

Formulation and Evaluation of Herbal hair Oil

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Abstract: Pharmacognosy is defined as the scientific study of the structural physical, chemical and biological characters of crude drugs along with their history cultivation, collection, preparation for the market and preservation. The word cosmetics is defined as that article which is rubbed, poured, sprinkled or applicable to any part of material body for the aim of cleansing, beautifying the appearance is called as cosmetics. Herbal cosmetics is one amongst the foremost potent and effective area of cosmetic technology Herbal cosmetics are now-a-days widely utilized by the common people thanks to concept of fewer side effects and with a better safety and security profile. The purpose of using cosmetic preparations is to attain worship and sensual enjoyment. The present research work was aimed to formulate herbal oil for application in hairs using various plant materials were collected viz., Amla, Hibiscus, aloe Vera, Jasmin, fenugreek, Onion, Curry leaves, black cumin, Almond oil, Til oil, Coconut oil etc. The formulated herbal oil was evaluated and various parameters such as Acid value viscosity, saponification value, pH, Skin irritation etc. were determined and are reported in this paper.

Keywords: Cosmetics, Herbs, Herbal hair oil, Evaluation.

I. INTRODUCTION

Pharmacognosy is defined as the scientific study of the structural physical, chemical and biological characters of crude drugs along with their history cultivation, collection, preparation for the market and preservation. The word "Pharmacognosy" was coined by German scientist C. A. Seydler in 1815 in his work entitled *Analecta Pharmacognostica*. The name Pharmacognosy is derived from two Greek words viz. Pharmakon (a drug) and Gignosco (to acquire the knowledge of). It deals with the naturally occurring substances which have medicinal activities. Crude drugs are natural products obtained from plant sources, animal sources or of mineral origin which are used in natural called "Crude" form either single or in combination to make compound formulations. Crude drugs are referred to the natural products that has not been improved in condition or advanced in value by any treatment or process beyond that which is necessary for its packing and prevention from deterioration.

The term Ayurveda is composed of two words; ayur meaning life, and Veda meaning science. Thus, Ayurveda is the "science of life". In Ayurvedic medicine, herbs are used as an integral part of health care system. The main objective of Ayurveda is maintenance and promotion of positive health and cure of disease through medicine, dietary restrictions and regulated life style. Herbal drugs obtained from plants are believed to be much safe in the treatment of various diseases.

The word cosmetic was derived from the Greek word "kosmtikos" meaning having the power, arrange, skill in decorating. Cosmetic is defined as "intended to be applied to the human body for cleansing, beautifying, promoting attractiveness, or altering the appearance without affecting the body's structure or functions". Cosmetics are substances used to enhance the appearance or odor of the human body. Cosmetics include skin-care creams, lotions, powders, perfumes, lipsticks, fingernail and toe nail polish, eye and facial makeup, permanent waves, colored contact lenses, hair color, hair sprays and gels, deodorants, baby products, bath oils, bubble baths, bath salts, butters and many other types of products. A subset of cosmetics is called "make-up," which refers primarily to colored products intended to alter the user's appearance

Hair is a protein filament that grows from follicles found within the dermis. Hair is one in every of the defining characteristics of mammals. Most commonest interest in hair is targeted on hair growth, hair types and hair care, but hair is additionally a awafullimportant biomaterial primarily composed of protein, notably alpha keratin. The

prominent problems arises with in cosmetics are Dandruff, hair loss, dry hair, spit ends, frizzy hair, dull hair, heat damaged hair, color damaged hair, grey hair, etc. To beat these problems' there are many cosmetics available in markets, like hair oils, hair shampoos, hair conditioners, hair serums, hairs gels, hair mask, hair dyes. Hair oils are the cosmetics products which are applied on hair which promotes the luxurious hair growth, treatment of baldness, aggression of hair. Toiletry containing herbal drugs are used as toiletries. Hair care products are categorized into two main category, hair tonics and hair grooming aids. These are basically the extracts of medicinal plants in an oil base. Hair complexion, colour and style play an important role in people's physical appearance. Hair care preparations are applied topically to the scalp and hair.

The following are the various hair care preparations

1. **Detergents:** Eg: soap nut, shikekai, reetha.
2. **Conditioners:** Eg: henna, Amla, hibiscus, rosemary, tea.
3. **Nourishers:** Eg: Brahmi, bring raj, eggs, coconut oil, sesame oil.
4. **Hair colorants:** Eg: henna.
5. **Hair growth promoters:** Eg: Brahmi, Amla, hibiscus, coconut oil, sesame oil.
6. **Anti dandruff:** Eg: soap nut, shikekai, lemon, thyme, aloe vera.

1.1 Aim

To formulate and evaluate the Polyherbal hair oil.

