



**INTERNATIONAL JOURNAL OF  
PHARMACEUTICAL SCIENCES**  
[ISSN: 0975-4725; CODEN(USA): IJPS00]  
Journal Homepage: <https://www.ijpsjournal.com>



## Review Article

# Formulation and Evaluation of Herbal Anti-Dandruff Hair Mask: A Review

**Shweta Sahu, Khileshwari Sahu, Namrata Kujur, Shubham Deshmukh,  
Chandraprabha Dewangan\***

*Rungta Institute of Pharmaceutical Sciences and Research Kohka , Bhilai (C.G), India*

## ARTICLE INFO

Published: 25 Jun 2025

### Keywords:

Learning and memory, long term potentiation, cognition impairment, Nootropics, Centella asiatica and neuroprotection.

### DOI:

10.5281/zenodo.15736037

## ABSTRACT

Learning and memory are fundamental cognitive processes governed by dynamic neurobiological mechanisms that support adaptation, decision-making, and survival. These processes are mediated by synaptic plasticity, neurogenesis, neurotransmitter activity, and increasingly recognized epigenetic regulations. In recent years, natural compounds have gained prominence for their potential neuroprotective effects in enhancing cognitive performance. Hair masks are a solution to hair problems such as dandruff, frizziness, brittleness, premature graying. With so many types of hair masks in the market, it can be confusing to choose the one that suits hair lines and has fewer side effects. The ingredients in the hair mask are added according to what is known to be good for the hair. The motive of using a hair mask is to remove dirt and dandruff, strengthen the hair and darken the hair colour. The mask is completely chemical free. It contains only natural ingredients that will not harm your hair. Hair root is the most important organ in humans, it determines the external appearance, makes Gender differentiation, provides thermal protection and plays a role in defense. Young people are starting to face serious hair problems due to many lifestyle changes such as fatigue, stress, poor diet and different hair colouring techniques. Alopecia is non-temporary hair loss in most cases. Strengthening of hair follicles is vital for improving hair growth and preventing hair loss. Hair is the most delicate part of the body. That's why we've created a hair mask recipe to properly care for them. The substances in the hair are added knowing the benefits that can strengthen and darken the hair and combating memory impairment. Centella asiatica, a traditional medicinal herb widely used in Ayurvedic and Chinese medicine, has emerged as a promising nootropic and neuroprotective agent due to its potent antioxidant, anti-inflammatory, and cognition-enhancing properties. Learning and memory are intricate cognitive processes that enable us to acquire, consolidate, and retrieve information. Learning and memory loss impact cognitive

**\*Corresponding Author:** Chandraprabha Dewangan

**Address:** Rungta Institute of Pharmaceutical Sciences and Research Kohka , Bhilai (C.G), India

**Email** ✉: [chandra.prabha@rungtacolleges.com](mailto:chandra.prabha@rungtacolleges.com)

**Relevant conflicts of interest/financial disclosures:** The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.



functions, often resulting from aging or neurodegenerative diseases. However, memory loss, or the inability to retrieve previously learned information, is a pervasive and debilitating phenomenon that affects millions worldwide.

## INTRODUCTION

### Herbal cosmetic :

The cosmetics, according to the Drugs and Cosmetics Act is defined as articles intended to be rubbed, poured, sprinkled or sprayed on, introduced into or otherwise applied to the human body or any part there of for cleansing, beautifying, promoting attractiveness or altering the appearance. The cosmetic does not come under the preview of drug license". Definition of Herbal Cosmetics These are the cosmetics which are prepared using plant products having cosmetic actions. Recently the use of botanicals in cosmetics have increased mainly due to the mild action and non-toxic nature. In cosmetics, both natural and phyto-ingredients are used. Natural products Include oils, extracts, secretions etc. Phyto-ingredients include pure constituents obtained by various process.

