your scalp healthy and minimizes the risk of dandruff.

H. Shikakai

Shikakai is useful as an anti-dandruff agent due to its unique ability to cleanse the scalp without irritating it. It is especially useful in combating chronic dandruff caused by excess oil on the scalp. It removes excess oil from the scalp and helps reduce dandruff during normal use. Shikakai is one of the most useful ayurvedic herbs that is used for hair related problem especially hair fall. Shikakai helps to remove dirt and excess oil from the scalp as well as promote hair growth. This is because of its astringent property.

I. Nagarmotha

Nagarmotha is commonly known as Nut grass. It mainly use for the scalp disorder. It is effective in controlling dandruff. This is because dandruff is a fungal disease and nagarmotha is effective against dandruff causing fungus. Regular use of the nagarmotha improves hair texture, adds shine and stimulates hair growth. Effectively it also prevents hair fall and premature graying of hair.

II. MATERIALS AND METHODS

2.1 Materials

All the natural materials used i.e., Amla, Bhringraj, Neem, Reetha, Hibiscus, Tulsi, Ginger, Shikakai and Nagarmotha.

2.2 Method of Preparation

- **Preparation of the Herbal Powder:** All the herbal ingredients are in dry form and grinded to make fine powder.
- **Weighing:** All the required herbal powders for hair mask preparation were accurately weighed individually by using digital balance.
- **Mixing:** All these fine ingredients were mixed thoroughly by mixer to form a homogenous fine powder.
- **Sieving:** This fine powder was passed through sieve no. 80, to get the sufficient quantity of fine powder.
- **Collection and Storage:** The powder mixture was collected and store in suitable plastic container and used for doing evaluation parameters.

Table 1: Ingredients

Sr. No.	Name of Ingredient	Uses
1.	Amla	Hair growth promoter
2.	Neem	Anti dandruff
3.	Reetha	Hair cleanser
4.	Bhringraj	Skin infection
5.	Tulsi	Anti bacterial
6.	Ginger	Anti septic
7.	Hibiscus	Nourishment
8.	Shikakai	Foam base & anti dandruff
9.	Nagarmotha	Scalp Disorder

2.3. Evaluation Parameter

The prepared herbal anti-dandruff hair mask was evaluated by following parameters.

A. Organoleptic Evaluation

By utilizing sensory organs like eyes or nose, the examination of the formulation is performed under this evaluation, and it includes macroscopic characteristics of the drug or product, such as colour, odour, texture and appearance.

B. Physicochemical Evaluation

a) pH

pH of 1% aqueous solution of the formulation was measured by using a calibrated digital pH meter at constant.

b) Loss on Drying

Weigh about 1.5 gm of the powdered drug into a weighed flat and thin porcelain dish. Dry in the oven at 100°C or 105°C, until two consecutive weighing do not differ by more than 0.5 mg. Cool in desiccators and weigh. The loss in weight is usually recorded as moisture.

c) Ash Content

Total Ash Value

Place about 2-4 gm of the ground air-dried material, accurately weighed, in a previously ignited and tared crucible (usually of platinum or silica). Spread the material in an even layer and ignite it by gradually increasing the heat to 500-

6000C until it is white, indicating the absence of carbon. Cool in a desiccator and weigh. If carbon-free ash cannot be obtained in this manner, cool the crucible and moisten the residue with about 2 ml of water or a saturated solution of ammonium nitrate. Dry on a water-bath, then on a hot-plate and ignite to constant weight. Allow the residue to cool in a suitable desiccator for 30 minutes and then weigh without delay. Calculate the content of total ash in mg per gm of air-dried material.

C. Phytochemical Evaluation

Various tests were performed, to identify the phytoconstituents present in the products and their effect is shown on the body. Every plant exhibits certain phytochemical properties, which show a number of beneficial effects.

a) Detection of carbohydrate

I. Molisch's Test

To 2-3 ml aqueous extract, add few drops of alpha-naphthol solution in alcohol, shake and add conc. H_2SO_4 from sides of the test tube violet ring is formed at the junction of two liquids.

II. Fehling's Test

Mix 1ml fehling A and 1 ml fehling B solutions, boil for 1min. Add equal volume of test solution. Heat in boiling water bath for 5-10 min. First yellow, then brick red ppt is observed.

b) Detection of alkaloids

I. Hagers Test

2-3 ml filtrate with hagers reagent gives yellow ppt.

II. Mayer's Test

2-3 ml filtrate with few drops mayers reagent gives cream ppt

c) Detection of Volatile Oil

2 to 4 gm of hair mask on treatment with alcoholic solution of sudan III develops red colour in the presence of volatile oils.

d) Detection of Protein

Biuret Test- To 3 ml T.S. add 4% NaOH and few drops of 1% $CuSO_4$ solution. Violet or pink colour appears.

e) Foam Test

Shake the drug extract or dry powder vigorously with water. Persistent stable foam observed.