1.2 Objectives

- To promote the hair growth and smoothness of the hair.
- To supplement the hair with vital nutrients such as vitamins, and minerals.
- To prevent the dandruff, spit ends, and dull hair.
- To provide an alternative source from hazardous chemicals.

II. MATERIAL AND METHODS

Collection of Plant Part

For the preparation of herbal hair oil various plant materials were collected viz., Alma, Hibiscus, Aloe Vera, Curry Leaves, Jasmine, Black Cumin, Til Oil, Almond Oil, Fenugreek, Onion and Coconut oil etc.

2.1 Amla



Table 1: Taxonomical Classification of Amla.

Rank	Scientific name & Common Name
Kingdom	Plantae
Division	Dried fruit
Family	Euphorbiaceae
Genus	Phyllanthus
Order	Malpighiales

Species	P. Emblica
Biological name	PhyllanthusEmblica
Other names	Indian gooseberry, Bhumi amla, Bhumyamalki,
Use	<ul style="list-style-type: none"> ❖ Reduce premature pigment loss from hair, or greying. ❖ Stimulate hair growth. ❖ Reduce hair loss.

2.2 Hibiscus



Table 2: Taxonomical Classification of Hibiscus.

Rank	Scientific name & Common Name
Kingdom	Plantae
Family	Malvaceae
Subfamily	Malvoideae
Order	Malvales
Species	H. Rosa-sinensis
Botanical name	Hibiscus rosa-sinensis
Other names	Hibiscus arnottii Griff. Ex Mast. Hibiscus boryanus DC. Hibiscus cooperi auct.
Use	<ul style="list-style-type: none"> ❖ Improves hair growth. ❖ Cures dandruff and itchiness. ❖ Prevents premature greying.

2.3 Aloe Vera



Table 3: Taxonomical Classification of Aloe Vera.

Rank	Scientific name & Common Name
Kingdom	Plantae
Family	Liliaceae
Genus	Aloe
Order	Asparagales
Species	A.vera
Biological name	Aloe vera (M.)
Other names	India aloe, Small aloe, Ghritkumari
Use	❖ Promoting healthy cell growth and shiny hair ❖ Hair growth

2.4 Curry Leaves



Table 4: Taxonomical Classification of Curry leaves

Rank	Scientific name & Common Name
Kingdom	Plantae
Clade	Tracheophytes
Family	Rutaceae
Genus	Murraya
Order	sapindales
Species	M. Koenigii
Biological name	Murraya Koenigii
Other names	karivepallai, karivembu, karivepaku, kadipatta
Use	❖ Help moisturize the scalp and remove the dead hair follicles. ❖ Preventing hair loss and thinning of hair.

2.5 Jasmine:



Table 5: Taxonomical Classification of Jasmine.

Rank	Scientific name & Common Name
Kingdom	Plantae
Clade	Tracheophytes
Family	Oleaceae
Genus	Jasminum
Order	Lamiales
Species	Jasminum azoricum
Biological name	Jasminum officinale
Other names	Jasminum
Use	<ul style="list-style-type: none"> ❖ Moisturizing properties to stop prevent hair breakage. ❖ Maintains your natural moisture and elasticity.

2.6 Black Cumin



Table 6: Taxonomical Classification of Black Cumin.

Rank	Scientific name & Common Name
Kingdom	Plantae
Clade	tracheophytes
Family	Ranunculaceae
Genus	<i>Nigella</i>
Order	Ranunculales
Species	<i>N. sativa</i>
Biological name	<i>Nigella sativa</i> L.
Other names	<i>Nigella cretica</i> Mill. <i>Nigella indica</i> Roxb. <i>Nigella truncata</i> Viv.
Use	<ul style="list-style-type: none"> ❖ Hair growth and strengthen hair follicles. ❖ Improve the overall health of your hair.

2.7 Fenugreek



Table 7: Taxonomical Classification of Fenugreek.

Rank	Scientific name & Common Name
Kingdom	Plantae
Family	Fabaceae
Subfamily	Faboideae
Genus	Trigonella
Order	Fabales
Species	T.Foenum-graecum
Biological name	Trigonella foenum-graecum L.
Other names	Herbaceous plant. Genus Trigonella. Fenugreek seed. Trigonella.
Use	<ul style="list-style-type: none"> ❖ Revives damaged hair. ❖ Fights dandruff. ❖ Controls scalp inflammation. ❖ Adds shine and soft texture. ❖ Prevents premature grey hair.

2.8 Onion



Table 8: Taxonomical Classification of Onion.