### Types According to Site of Application

- Skin
- Hair
- Dentifrice
- Nail
- Eyes

The herbal products/ drugs are derived from vegetable sources from various parts of the plants like root, leaf; flower fruit extrude or plant as a whole. There are three kinds of ingredients used in herbal products

1. Herbal
2. Mineral
3. Animal

Hair are the delicate part of the body. Hair development is controlled by a complex and dynamic mechanism that is still unknown. Hair shaft synthesis, elongation, and eventually loss is all part of this cyclical mechanism. Human hair consists of follicles in the antigen, cartage, and telogen and exogen stages. Fig 1: Stages of hair growth In our day-to-day lives, we face many problems that lead to dandruff, which remains a significant and widespread issue today. It was primary cause of flakes is not clearly apparent, however there are numerous contributing issues, including an excessively oily skin, inadequate cleanness that can result in fungal infections, and an increase in frequency whenever scalp is left unwashed for some weeks. This condition results in skin itching from the flakes on the scalp. In the majority of dermatological skin conditions, lice is a chronic, allergic condition of the hair follicle that is evident from a broad range of scalp being harmed. These herbal products are widely accessible, affordable, secure, efficient, and have very few side effects. Since ancient times, herbal shampoos, conditioners, and hair masks have been popular. Natural remedies are increasingly used worldwide these days. Based on the results of this investigation, it was determined that the formulation of an anti-dandruff herbal hair mask has all the desirable qualities of an ideal herbal hair mask, is safe, is more effective, and is commercially viable.

### 1 NEED OF ANTI DANDRUFF HERBAL HAIR MASK

The reason for this herbal mask is a perfect solution for those who want to get rid of and ruff without using harsh chemicals. The natural ingredients in the mask not only help in eliminating dandruff but also nourish the scalp and promote healthy hair growth. Its natural



ingredients make it safe for regular use without any harmful side effects.

## HAIR GROWTH CYCLE AND ITS MECHANISM

The hair growth undergoes a tiresome cycle where the anagen phase followed by the catagen and the telogen phase (7). In the anagen phase, the hair is actively growing while in the catagen phase it is characterized by the degeneration and resorption of the lower region of the hair follicle. The resting phase, where the hair is inactive, is called telogen phase after this phase the growth of the hair follicle resumes in the scalp, a hair growth cycle has three main phases: Anagen, catagen, and telogen. The anagen phase is the growth cycle typically lasts 35

years. On a healthy scalp, there are approximately 1,000,000 hair and 90% of the follicles are continually in the anagen phase of hair growth. The catagen stage follows the end of the growth period when a follicle begins to become dormant. The telogen stage is a dormant or resting period that lasts 3-4 months. When the dormant phase ends, an old hair falls out. A hair follicle then returns to the anagen stage, and a new hair begins to grow. An average rate of hair growth is about half an inch per month depending on hair follicles and age of an individual. On average, 50-60 scalp hairs are lost daily in a normal hair growth cycle and new hairs begin to grow from these follicles. Hair loss begins when less new hair begins the regrowth stage.

