

A STUDY REVIEW ON PREPARATION AND EVALUATION OF POLY HERBAL HAIR OIL

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ABSTRACT

Because they have fewer side effects and a superior safety and security profile, herbal cosmetics are increasingly often utilized by the general public. The goal of the current endeavor was to create herbal oil for general use (application in hairs). Hair loss is a relatively common occurrence that should worry everyone, young or old. Because of their potent benefits and comparably less or absent adverse effects as compared to synthetic medications, herbal formulations have long drawn significant interest. The negative effects of synthetic medications include localized itchiness, burning, and irritation. Pharmacognosy is the scientific study of the physical, chemical, biological, and structural characteristics of unprocessed pharmaceuticals as well as their history of production, collection, market preparation, and storage. In order to evaluate the formulation of the herbal oil, many parameters were measured, including viscosity, saponification value, pH, etc. They thus utilize a variety of herbal-infused beauty products to seem lovely and youthful. Because they have fewer side effects and a superior safety and security profile, herbal cosmetics are now frequently utilized by the general public. The initial test for cutaneous irritability is performed. Therefore, polyherbal hair oil is said to promote hair growth, minimize hair loss, and offer dandruff protection.

Keywords: Oil, Herbal, Hair, Preparation and Evolution.

INTRODUCTION

The hair care products called hair oils are used to cure and prevent baldness as well as other conditions. Additionally, they encourage the luscious development of hair. As a hair tonic, hair oil containing herbal medications is utilized¹. Hair tonics and hair grooming aids are the two primary categories for hair care products. These are essentially oil-based medicinal plant extracts. The majority of nations today have regulations that regulate the production, labeling, selling, and other aspects of cosmetics so as to avoid the use of dangerous cosmetics. The market for herbal

cosmetics is expanding and they are a priceless gift from nature². Herbal cosmetics come in a variety of forms to suit your beauty regimen. Herbs are a very safe addition to cosmetics for our skin. One of the most well-known hair treatments is herbal hair oil. Herbal hair oils not only hydrate the scalp, but they help repair dry scalp and hair. The main issues with hair include hair loss, dandruff, split ends, and gray hair. A rising number of men and women are dealing with the painful issue of hair loss³. Alopecia, or hair loss, is a prevalent patient concern. A serious cause of emotional and physical anguish. We utilize several hair care products to address these issues. Numerous plants and herbal remedies have

been used in the ancient Indian medical system to promote hair development and enhance hair quality. The majority of nations today have regulations that regulate the production, labeling, selling, and other aspects of cosmetics so as to avoid the use of dangerous cosmetics⁴. The preparations for hair oils are used to treat various forms of dandruff, hair loss, split ends, etc. The main purpose of hair oil preparations is to calm the scalp and promote luscious hair growth in both men and women. The first line of protection against the sun's UV radiation is the hair on our heads. In order to change the texture of hair, several formulas are utilized as hair care products. Due of their less side effects and readily accessible components, herbal cosmetics are widely utilized. Herbs are now a common ingredient in hair care products, and they are considered as superior than synthetic ones. The usage of hair oils has grown over the past few years as a component of the hair profession plan because of their advantages in treating hair problems. Natural and synthetic substances are both used in the formulation of hair oils. The hair care products that are manufactured with chemicals or artificial materials are known as synthetic hair oils. They assist to decrease frizz while also supplying gloss and superb conditioning. As a result, it begins to play a significant role globally. Oil is applied to the hair and massaged into the scalp during hair oiling in order to boost moisture, luster, and shine as well as to improve blood flow. In addition to providing the vitamins and minerals that are lost during regular washing, hair oiling may soften the hair⁵. It functions by strengthening fragile hair and avoiding split ends. It can be used to speed up hair development in those with sluggish hair growth. Due to the growing interest of mankind in using herbal remedies, which are more effective with no or few side effects, readily available components, etc., herbal cosmetics are in great demand⁶. Herbs are now a common addition to hair care products, and they are widely known in comparison to synthetic ones. Herbal hair oils are highly popular and are applied to several hair conditions. They encourage hair development, enhance hair attractiveness, and stop hair loss. Hair oils not only encourage hair development but also give the scalp the required moisture for healthy hair. (Table 1: Drug and excipient profile)

MATERIALS AND METHODS

The procedures for making herbal hair tonics a hair tonic is created when coconut oil is combined with other medications that have medical properties. It is prepared using the procedures listed below⁷.

