



Formulation And Evaluation Of Herbal Hair Growth And Premature Greying Hair Mask

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Abstract: The Objective of present study involves preparation of herbal hair growth and premature greying hair mask by using various herbs like Flaxseed, Fenugreek, Hibiscus, Curry leaves, Black sesame seeds, etc. Herbal hair mask are chemical-free products that promotes hair health. It aims to nourish the scalp, moisturize hair, reduce hair fall, prevent grey hair and promote hair growth. This hair mask is suitable for various types of hair without damaging the hair. The product meets quality standards for a natural, non-irritating hair styling solution suitable for regular use. Hence, it is concluded that the mask is beneficial in maintaining good growth of hairs and prevent premature grey hairs. All prepared formulation is evaluated using parameters like pH, Viscosity, Spreadability, Solubility, Washability, Skin Irritation test. The results shown that herbal hair mask formulation number F3 is more stable and elegant as compared to other formulation.

KEYWORDS: Herbal hair mask, herbs, natural ingredients, hair care, flaxseed, hair growth, grey hair.

I. INTRODUCTION

Hair care has become an important part of daily life, as healthy and clean hair boosts confidence and appearance. Many people today suffer from hair problems like dandruff, hair fall, early greying, and split ends. These issues are often caused by stress, poor diet, hormonal changes, infections, or using too many chemical products. To solve this problem naturally, we created a herbal hair mask. This mask includes natural ingredients, which help moisturize, strengthen and protect the hair. Since it contains only natural herbs and no chemicals, it does not damage the hair.

Keratin, a protein, makes up the majority of hair. The pigment cells called melanocytes that are found in the hair follicles determine the colour of hair. Herbal hair masks are especially helpful for dry, thin, grey hair or damaged hair. They also improve scalp health and give hair a soft, shiny, and strong feel. Unlike many store-bought products filled with chemicals, our mask is completely natural and can be made easily at home. Herbal remedies have been trusted in Ayurveda for thousands of years, and many herbs are known to treat scalp problems like dandruff, hair fall and grey hair effectively.

Causes of grey hair

1. Aging
2. Genetics
3. Chronic stress
4. Poor Nutrition
5. Medical conditions such as thyroids
6. Pollution
7. Chemical Treatments

Causes of Hair Fall

1. Genetics
2. Hormonal imbalance
3. Stress
4. Poor nutrition
5. Chemical Treatments



Advantages of Hair Mask:

1. Boosts Hair Growth
2. Prevent Premature Greying
3. Deeply Conditioning Hair
4. Reduces Hair Fall
5. Soothes Scalp
6. Natural and Chemical-free

II. INGREDIENTS

1. Flaxseed:

Biological name: *Linum Usitatissimum*

Family: Linaceae

Advantages:

- Rich in omega-3 fatty acids, which can nourish hair follicles and promote hair growth.
- Contains lignans, anti-oxidants that may help protect hair from environmental damage.
- May help in reducing scalp inflammation due to its anti-inflammatory properties.
- Prevent the hair loss.
- Promote hair growth.
- Avoid split ends.
- Delays the onset of premature greying.



- Hair is strengthened from the roots.

2. Fenugreek:

Biological name: *Trigonella foenum-graecum*

Family: Fabaceae (Leguminosae)

Advantages:

- Prevent Hair loss.
- Revives damaged hair.
- Control scalp inflammation.
- Fenugreek contains lecithin, which acts as a natural emollient that conditions and moisturizes your scalp and hair deeply.
- Adds shine and soft texture.
- Prevents premature grey hair.
- Contain protein, vitamin C, iron, potassium and lecithin all of which are good for strong hair follicles.



3. Hibiscus:

Biological name: *Hibiscus rosa-sinensis*

Family: Malvaceae

Advanced:

- Scalp moisturizer.
- Promote hair growth.
- Improve hair shine.
- Enhance blood circulation to hair follicles.
- Stimulating new hair growth.
- Encouraging healthy hair growth.
- Enhance blood circulation to hair follicle.
- Great source of vitamins and antioxidants gives natural hair colour.