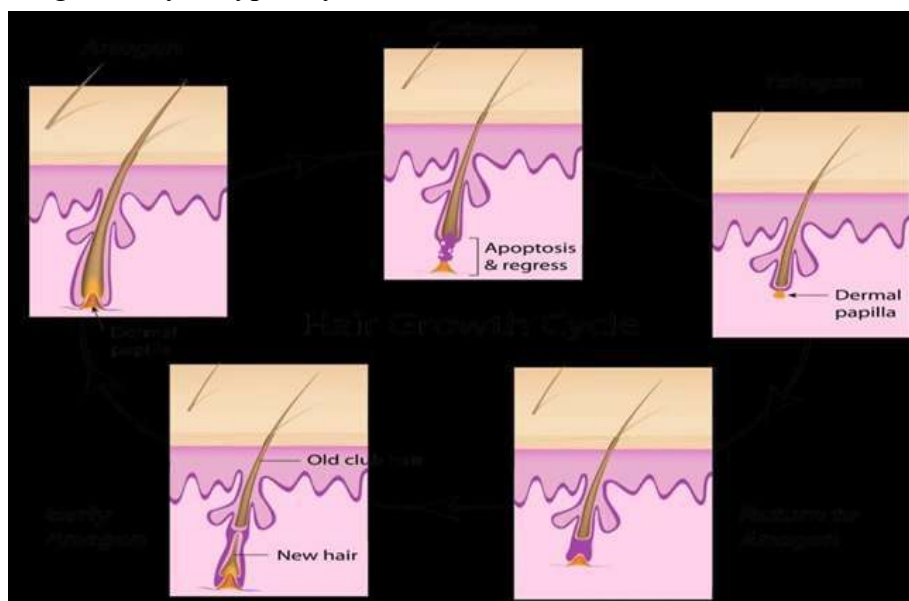


Figure :- 1 Hair Growth Cycle and Mechanism

## DANDRUFF A SCALP DISORDER DEFINITION :-

Dandruff is a common scalp disorder, characterized by presence of corneocytes that form clusters due to their high cohesive power, in the

form of flaky white to yellowish scales, accompanied by itching. It has been observed that dandruff occurs mainly between puberty to middle age, the phase when sebaceous glands are most active.