1). Direct boiling process

The dried medication was weighed and wrapped in a muslin cloth using the cloth technique. After continual boiling and stirring, this fabric was hung in a foundation of coconut oil, after which the oil was filtered.

2). Paste Method

Using a very small quantity of water, fresh fruit, pulp, or the required plant component was made into a paste and preserved overnight. Following this, the wet medication was combined with a base of coconut oil and heated while being continuously stirred, resulting in a full extraction of the drug into the oil. A cotton cloth was then used to filter the oil.

3). Direct Boiling Method

The raw medications were powdered, weighed, and then immediately cooked in coconut oil while being constantly stirred and heated until the pharmaceuticals had extracted fully in the oil base.

Collection of plant part

Various plant materials, including Neem, Amla, Shankpushpi, Brahmi, Bhringaraj, Jatamansi, Nirgundi, Shatavari, Gammhari, and Pudina, were gathered for the preparation of herbal hair oil from the Medicinal Plant Garden of the Ujjain Institute of Pharmaceutical Sciences in Ujjain, M.P., India, and were duly authenticated in the Department of Pharmacognosy.

Preparation of herbal hair oil



Fig. 1: Preparation of polyherbal hair oil

Example-1: Table 1 lists the many components that go into the creation of herbal oil. All the fresh and dried herbs, including Amla, Nirgundi, Bringaraj, Jatamansi, Neem, Aprajita, Shankpusphi, Brahmi, Kapur, and Pudina, were precisely weighed before being ground in the mixture and blended with 63% til oil. After 15 minutes of boiling, the material above was filtered through muslin fabric. Coconut oil was added to the filtrate to make up the volume (100 mL). The oil was finally given a little bit of color and flavoring ingredient, and it was put in an amber-colored bottle. (**Table 2: Ingredients used in formulation of herbal hair oil**)

Example-2: All raw medication ingredients are gathered and shade-dried. Active elements will remain after drying in the shade. So, natural drying in the shade is preferred over artificial drying. Using a blender, the dry, crude medicines were turned into a coarse powder. After passing through mesh number 80, all of these coarsely powdered medications are combined to create a homogenous mixture. Aloe Vera pulp and coconut oil have now been included. These dry granules were all carefully combined. Now, the mixture was cooked for 15 minutes and then filtered through muslin fabric. Coconut oil was added to the filtrate to enhance volume. Prepare polyherbal hair oil last. These were added to the amber-colored bottle. (**Table 3: Formula for herbal oil**)

Evaluation of polyherbal hair oil preparation⁸⁻¹¹

Specific gravity

A bottle with an empty specific gravity was first weighed. The identical bottle with the same specific gravity was then refilled with water and weighed. A hair tonic replacement was added afterwards, and the specific gravity bottle was weighed once again. Weights are recorded, and the calculation of the hair tonic's specific gravity follows.

Weight of empty specific gravity bottle = w_1 gms.

Weight of specific gravity bottle with water = w_2 gms.

Weight of specific gravity bottle with hair tonic = w_3 gms.

Specific gravity bottle of water = 0.9961 g/cm³.

Specific gravity of hair tonic was calculated as $\rho = \frac{w_3 - w_1}{w_2 - w_1} \times \rho$

pH

Digital pH meters were used to measure the pH. The pH meter bulb was dipped into a beaker containing 20 ml of herbal hair tonic. The pH values that were obtained are recorded.

Viscosity

It is a measure of a liquid's resistance to flowing; the higher the viscosity, the greater the barrier to flowing. Ostwald's viscometer was used to calculate the viscosity.

Acid value

In 5ml of an equal volume combination of ethanol and ether that had been previously neutralized with 0.1M KOH, one gram of the material was properly dissolved. If the sample was not thoroughly dissolved, a reflux condenser was attached, and the solution was gently warmed while being stirred often until it was. After 30 minutes of shaking, 1 ml of phenolphthalein solution was added, and the solution was titrated with 0.1 M KOH until it remained slightly pink. This equation was used to get the acid value.

Acid value = $5.61 \times n/w$

n= No. of ml of 0.1M KOH

w= Weight of substance

Saponification value

Weighed and put into a 25ml conical flask were 2ml of herbal hair oil. KOH solution in an alcoholic volume of 25 ml was added. It was cooked over a water bath for 30 minutes while the contents of the flask were constantly mixed. Cooled liquid was mixed with phenolphthalein, which was then titrated against 0.5M HCL. Saponification values were computed by performing a blank solution.

