

# A RESEARCH ARTICLE ON FORMULATION AND EVALUATION OF POLYHERBAL SHAMPOO FOR HAIR GROWTH

**Shankar Rameshwar Godve<sup>1</sup>, Prof .Anand Gawai<sup>2</sup>, Dr. Nandu Kayande<sup>3</sup>**

1 Student of Bachelor of Pharmacy, Dr. R. N. Lahoti Institute of Pharmaceutical Education and Research Centre, Sultanpur Tq. Lonar, Dist. Buldhana, Pin Code- 443302.

2 Professor, Dr. R. N. Lahoti Institute of Pharmaceutical Education and Research Centre, Sultanpur Tq. Lonar, Dist. Buldhana, Pin Code- 443302.

3 Principal, Dr. R. N. Lahoti Institute of Pharmaceutical Education and Research Centre, Sultanpur Tq. Lonar, Dist. Buldhana, Pin Code- 443302.

## ABSTRACT

The current study was designed for preparation and evaluation of polyherbal shampoo in natural ingredients for hair growth. A number of hair-related herbal drugs like Reetha (*Sapindus mukorossi*), Shikakai (*Acacia concinna*), Amla (*Embllica officinalis*), Neem (*Azadirachta indica*), Flaxseed (*Linum usitatissimum*), Fenugreek (*Trigonella foenum-graecum*) and Aloe vera (*Aloe barbadensis*) were chosen, due to their traditional applications. Methyl paraben acted as a preservative, while gelatin was used to enhance viscosity. Lavender oil was used as a natural perfume and therapeutic agent. The pH, viscosity, foaming ability, dirt dispersion and wetting time as well as stability were evaluated for the prepared formulation. The results showed good cleansing action, adequate pH, and hair growth promoting properties.

**KEYWORDS:** Polyherbal shampoo, Hair regrowth, Herbal cosmetics, Lavender oil, Assessment

## 1. INTRODUCTION :

Cosmetic hair science is a grooming essential. Due to its chemical composition, synthetic shampoos Using can irritate the scalp and damage the hair .

The globally accepted polyherbal formulations are safe with synergistic effects . So, Reetha has saponins that act as a cleansing agent and Amla reinforces hair follicles due to its high vitamin C content . Neem has been known to show antimicrobial activity useful in controlling dandruff . Fenugreek and flaxseed are conditioning agents that may reduce hair fall . It serves as a moisturizing and calming ingredient for scalp .

## 2. AIM AND OBJECTIVES

**Aim:** To develop and assess a polyherbal formulation of hair growth shampoo.

### Objectives:

- Preparing herbal extract
- For making shampoo base
- For evaluation of physicochemical properties

- To evaluate hair growth potential

### 3. MATERIALS AND METHODS

#### 3.1 Materials

All herbals were purchased and authenticated with pharmacognostical criteria.

#### 3.2 Method of Preparation

##### Step 1: Making the herbal extracts

Measure Powder: 1) Weigh out 5g of the Reetha powder. Take 15ml of 70% Ethyl Alcohol.

Combine Herbs: Take 5g of Amla, Shikakai, Neem, Alov vera Powder, Flax seed powder, And Fenugreek in a separate beaker and add 25ml of water.

Heating: Boil the mixture on a hot plate for 5 minutes.

Filtration: Filter the solution to obtain the extract.

##### Step 2: Prepration Final Shampoo:

Weigh 0.5g of gelatin and add it to 25ml of boiling water.

Mixing: Combine and mix all the extracts together thoroughly.

##### Step 3 : Preservative

Methyl paraben was added (0.1%) to prevent microbial contamination .

##### Step 5: Adding Perfume

Lavender oil was incorporated in the last step for giving fragrance and therapeutic advantages.

##### Step 6: pH Adjustment

Citric acid was used to adjust the pH to 5.5 .

### 4. FORMULATION TABLE

Content	Formula 1	Formula 2	Formula 3
Reetha	20%	25%	30%
Shikakai	10%	15%	20%
Amla	10%	10%	10%
Neem	5%	6%	7%
Fenugreek	5%	6%	7%
Flaxseed	5%	6%	7%
Aloe vera	5%	6%	7%
Methyl paraben	1ml	1ml	1ml
gelatin	0.5g	1g	2g
Distilled Water	q.s	q.s	q.s
Lavender oil	q.s	q.s	q.s

## Evaluation parameters of Herbal Shampoo :

### 1. Physical appearance:

The attractiveness of shampoos for consumers tends to be judged visually to observe clarity, colour, odour it shows physical appearance of the formulation.

### 2. pH:

The pH levels of the shampoo tested in 1% and 10% solutions were evaluated using a pH meter at a room temperature of  $25 \pm 2$  °C.