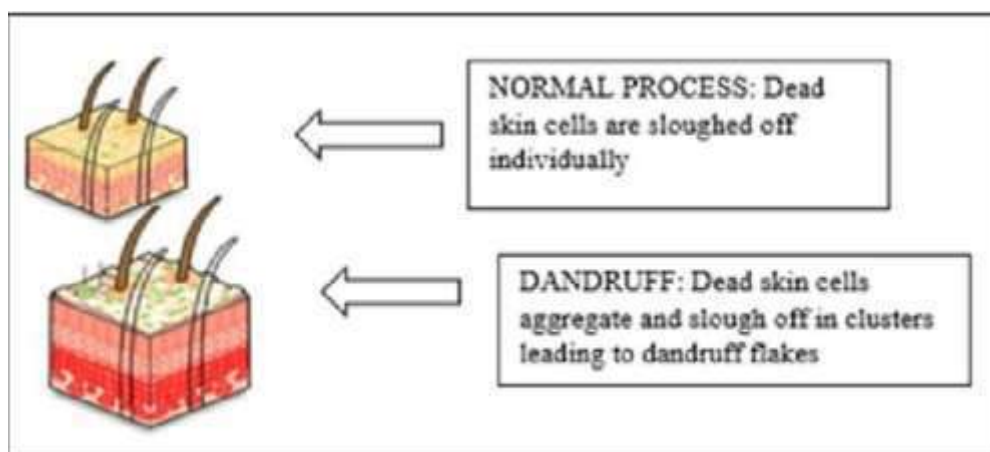


Figure :- 2 Dandruff in Hair

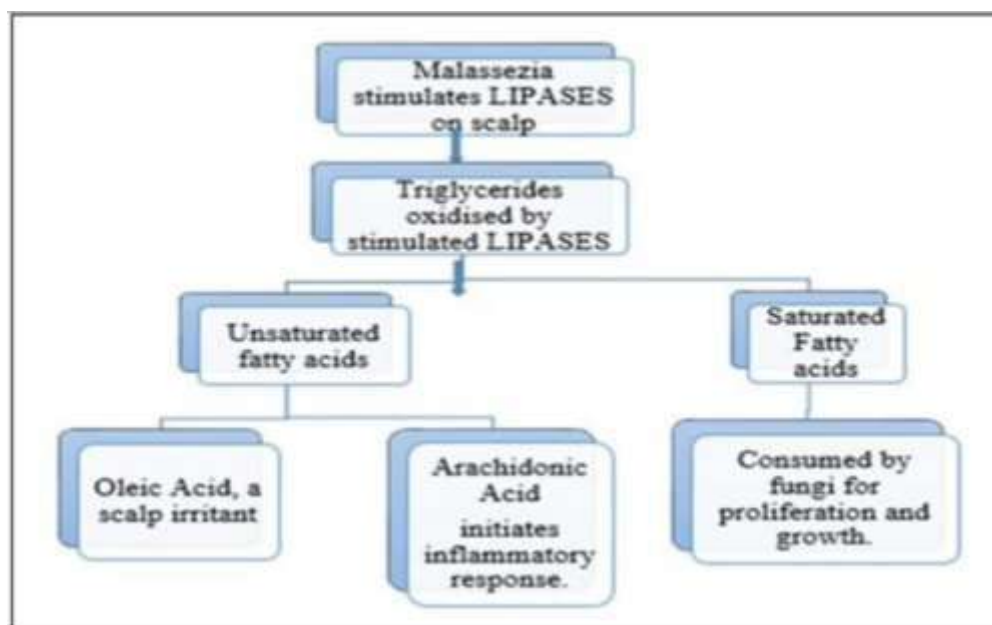


Figure :-3 Mechanism by which malassezia causes dandruff

### BENEFITS OF HERBAL ANTI-DANDRUFF HAIR MASK

- Stimulate hair growth.
- Cleansing.
- Remove dandruff.
- Reduce hair fall.
- Prevent premature graying.
- Smoothen the irritating, oily, & flaky scalp.

### Advantages of Herbal Anti-Dandruff Hair Mask

- Hair mask enhances the development of hair.

- Cleansing
- It eliminates dandruff.
- It stops hair loss.
- Keep from becoming grey too soon.

### NEED OF ANTI DANDRUFF HERBAL HAIR MASK

- The reason for this herbal mask is a perfect solution for those who want to get rid of dandruff without using harsh chemicals.
- The natural ingredients in the mask not only help in eliminating dandruff but also nourish the scalp and promote healthy hair growth.



## Hair mask

### Definition :

Hair mask is an intense nourishing treatment to help strengthen, hydrate, de-frizz and restore dry, damaged, processed or curly hair to healthy bounce and shine. Masque is an alternate spelling for some hair masque treatments – unless you're referring to an Elizabethan courtly drama called a masque.

## MATERIAL USED IN HAIR MASK

### (1) AMLA

Amla is a superfood that nourishes hair, follicles, and the scalp because it is loaded with vitamins and minerals. Moreover, it improves blood flow, which stops hair loss. Also, it gives the follicles oxygen, which strengthens the fibers.

Kingdom	Plantae
Division	Angiospermae
Class	Dicotyledonae
Order	Geraniales
Family	Euphorbiaceae
Genus	Emblica
Species	Officinalis Geartn.

**Taxonomical classification**



**Figure- 3 Amla fruit**

### (2) NEEM

Neem aids in scalp cleansing. It promotes healthy hair development and unclogs congested pores. The ability to regenerate is crucial for the treatment of dandruff. It can be utilized for dealing with a range of problems relating to hair because it has preservatives and therapeutic characteristics. Use a neem leaf-based rinse to get rid of dandruff. Neem is the most frequently used component in hair care products.





Figure - 4 Neem (Leaves)

**Taxonomical classification :-**

KINGDOM	PLANTEA
DIVISION	MAGNOLIOPHYTA
CLASS	MAGNOLIOPSIDA
ORDER	SAPINDALES
FAMILY	MELIACEAE
GENUS	AZADIRACHTA
SPECIES	A.INDICA

**(3)REETHA**

Reetha appears to be very helpful for skin cleansing and has cooling effects. It maintains the moisture of the scalp and prevents hair from getting dried off. The benefits of using Reetha on the skin are fantastic. It softens and silkens the scalp on the skin are fantastic.

**Taxonomical classification :-**

KINGDOM	PLANTAE
ORDER	SAPINDALES
GENUS	SAPINDUS
FAMILY	SAPINDACEAE



Figure - 5 Reetha (fruits)

**(4) 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. With antimicrobial properties, hibiscus curbs the growth of dandruff-causing yeast on your scalp, unclogs dandruff flakes from your hair follicles, and prevents dandruff recurrence. In India, Hibiscus flowers and leaves are used for the abortion, antifertility, contraceptive, Diuretic, Menorrhagia, Bronchitis, Emmenagogue, Demulcent, Cough.