4. Curry leaves:

Biological name: *Murraya koenigii*

Family: Rutaceae

Advantages:

- Stimulates the hair growth.
- Reducing hair loss.
- Prevent premature greying hair.
- Improves scalp health.
- Maintain good hair health.
- It removes dead skin cells off the scalp.
- Reduces dandruff.
- Hair restoration.
- Reduce frizzy hair.



5. Black sesame seeds

Biological name: *Sesamum Indicum*

Family: Pedaliaceae

Advantages:

- Promote hair growth.
- Reduce hair fall.
- Prevents premature greying hair.
- Strengthens hair roots.
- Scalp nourishment.
- Adds shine and softness.



6. Brahmi

Biological name: *Bacopa monnieri*

Family: Scrophulariaceae

Advantages:

- Promotes hair growth.
- Prevents split ends.
- Promotes hair density.
- Prevents dandruff.
- Reduce hair fall.
- Prevents premature grey hair.
- Adds shine and treat scalp irritation.



7. Licorice

Biological name: *Glycyrrhiza glabra*

Family: Fabaceae

Advantages:

- Soothing the scalp.
- Reduce dandruff.
- Reduce scalp infections.
- Promote hair growth.
- Prevent hair loss.
- Prevent premature greying hair.
- Strengthen hair roots.



8. Aloe vera

Biological name: *Aloe barbadensis miller*

Family: Asphodelaceae

Advantages:

- Helps to stop hair fall.
- Repair dead skin cells on the scalp.
- Improve the texture and shine of hair.
- Promotes the growth of hair.
- Prevent itching on the scalp.
- Reduce breakage of hair.
- Give moisturizing hair.



9. Coconut Oil

Biological name: *Cocos nucifera*

Family: Arcaceae

Advantages:

- It is good for scalp and moisturise the hair.
- Help in hair growth longer, thicker and faster.
- It improves skin health.
- It fights against bacteria.
- Supports hair growth.
- Fights with dryness.
- Adds shine in hair.



10. Rosewater

Biological name: *Rosa damascena*

Family: Rosaceae

Advantages:

- Soothes the scalp.
- Reduce dandruff.
- Promote hair growth.
- Moisturize dry and brittle hair.
- Adds shine in hair.
- Reduce frizziness hair.



11. Rice flour

Biological name: *Oryza Sativa*

Family: Gramineae

Advantages:

- Scalp Cleanser
- Reduced frizz
- Improved shine
- Hair growth



12. Lavender oil

Uses: Fragrance, Anxiolytic (reduces stress)



13. Sodium Benzoate

Use: Preservative



III. METHOD OF PREPARATION

1. Preparation of Flaxseed Gel:

- Added the flaxseeds to the water.
- Boiled this water for around 10 min. and keep stirring to avoid flaxseeds from sticking to the base.
- Let the gel cooled down.
- Put the muslin cloth in a glass measuring cylinder to strain it.



Flaxseed gel

2. Preparation of Fenugreek Gel:

- Soak the fenugreek seeds in hot water.
- Allow to soak for 3-4 hours or overnight.
- Heat the soaked mixture gently for 5-10 minutes to enhance gel release.
- Grind the soaked fenugreek seeds into a smooth paste.
- Filter through muslin cloth to extract smooth gel, if a clearer gel is desired.



Fenugreek Seeds



Heat Fenugreek



Grind Fenugreek Seeds



Fenugreek Gel

IV. FORMULATION OF HERBAL HAIR MASK

Sieve and mix all dry ingredients powders in clean dry mortar pestle. (Brahmi, Hibiscus, Curry leaves, Black sesame seeds, Licorice, rice flour)

In another mortar pestle, Add Aloevera gel, flaxseed gel, fenugreek gel, coconut oil and rosewater while stirring continuously.

Slowly add the dry powder into gel mixture while stirring to avoid lumps.

Dissolve sodium benzoate in small amount of warm rosewater and mix into the formulation.

Add lavender oil and stir well.

Ensure thorough mixing for a smooth gel like consistency.