### 3. Dirt dispersion:

1% solution of shampoo solution with water from that 10 ml of diluted shampoo was taken and 01 drop of India ink was added; the test tube was stoppered and shaken 10 times. The amount of ink in the foam was estimated as none, light, moderate, or heavy. Shampoos that cause the ink to concentrate in the foam are considered poor quality. The dirt should remain in the water portion. Dirt that remains in the foam will be difficult to rinse away and will be redeposited on the hair.

### 4. Foaming ability and foaming stability:

The cylinder shake method is the most widely used method for determining foaming ability. At room temperature, 50 ml of of the shampoo solution was filled into a 250 ml graduated cylinder, which was then covered by hand and shaken ten times. The total volume of the foam content after 60 sec of shaking was recorded. The height of the foam generated was measured immediately. To evaluate foam stability, the same procedure was performed and the foam volume after 20 min was measured.

### 5. Percentage of solid contents:

Four grams of formulated shampoo was placed onto a clean, dry evaporating dish. The evaporating dish holding the shampoo was weighed using electronic balance, and the total weight was recorded as  $W_1$ . Then, the evaporating dish was placed on the hot air oven at 50 °C and was kept until the liquid content was completely evaporated. Finally, the cooled evaporating dish holding the solid content was weighed and recorded as  $W_2$ . The percentage (%) of the solid content was calculated as.

### Formula

(Solid content =  $\frac{B-A}{4} \times 100$ .)

### 6. Skin Irritation Test:

Prepared polyherbal anti-dandruff shampoo was applied on skin for 5 minutes after washed and test for irritation or inflammation on the skin.

### 7. Washability:

Wash your hands after applying of shampoo to hand.

### 8. Rheological evaluation:

Viscosity of liquid is determined by using capillary viscometer ie., Ostwald viscometer. When a liquid flows through the capillary tube, the time required for the liquid to pass between two marks (A and B) is

determined. The time of flow of a liquid under test is compared with the time required for the reference sample of known viscosity (normally water is used).



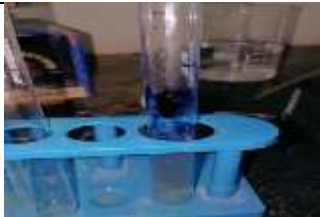

**Formula**





$$\eta = (2r^2(\rho - \sigma)g) / (9v)$$

**Where:**

- $\eta$  = viscosity
- r = radius of sphere/bubble
- $\rho$  = density of sphere/bubble
- $\sigma$  = density of liquid
- g = acceleration due to gravity

**6. RESULTS AND DISCUSSION**

Evaluation test	Formulated shampoo	Image
Physical appearance	Brown colour, Aromatic odour, Smooth appearance	
pH	5.5	
Dirt dispersion	Light	
Foming Index	500	

Percentage of solid contents	12.75%	
Rheological evaluation	2.08cp	
Skin Irritation Test	Non- irritant	
Washability	Easily Washable	

### 7. ADVANTAGES

- Pure and organic ingredients
- Free from side effects
- No surfactants eg: SLS
- No synthetic additives
- No animal testing
- Earth and skin friendly
- No petroleum based ingredients

### 8 Conclusion

The herbal shampoos are the preparations which are used for the washing cleaning and Hair Growth 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 earth and skin friendly. The herbal liquid shampoo was formulated by using the various herbal ingredients. From the overall results showed neutral pH, nonirritant to the skin. Evaluation studies showed good results of appearance, wash ability, non-irritant to the skin, foam stability, dirt dispersion activity, Rheological tests.



## 9. REFERENCES

1. Sushil Kumar Pal, Shashank Tiwari, Sunil Mishra & Sachit Saran (Oct2024) Formulation & Evaluation of Herbal Shampoo International Journal of Life Science Research Archive
2. Shah A., Khan (Dec 2014)Formulation, Evaluation & Comparison of Herbal Shampoo with Commercial Shampoo Journal of Basic & Applied Sciences
3. Prasanna Kumar et al. (Feb 2024) Formulation & Evaluation of Herbal ShampooJournal of Pharmacognosy & Phytochemistry
4. Saili P. Rajput Herbal Shampoo Formulation & EvaluationSlideshare.net
5. Ajay Rajput ,Formulation & Evaluation of Herbal Shampoo for Hair Care Slideshare.net
6. Ayesha Siddiqua et al.(2025) Herbal Shampoo Journal of Pharmaceutical Research International
7. Sanket Limkar et al. (2025 )Review Article on Herbal Shampoo Journal for Research in Applied Science & Engineering Technology
8. Khandelwal KR. Practical Pharmacognosy Techniques.
9. Kokate CK. Pharmacognosy.
10. Suyog Sunil Bhagwat( September 2020) Formulation AND Evaluation OF Herbal Shampoo in IJCRT

### Copyright & License:



© Authors retain the copyright of this article. This work is published under the Creative Commons Attribution 4.0 International License (CC BY 4.0), permitting unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.