Rank	Scientific name & Common Name
Kingdom	Plantae
Family	Amaryllidaceae
Subfamily	Allioideae
Genus	Allium
Clade	Angiosperms
Species	A.cepa
Biological name	Allium cepa
Other names	Allium angolense Baker Allium aobanum Araki Allium ascalonicum auct. Allium ascalonicum var. condensum Millán
Use	❖ Combats Hair Loss. ❖ No Split-Ends. ❖ Cures Baldness. ... ❖ Say No To Dandruff & Scalp Irritations.. ❖ Improves Hair Texture and Health. ❖ Adds Shine.

2.9 Coconut oil



Table 9: Taxonomical Classification of Coconut Oil.

Rank	Scientific name & Common Name
Kingdom	Plantae
Clade	Tracheophytes
Family	Arecaceae
Genus	Cocos L.
Order	Arecales
Species	C.nucifera
Biological name	Cocos nucifera
Other names	fossil oil. Grease. Lubricating oil.

	Calamus oil. Chinese wood oil.
Use	❖ Moisturizers dry hairs. ❖ To prevent dandruff.

2.10 Til Oil



Table 10: Taxonomical Classification of Til oil

Rank	Scientific name & Common Name
Kingdom	Plantae
Clade	Angiosperms
Family	pedaliaceae
Genus	Sesamum
Order	Lamiales
Species	S.indicum
Biological name	Sesamum indicum
Other names	fossil oil. Grease. Lubricating oil. Chinese wood oil.
Use	❖ Prevent dandruff. ❖ Prevent hair falls. ❖ Promote hair growth.

2.11 Almond oil



Table 11: Taxonomical Classification of Almond oil

Rank	Scientific name & Common Name
Kingdom	Plantae
Clade	Trachephytes
Family	Rosacea
Genus	Purnus
Order	Rosales
Species	P.amygdalus
Biological name	Purnus amygdalus
Other names	<u>Almond tree</u> <u>Jordan almond</u> <u>Prunus dulcis</u> <u>Sweet almond</u>
Use	❖ Treat hair loss and strengthens the hairs. ❖ Decreases hair thinning. ❖ Hairfall smoother to the touch.