1. Dry Powder



2. Mix Powder



3. Gel Portion



4. Hair Mask



Sr.no	Ingredients	Quantity		
		F1	F2	F3
1.	Flaxseed gel	19gm	25gm	22gm
2.	Fenugreek gel	12gm	18gm	16gm
3.	Curry leaves powder	2.5gm	1.2gm	1.6gm
4.	Hibiscus powder	2.5gm	1.2gm	1.6gm
5.	Brahmi powder	2.5gm	1.2gm	1.6gm
6.	Black sesame seeds powder	2.5gm	1.2gm	1.6gm
7.	Licorice powder	2.5gm	1.2gm	1.6gm
8.	Aloevera gel	13gm	15gm	13gm
9.	Coconut oil	4.5ml	1.5ml	3.8ml
10.	Rosewater	4.5ml	1.5ml	3.8ml
11.	Rice flour	3gm	1.3gm	1.9gm
12.	Sodium benzoate	1gm	1gm	1gm
13.	Lavender oil	1ml	1ml	1ml

V. EVALUATION PARAMETER

1. Physical evaluation

In this test, the hair mask was observed for colour, odour, texture, etc.

- Colour: light brown
- Odour: pleasant
- Texture: smooth

2. pH test

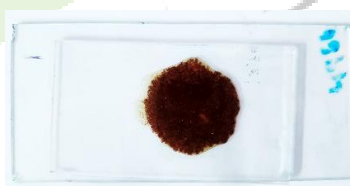
pH of 1% aqueous solution of the formulation was measured by using a calibration digital pH meter at constant.



pH Meter

3. Spreadability Test

The Spreadability was expressed in terms of time in seconds taken by two glass plates to slip off from the formulation, placed in between the plates, under certain load lesser the time taken for separation of the two glass plates better the Spreadability. Two sets of glass plates of standard dimension were taken. Then one plates of suitable dimension was taken and the formulation was placed on that plate. Then other plate was placed on the top of the formulation. Then a weigh or certain load was placed on the upper plate so that the formulation between the two plates was pressed uniformly to form a thin layer.



Spreadability Test

4. Stability studies

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

5. Skin irritation test

Mark the area (1cm) on left hand surface, then the mask was applied to the area and the time was noted. This is checked for irritancy, erema if any for an interval up to 24 hr and reported.



Skin Irritation Test

6. Viscosity Test

The measurement of viscosity of the formulated mask was determined by Brookfield viscometer with round spindle at room temperature. The mask was rotated at speed 12 rotations per minute and the corresponding dial reading was noted. Then viscosity of the prepared product was obtained by dial reading with factor given in the Brookfield viscometer catalogues.



Viscosity

VI. RESULT

Sr. no.	Parameter	F1	F2	F3
1.	Colour	Dark Brown	Brown	Brown
2.	Odour	Characteristic	Characteristic	Characteristic
3.	Texture	Hard	Smooth	Smooth
4.	pH	4.4	4.9	5.4
5.	Spreadability	11g cm/s	13g cm/s	15g cm/s
6.	Viscosity	4500mPa.s.	4700mPa.s.	5000mPa.s.
7.	Solubility	Easily soluble	Easily soluble	Easily soluble
8.	Skin irritation	No	No	No
9.	Washability	6 sec.	3 sec.	4 sec.

VII. DISCUSSION

The study is performed hair mask was evaluated by different parameters. Three formulations of hair mask were prepared. In this 3 formulation, F3 formulation gave appropriate colour, odour, texture, pH, spreadability, skin irritation and washability study to minimised side effects of herbal hair mask. According to the evaluation parameters performed F3 formulation was best formulation.

VIII. CONCLUSION

The prepared herbal hair mask is a safe, natural, and effective solution for promoting hair growth and preventing premature grey hair. It uses ingredients like aloe vera for hydration, fenugreek for strengthening hair roots, hibiscus for adding shine and volume, and brahmi for improving scalp health. These herbs are known for their traditional use and scientific support. The formulation passed for its safety and shelf life. This mask is a alternative to chemical-based hair products.

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