Saponification Value = $56.1(B-S) N/W$

Where B= Volume in mL of standard Hydrochloric acid required for the blank.

S= Volume in mL of standard Hydrochloric Acid

Primary skin irritation test

A little quantity of each of the produced formulations was applied to the test site to conduct a basic skin irritation test on our hand. For five to six hours, erythema and edema at the test site were monitored.

Antidandruff activity evaluation (anti-microbial activity) cup plate method

The zone inhibition method was used to test the polyherbal hair oil's diffusin-dependent antibacterial activity. For two days, the plate was incubated at 37°C. A zone of inhibition measurement was made.

Antioxidant activity

DPPH radical scavenging test

One milliliter of oil solutions—20, 30, 40, 50, and 60 g/ml in acetone was mixed with one milliliter of DPPH solution (0.2 Mm in acetone). The reaction took 30 minutes to complete at room temperature, and the absorbance of was

measured at 517 nm. The oil's antioxidant capacity is assessed using ascorbic acid as the reference.

Organoleptic Property

Color

Detected by naked eyes

Sensitivity

Applied to the skin and exposed to the sunlight for 5 minutes to check for any irritation over skin

Grittiness

Rubbed to the skin and observed

Sedimentation

Keep the whole preparation aside for overnight and check for sedimentation

Phytochemical screening

Tests to identify polybatannins, saponins, flavonoids, steroids, alkaloids, carbohydrates, proteins, anthroquinonine, oil and resin, terpenoids and glycosides etc.

Table 1: Drug and excipient profile

Sr. No	Name of Drug	Uses
1	Triphala	Hair growth, fights against heart disease, reduces blood sugar, high in digestive fiber, boosts immunity etc.
2	Nirgudi	Flavoring agent, anti-asthma, good muscle relaxant etc
3	Licorice	Good for the scalp, effective hair treatment
4	Jatamansi	Growth of hair
5	Aloe Vera	Antimicrobial agent, scalp reducing, hair conditioner
6	Bhringraj	It activates the hair follicles, resulting in increase in hair growth
7	Lavender oil	It helps promote hair growth, it has a calming effect and divine fragrance
8	Shatavari	Hair growth, it helps to produce breast milk in new mothers
9	Ashwagandha	Hair growth, anti-cancer, reduce blood sugar level
10	Dill oil	It helps in treats premature graying of hair, Rheumatoid Arthritis, lower blood pressure
11	Coconut oil	Vehicle, relieve skin irritation
12	Shankpuspi	Nervine tonic, improves memory intellect, brain tonic
13	Pudina	Flavoring agent etc

Table 2: Ingredients used in formulation of Herbal hair oil

S.No	Ingredients	Quantity (%)
1	Amla	85
2	Nirgundi	2
3	Bringaraj	10
4	Jatamansi	3
5	Neem	2.5
6	Gambhari	3
7	Aprajita	2
8	Shatavari	2.5
9	Shankpushpi	3.5
10	Brahmi	7
11	Kapur	1
12	Pudina	1
13	Til oil	63
14	Coconut oil	37
15	Rang	5
16	Flavoring agent	2

Table 3: Formula for Herbal oil

Sr.no	Ingredients	F ₁ (2%)	F ₂ (4%)	F ₃ (8%)
1	Hibiscus rosasinesis	6 gm	12 gm	16 gm
2	Curry leaf	6 gm	12 gm	16 gm
3	Aloe Vera leaf	6 gm	12 gm	16 gm
4	Amla	6 mg	12 mg	16 mg
5	Shikekai	6 mg	12 mg	16 mg
6	Coconut oil	50 ml	50 ml	50 ml

CONCLUSION

The various constituents of the herbal extracts such as minerals and amino acids may cause for the significant hair growth activity. All these dried and powdered drugs mixed with coconut oil in sufficient quantities will give a permanent

solution for hair fall and proper hair growth. This hair tonic also effectively used in treating headaches because of cooling effects and thus relieves from stress and strain conditions. It has shown good hair growth results without any allergic or side effects as it is completely constituted with naturally occurring crude

drugs. The use of different benefits with good combination will give the great effect for hair.

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