**Taxonomical classification :-**

KINGDOM	PLANTAE
ORDER	MALVALES
FAMILY	MALVACEAE
SUBFAMILY	MALVOIDEAE
GENUS	HIBISCUS
SPECIES	ROSA SINENSIS



**Figure – 6 Hibiscus (Flower)**

#### **(5) PAPAYA**

One of the primary causes of dandruff is a fungal infection. And papaya's antifungal properties help control and prevent dandruff, itchy scalp, dryness, flaking and more. Moreover, papaya is made of components that heal concerns such as breakage, split ends and hair loss. Enriched with enzymes of papain, chymopapain, and vitamins A, C with antioxidant characteristics, papaya extracts nurture and condition dull, damaged hair. Using papaya for hair nourishes the scalp and strands immensely and leaves the hair feeling soft and hydrated. It

also reduces friction between the strands of your hair and makes your hair manageable.

#### **Taxonomical classification :-**

KINGDOM	PLANTAE
SUB KINGDOM	TRECHOBINTA
CLASS	MAGNOLIOPSIDA
SUB CLASS	DILENIIDAE
ORDER	BRASSICALES
GENUS	CARICA



**Figure – 7 Papaya (Leaves)**

#### **(6) FENUGREEK:-**

Using fenugreek for hair growth can be one of the best decisions of your life! Fenugreek seeds are packed with proteins and nutrients that increase blood circulation to the scalp and help strengthen hair follicles. They can help prevent hair fall and thinning and also reactivate your follicles for hair regrowth. Fenugreek nourishes your hair, making it stronger and healthier.



**Figure – 8 Fenugreek (Seeds)**

#### **Taxonomical classification**

KINGDOM	PLANTAE
CLASS	MAGNOLIOPSIDA
FAMILY	FABACEAE
GENUS	TRIGONELLA
SPECIES	TRIGONELLA, FOENUM GRAECUM



**(7) FLAXSEED:-**

Flaxseed's hydrating qualities help it fight dullness and roughness. The inclusion of replenishing elements in flaxseed such as vitamin B, selenium, and copper helps restore moisture to the hair and scalp. These substances promote hair development and make it healthier and thicker.

**Taxonomical classification**

KINGDOM	PLANTAE
ORDER	MALPIGHIANES
FAMILY	LINACEAE
GENUS	LENUM
SPECIES	L. ASISTATISSIMUM

**Figure – 9 Flaxseed (Seeds)****(8) HENNA :-**

Its antifungal and antimicrobial properties may be beneficial for the hair and scalp, particularly for premature graying and reducing dandruff. However, special care is required when applying henna to frizzy and dry hair — henna tends to dry out hair. Henna is most beneficial in its natural form.

**Taxonomical classification**

KINGDOM	PLANTAE
ORDER	MYRTALES
FAMILY	LYTHRACCAE
GENUS	LAWSOIA
SPECIES	L. INERMIS

**Figure – 10 Henna (leaves)****(9) SHATAVARI :-**

Shatavari is a rich source of vitamins A, B1, B2, C & E and minerals including magnesium, calcium and folic acid. It also has essential oils like arginine, tyrosine, tannin, and resin. The presence of essential fatty acids like gamma-linoleic acid also help in the treatment of a variety of diseases and ailments. Let's find out more about the shatavari benefits for hair. Inflammation: The presence of a compound called racemofuran in Shatavari enhances its anti-inflammatory qualities and makes it a potent antioxidant.

**Figure – 11 Shatawari (root)****Taxonomical Classification**

KINGDOM	PLANTAE
ORDER	ASPARAGALES
FAMILY	ASPARAGACEAE
GENUS	ASPARAGUS
SPECIES	A.RACEMOSUS

**REFERENCES**

1. [https://www.researchgate.net/publication/361809533\\_Formulation\\_and\\_Evaluation\\_of\\_Herbal\\_Anti\\_Dandruff\\_Hair\\_Mask](https://www.researchgate.net/publication/361809533_Formulation_and_Evaluation_of_Herbal_Anti_Dandruff_Hair_Mask)
2. Abhishek Singh, Abhishek Saxena, Formulation and Evaluation of Herbal Anti-Dandruff Shampoo from Bhringraj Leaves,