D. Rheological Evaluation

a) Tapped Density –

Tapped density is an increased bulk density attained after mechanically tapping a container containing the powder sample. After observing the initial powder volume or mass, the measuring cylinder or vessel is mechanically tapped for 1 min and volume or mass readings are taken until little further volume or mass change was observed. It was expressed in grams per milliliter.

$$\text{Tapped Density} = \text{Mass} / \text{Tapped Volume}$$

b) Bulk Density

Bulk Density is the ratio between the given mass of a powder and its bulk volume. Required amount of the powder is dried and filled in a 50 ml measuring cylinder up to 50 ml mark. Then the cylinder is dropped onto a hard wood surface from a height of 1 inch at 2 second intervals. The volume of the powder is measured. Then the powder is weighed. This is repeated to get average values.

$$\text{Bulk Density} = \text{Mass} / \text{Bulk Volume}$$

c) Angle of Repose

It is defined as the maximum angle possible in between the surface of pile of powder to the horizontal flow.

It required amount of dried powder is placed in a cylindrical tube open at both ends is placed on a horizontal surface. Then the funnel should be raised to form a heap. The height and radius of the heap is noted and recorded. For the above method, the angle of repose (θ) can be calculated by using the formula.

$$\theta = \tan^{-1} (h/r)$$

Where θ – Angle of repose, h – Height of the heap, r – Radius of the base

d) Hausner's Ratio

Hausner's Ratio = Tapped Density / Bulk Density

e) Carr's Index

$$\text{Carr's Index} = \frac{\text{Tapped Density} - \text{Bulk Density}}{\text{Tapped Density}} \times 100$$

E. Stability Studies

The powdered formulation was stored for some time under different temperatures (35 °C and 40°C) and humidity conditions, and the change in the physical properties was observed.

F. Microbial Assay

For anti fungal activity *Candida albicans* were used by cup plate method. The culture was maintained on agar slants. The test stain of 0.25 ml was inoculated into the media after the medium solidified, a two wells were made in the plates of 6 mm. One well was loaded with sample and the another was filled with fungus *Candida albicans*. The plates were incubated at 37°C for 24 hrs. the anti fungal activities were evaluated by measuring the zone of inhibition.

IV. CONCLUSION

This study presents a number of plant drugs with proven efficacy in hair care preparation. A herbal hair mask treats dandruff from the hair in very easy manner. Herbal based cosmetics are popular for their non toxic nature. This hair mask helps to nourishes the skin of the scalp. It treats dandruff by removing excess oil from the scalp. Oily Scalp and poor hygiene leads to dandruff in the hair. If this mask used regularly it leads to healthy and dandruff free hair. Nowadays natural remedies are used in more amount in all over world, because of their safe and less side effects compared to chemical based products. Herbal formulations can be prepared at home with the use of available ingredients.

REFERENCES

- [1]. Rashmi S. Pal, Nikita Saraswat, Preparation and Assessment of Poly-Herbal Anti-Dandruff Formulation, The Open Dermatological Journal,2020,volume 14,1874-3722/20,pp.22-27.
- [2]. Abhishek Singh, Abhishek Saxena, Formulation and Evaluation of Herbal Anti-Dandruff Shampoo from Bhrinraj Leaves, Pharmacy Practice and Research Volume I Issue I, CR Journals,2020 pp.5-11
- [3]. Sajid A. Mulani, Nitin Mali, Formulation and Evaluation of dry herbal powder shampoo, International Journal of Pharmaceutical Chemistry and Analysis 2021; 8(3),pp.112 -117
- [4]. Rashmi Saxena Pal, Yogendra Pal, Synthesis and Evaluation of Herbal Based Hair Dye, The Open Dermatology Journal,2018,Volume 12,pp. 90-98.
- [5]. Nikita Saraswat, Rashmi S Pal, Preparation and Assessment of Poly-Herbal Anti-Dandruff Formulation, The open Dermatology Journal,2020, Volume 14,pp.22-27.
- [6]. Mrs. K. Sravanthi, N. Kavitha, A review on Formulation and Evaluation of Herbal Anti Dandruff Shampoo, International Journal of Pharmaceutical Research and Applications, Volume 6, Issue 3 May-June 2021, pp:1300-1311.
- [7]. M.Surya Prabha, A.Sravani, Formulation and Evaluation of Herbal Hair Powder against dandruff, Int. J. Pharma. Sci.Rev.Res, 28(2),September-october 2014; Article No.09, pp.43-47.