



A Review On Preparation And Evaluation Of Flaxseed Hairgel

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FORMULATION AND EVALUATION OF FLAXSEED HAIRGEL

ABSTRACT

Indian is known for traditional medicine. Herbs are the traditional form of Indian medicine which was developed by ancient sages whose astute observations led to the development of constitutional medicine. Herbal cosmetics are the preparations used to enhance the human appearance.

Dandruff is a skin condition with symptoms includes flaking and sometimes mild itchiness cause to scalp. There are many bacteria, fungus causing scalp infections which lead to further hair problems or skin issues. There is one of the common condition CANDIDIASIS which is typically caused on skin or mucous membrane caused by candida.

Flaxseed (*Linum sitatissimum*) is annual plant of the linaceae family with several biological properties such as an indirect effect on hair regrowth through the intermediary. Flax seed gel has several benefits on hair. The gel is rich in omega-3-fatty acids, vitamins, minerals and lignin.

Keywords: -Herbal hair gel, flaxseed, chia seed, vitamin E, & antioxidants.

INTRODUCTION

Flaxseed also known as linseed is emerging as an important functional food ingredient because of its rich contents of ALA, omega-3-fatty acid, lignans and fiber.

Flaxseed oil, fibers and flax lignans have potential health benefits such as in reduction of cardiovascular disease, atherosclerosis, diabetes, cancer, arthritis, osteoporosis, autoimmune and neurological disorder. Flax seed gel can be applied to scalp and hair as a moisturizer that can help to stimulate growth and improves the strength of existing hair. The gel formulations can provide better absorption characteristics and hence the bioavailability of drug.

Drug are semisolid systems in which a liquid phase is constrained within a three dimensional polymeric matrix in which a high degree of physical or chemical cross linking.

What is meant by Hair Gel?

Hair gel are the semisolid substance that can help in enhances hair health provides hold and define as a styling gel and nourishes hair as a conditioner.

* Flax seed:- Flaxseed (*Linum usitatissimum*) is belonging to family Linaceae. flaxseed is a blue flowering crop that produces small, flat seeds ranging in colour from golden yellow to reddish brown.

The texture of flaxseed is crisp and chewy processing a pleasant nutty taste. It has been cultivated for fiber as well as for medicinal purposes and as nutritional product. Flax seed is established importance in the world's food chain as a functional group. it may help in reduce your risk of heart disease, cancer, stroke and diabetes.

#Pharmacognosy:- Synonyms: Flax seed, Bizr

Elkettan. Common name: Jawas, Alsi.

Biological source: Linseed is dried, ripe seed of *Linum usitatissimum* Linn.

Family: Linaceae. Scientific name: *Linum usitatissimum*.

Kingdom: Plantae. Genus: *Linum*.

#Physical characteristic description:- 1) colour: Reddish brown.

2) odour: characteristics odour. 3) shape: oval and strongly flattened.

#CAUSES:-

Dandruff may have few cause, including:

- 1) Aggravated, sleek skin
- 2) Dry skin
- 3) Itching
- 4) Affectability to hair care item.

Aims & Objective:-

1) Dandruff free hair:- Flaxseed gel makes a difference to maintain a strategic distance from dandruff in hair.

2) Free from tingling:- Flaxseed gel makes a difference to halt tingling in hair.

3) Styling:- Hair gel is commonly utilized to realize and keep up a particular hair.

4) Including volume and surface:- Certain hair gel are defined to include volume and texture to the hair. they can offer assistance make a more full, more voluminous.

Benefits of flaxseed hair gel:-

1) Omega-3 fatty acids: omega 3 fatty acid provides vitamins, proteins and nutrients to hair and scalp. Omega 3 fatty acid inhibit hair follicle inflammation and help in reducing hair loss. It promotes circulation in the scalp that may effective in hair growth.

2) Antioxidant: Antioxidant produces by flaxseed is lignans. lignans may help to suppress or inhibit bacterial growth. Lignans may help in regeneration of hair and reduces hair loss.

3) B vitamins: Flaxseed is a consistent source of vitamin B. Vitamin b is a group of nutrients that are recognized for making hair stronger and healthier at a more rapid rate.

4) Fiber: Fiber is the most significant for the hair health. Fiber is made from some protein it significantly known as keratin

5)
Uses of Flaxseed :-Rich in fatty acids and antioxidants, flaxseed aids in the removal of pollutants and dead skin cells from the scalp. You can use flax seed gel as a moisturizer on your hair and scalp. Aid in promoting new hair development and strengthening existing hair.

MATERIALS AND METHODS OF BASE:

Materials Used: Flaxseeds were procured from the local organic farm, Maharashtra, India. Carbopol 934, Methyl paraben and Sodium chloride and Reagents use were of either analytical or laboratory grade.