- Pharmacy Practice and Research Volume I Issue I, CR Journals, 2020 pp.5-11
3. Dasaroju S. Gottumukkala KM. Current trends in the research of *Embllica officinalis* (Amla): A pharmacological perspective. *Int J Pharm Sci Rev Res* 2014; 24:150-9.
4. Khanpara, K., & Harisha, C. R. (2015). a Detailed Investigation on Shikakai (*Acacia Concinna* Linn.) -Fruit a Detailed Investigation on Shikakai (*Acacia*. *Journal of Current Pharmaceutical Research*, 9(1), 6-10.
5. Akash Jaybhaye, Rohit Panchal, et.al, Formulation of Herbal Hair Mask, 2020 IJCRT, Volume 8, Issue 9 September 2020, pp.2480-2481
6. Kokate C.K.,,,"Practical phramacognosy", Vallabh Prakashan, New Delhi, Fourth edition, 1994; 123
7. Kokate C.K., Purohit A.P. and Gokhale S.B. "Pharmacognosy", Nirali Prakashan, Pune, Sixteenth edition, 2001; 242-253
8. Rashmi Saxena Pal, Yogendra Pal,et.al, Synthesis and Evaluation of Herbal Based Hair Dye, *The Open Dermatology Journal*, 2018, Volume 12, pp. 90-98.
9. Nikita Saraswat, Rashmi S Pal,et.al, Preparation and Assessment of Poly-Herbal AntiDandruff Formulation, *The open Dermatology Journal*, 2020, Volume 14, pp.22-27.
10. Mrs. K. Sravanthi, N. Kavitha, et.al, 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.
11. M.Surya Prabha, A.Sravani, et.al, 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.
12. Akash Jaybhaye, Rohit Panchal, et.al, Formulation of Herbal Hair Mask, 2020 IJCRT, Volume 8, Issue 9 September 2020, pp.2480-2481
13. Mistry Zoya, More Bhikhu, et.al, Anti-dandruff activity of synthetic and herbal shampoo on dandruff causing isolate, *International Journal of Applied Research* 2016;2(7), pp:80-85.
14. M.Narshana and P. Ravikumar, et.al, An Overview of Dandruff and Novel Formulation as a treatment strategy, *IJPSR* (2018), Volume9, Issue 2.
15. Sachin Gholve, Sachin Nadarage,et.al, Formulation and Evaluation of Polyherbal Antidandruff Powder Shampoo, *World Journal Of Pharmaceutical Research*, volume 4, Issue 10, pp.1714-1731.
16. Rhea Jacob, Kannan Narayanan,et.al, Formulation of Cost Effective Herbal Shampoo Powder: A Comparative Study, *International Journal of Current Research* 7(02):pp.12645- 12649.
17. Gaurav Lodha, Formulation and Evaluation of Polyherbal Shampoo to Promote Hair Growth and Provide Antidandruff Action, *Journal of Drug Delivery and Therapeutics*. 2019;9(4-A):pp.296-300.
18. Wani Snehal, Khot Nitin, et.al, Preparation and Evaluation of Antidandruff Polyherbal powder shampoo, *Pharmacophore* 2014, vol.5(1), pp.77- 84.
19. Chandrani D, Lubaina SZ, Soosamma M. A review of the antifungal effect of plant extract vs. Chemical substances against *Malassezia* spp. *Int J Pharma Bio Sci* 2012; 3(3): 773-80.
20. Wuthi-udomlert M, Chotipatoomwan P, Panyadee S, Gritsanapan W. Inhibitory effect of formulated lemongrass shampoo on *Malassezia furfur*: A yeast associated with dandruff. *S East Asian J Trop Med Public Health* 2011; 42:



21. Naveen S, Karthika S, Sentila R, Mahenthiran R, Michael A. In-vitro evaluation of herbal and chemical agents in the management of Dandruff. J

**HOW TO CITE:** Shweta Sahu, Khileshwari Sahu, Namrata Kujur, Shubham Deshmukh, Chandrababha Dewangan, Formulation and Evaluation of Herbal Anti-Dandruff Hair Mask: A Review, *Int. J. of Pharm. Sci.*, 2025, Vol 3, Issue 6, 4193-4202. <https://doi.org/10.5281/zenodo.15736037>