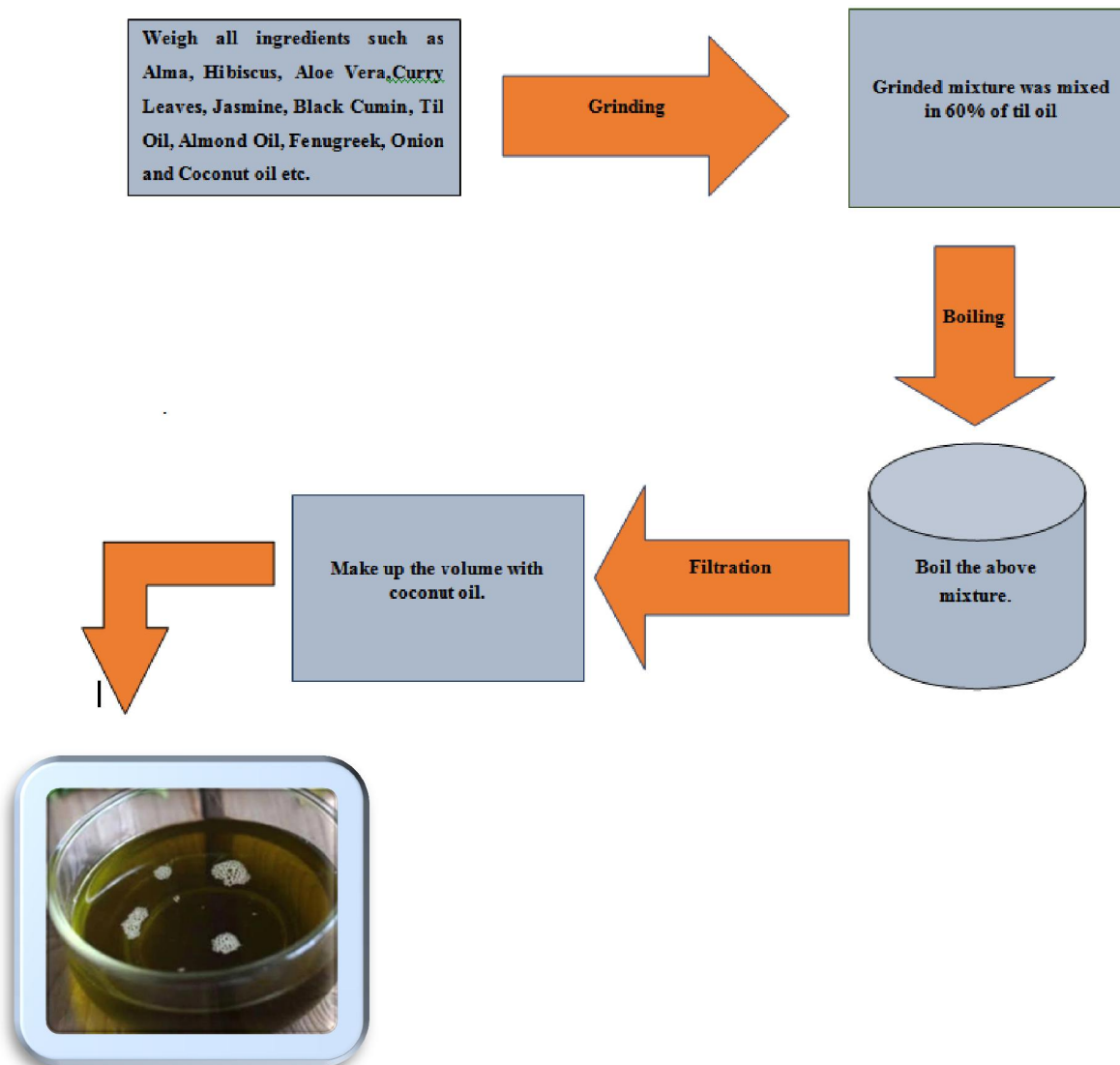
Formulation of Herbal Hair Oil

The various ingredients used in the formulation of herbal oil are presented inbelow

Table 12: Formulation of Hair oil

Sr. no.	Ingredients	Quantity (%)
1.	Amla	20
2.	Hibiscus	3
3.	Aloe Vera	2.5
4.	Black Cumin	5
5.	Curry leaves	5
6.	Onion	10
7.	Jasmine	1
8.	Fenugreek	3.5
9.	Almond Oil	20
10.	Til oil	10
11.	Coconut Oil	Q.S

Process for Formulation



III. EVALUATION OF HAIR OIL

The formulated herbal oil was subjected to physical and biological evaluation.

- Acid Value:** Preparation of 0.1 molar solution: Weighed 0.56 g KOH pellets and dissolved in 100 ml of distilled water and stirred Continuously. The prepared 0.1 molar KOH solution was filled in the burette. Preparation of sample: Measured 10 ml oil and dissolved in 25 ml of ethanol and 25 ml of ether mixture and shacked. Added 1 ml of phenolphthalein solution and titrated with 0.1 molar KOH solutions.
- Saponification Value:** Accurately weighed 1 ml of oil into a 250 ml of conical flask and 10 ml of ethanol: ether mixture (2: 1) was added. To this flask 25 ml of 0.5 N alcoholic KOH was. Kept the flask for 30 min. And the flask 0.5 N HCL using phenolphthalein indicator. Similarly the blank titration was performed without taking oil (sample). Amount of KOH in mg used was calculated.
- PH:** The PH of herbal oil was determined using PHmeter. The most accurate common means of measuring PH is through a lab device called a probe and meter, a PH meter. The probe consists of a glass electrode through which a small voltage is passed. The meter, a voltmeter, measures the electronic impedance in the glass electrode and displays PHunits instead of volts. A PH meter typically has to be calibrated before each use with

two standard liquid solutions of known pH. Measurement is made by submerging the probe in the liquid until a reading is registered by the meter

- **Viscosity:** The viscosity of herbal oil was determined using **Ostwald's viscometer**. Take the specific gravity bottle, rinsed it with distilled water, dry it in oven for 15 minutes, cool, closed it with cap and weigh it (a). Now fill the same specific gravity bottle with the sample and closed it with cap and again weigh it (b). Determine the weight of sample per millilitre by subtracting the weight (b-a).
- **Sensitivity Test:** The prepared herbal oil was applied on 1 cm skin of hand and exposed to sunlight for 4-5 min.

IV. RESULT AND CONCLUSION

Overall, the formulated herbal oil provides many nourishing value to hair such as vitamins, minerals, and essential oils. The finished product is within the limits. In conclusion, oil is beneficial to prevent hair from damage, loss caused by pollution and dull hair and Promote hair growth. And provide an alternative source from hazardous chemicals.

Table 13: Role of herbs in herbal hair oil

Sr. No	Ingredients	Uses
1	Amla	Hair Growth
2	Hibiscus	Anti- Dandruff
3	Aloe Vera	Antimicrobial
4	Curry leaves	Anti hair falls
5	Jasmine	Flavouring Agent
6	Black Cumin	Smooth Hair
7	Fenugreek	Hair growth
8	Onion	Hair strengthening
9	Til Oil	Vehicle
10	Almond oil	Vehicle
11	Coconut oil	Vehicle

Table 14: Evaluation of herbal hair oil

Sr.No.	Parameters	Result
1.	Acid value	3.3+-0.4
2.	Saponification value	240.99+-0.6
3.	PH	6.82+-0.02
4.	Viscosity	0.95+-0.5
5.	Sensitivity test	No irritation

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CONFLICT OF INTEREST

The author declared no conflict of interest.

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