Methodology: Formulation of hair gel base : Weight quantity of methyl paraben, were dissolved in 35 ml of water in a 250 ml beaker. Then the mixture was stirred using mechanical stirrer at high speed. Suitable quantity of carbopol 934 and sodium chloride were added slowly to the beaker containing above mixture of liquid with continuous stirring. The carbopol 943 (Gelling agent) was added slowly with continuous stirring until gel structure was obtained. In order to optimize the concentration of carbopol, five various gels containing varying concentrations of carbopol such as 0.5g, 1g , 1.5g, 2g and 2.5g (F1 to F5 respectively) were prepared. [31]

Formulation of Hair Gel base Table: (Table 1.1)

Sr. No.	Ingredients	F1	F2	F3	F4	F5
1.	Carbopol 934 (g)	0.5	1	1.5	2	2.5
2.	Methyl paraben (g)	0.07	0.07	0.07	0.07	0.07
3.	Sodium chloride (g)	QS	QS	QS	QS	QS
4.	Neutral blue	QS	QS	QS	QS	QS

QS- Quantity sufficient

The aqueous extract of flaxseed was prepared by adding flaxseeds to boiling water with constant stirring until a thick mucilage was obtained. Then the mucilage was strained using suitable sieve and stored at room temperature until further use. [34] Herbal hair gel formulations were prepared by simple gel preparation method with carbopol 934 gel base. Measured quantity of methyl paraben and weighed quantity of sodium chloride were dissolved about 35ml water in beaker. Then the mixture was stirred at high speed using mechanical stirrer. 1.5 g carbopol 934 (optimized) and add 20% aqueous extract of flaxseed to beaker and continuous stirring to obtain gel structure. The prepared herbal gel formulations were stored at room temperature until further evaluation.

Fig. 2.3 Formulation of base gel F1 to F5



PLAN OF WORK:**Organoletic Properties:**

The colour of herbal gel formulation were found to be dark white with translucent appearance which was found to be smooth on application.

Colour:

Odour:

Appearance: pH determination :

The pH of the herbal gel formulations ranged between 6.7 to 7.3 that suited the hair, indicating the compatibility of the herbal gel formulations with the hair. Homogeneity :

The developed gels were tested for homogeneity by visual inspection for appearance and presence of any lumps, flocculates or aggregates. The homogeneity was found to be good of herbal gel formulation.

Viscosity determination :

Viscosity is an important parameters for characterizing the gels as it effect the spreadability, extrudability and release of the drug. The viscosity of the formulations were found in the range of 1,50,232 to 1,52,876 cps. From the results it is clear that as the concentration of flaxseed extract increased from 5% to 20% the viscosity of the formulations also increased.

Spreadability:

Spreadability plays an important role in patient compliance and help in uniform application of gel to the hair. A good gel takes less time to spread and will have high spreadability. The spreadability of formulated gel was decreased as the concentration of gelling agent increased.

MATERIALS AND METHODS OF BASE:**Materials Used:**

Flaxseeds were procured from the local organic farm, Bengaluru, India. Carbopol 934, Methyl paraben and Sodium chloride and Reagents use were of either analytical or laboratory grade.

Methodology:

Formulation of hair gel base :

Weight quantity of methyl paraben, were dissolved in 35 ml of water in a 250 ml beaker. Then the mixture was stirred using mechanical stirrer at high speed. Suitable quantity of carbopol 934 and sodium chloride were added slowly to the beaker containing above mixture of liquid with continuous stirring. The carbopol 943

(Gelling agent) was added slowly with continuous stirring until gel structure was obtained. In order to optimize the concentration of carbopol, five various gels containing varying concentrations of carbopol such as 0.5g, 1g, 1.5g, 2g and 2.5g (F1 to F5 respectively) were prepared.

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3.	Sodium chloride(g)	QS	QS	QS	QS	QS
4.	Neutral blue	QS	QS	QS	QS	QS

Among the Five formulations, gel containing 1.5g carbopol 934 (F3) was optimized.
Use of Ingredients And it's

Table1.2 Ingredients And it's Category

Ingredients	Category
Flaxseed extract	Anti-bacterial& antifungal
Carbopol934	Gelling agent
Sodium chloride	Methyl paraben
Neutral blue	pH adjuster
	Colorant

Preparation of Herbal Hair Gel

The aqueous extract of flaxseed was prepared by adding flaxseeds to boiling water with constant stirring until a thick mucilage was obtained. Then the mucilage was strained using suitable sieve and stored at room temperature until further use.

[21]

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1.5

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RESULT AND DISCUSSION:

Flaxseeds generally have many benefits in real life. The flax seed gel has several benefits on hair. The gel is rich in omega-3 fatty acids, vitamins, minerals and Lignin which nourish the hair and promote growth. The omega-3 fatty acids in flaxseed gel is responsible for moisturizing the hair. In the addition also show activities such as antibacterial and antifungal. The physical appearance was visually checked for the appearance, colour and the odour application of prepared base gel formulations

Colour: - light blue Odour: - Distinctive

Result of test:

Sr. No.	EVALUATION PARAMETER	INFERENCE
1.	Colour	Light Blue
2.	Odour	Distinctive
3.	Appearance	Smooth
4.	pH	6.9
5.	Homogeneity	Homogeneous
6.	Viscosity	1,54,457
7.	Spreadability	22.07

CONCLUSIONS:

The formulation of Flaxseed hair gel provides a good base for treating the scalp and strengthens the hair thereby preventing the Anti-Bacterial & Anti-Fungal. There is a further for pharmacological studies. From the above results it can be concluded that the Hair gel formulation F 3 containing 1.5 gm of Carbopol 934 was suitable for topical application and it shows comparable good results. The formulation F 3 shows superior drug release than others. In carbopol gel formulations, the drug release was decrease with increase in carbopol concentration because polymer concentration increases the viscosity. Viscosity is negatively related to the release of active substance from formulations. Stability studies in all gel formulations showed that, the physical appearance, drug content, pH, rheological properties, and drug release in all gel formulations remain unchanged upon storage for one month.

Antimicrobial activity shows that formulation of gel shows higher efficacy without any dermal irritancy. Moreover the optimized formulation showed no signs of irritation or inflammation. The formulation of Flaxseed hair gel provides a good base for treating the scalp and strengthens the hair thereby preventing the hair fall

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