

Formulation and Evaluation of Antidandruff Hair Oil

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Abstract: Herbal hair oil is the formulation derived from ingredients of natural origin including the base, which promotes hair growth activity. An attempt was made to formulate a herbal product in which the appearance of hair oil i.e. colour and fragrance etc. is provided by the formulation itself and is devoid of any synthetic ingredient. Various ingredients were incorporated on the basis of their traditional use and their availability in commercially marketed herbal formulation. The aqueous extracts were prepared and incorporated into oil base of natural origin. The experimental paradigms used were primary skin irritation test and hair growth activity including number of hairs, length of hair, hair growth initiation as well as hair growth completion time. Significant increase in hair number and length were observed. The time required for complete hair growth was also considerably reduced. The result of treatment with formulated herbal hair oil was comparable with that of minoxidil, which was taken as a standard.

Herbal formulations always have lesser or no side effects comparatively with synthetic. The aim of present study involves preparation of herbal hair oil using the herbal ingredients like., Amla, Raw garlic, Curry leaves, Methi. Based on the above observations, mixture of crude drugs was prepared in the form of herbal hair oil by boiling method. We have used five formulas using different herbal drugs and all the formulation are showing anti-hair fall property with some of other beneficial activities like anti-dandruff activity, improves blood circulation to the scalp and roots, reduce hair pigmentation, anti-fungal activity, reducing the whitening of the hair. The formulated herbal oil was evaluated by using various parameters such as Organoleptic properties, specific gravity, stability, viscosity, Acid value, pH etc. and the value obtained from it was found to be similar to that of the standard values like there is no sedimentation, no grittiness and shows satisfying organoleptic properties and the results were determined and are reported in this work. The coconut oil was used as base oil which make an effective anti-dandruff formulation with smooth and shiny hairs, also provide conditioning and promotes hair growth. The formulated shampoo was subjected to evaluation parameters like visual inspection, pH, viscosity, antidandruff test and stability studies, etc. The major goal of the present study is to formulate and evaluate anti-dandruff hair oil for treating various hair issues. The coconut oil was used as base oil which make an effective anti-dandruff formulation with smooth and shiny hairs, also provide conditioning and promotes hair growth. The formulated shampoo was subjected to evaluation parameters like visual inspection, pH, viscosity, antidandruff test and stability studies, etc. The major goal of the present study is to formulate and evaluate anti-dandruff hair oil for treating various hair issues.

Keywords: Hair oil, herbal formulation

I. INTRODUCTION

Hair plays an important role in human life. In India the traditional process is the preparation of hair oils put together with various hair growth promoting drugs. Indian women are known for their long, shiny and healthy hair, so it is not surprising that hair care features prominently in their self-care rituals. The Charaka Samhitha (the definitive book on Ayurvedic medicine) describes the importance of oiling the hair and scalp to maintain good hair health and prevent hair loss. The daily hair oiling was recommended with appropriate herbs filled to suit others constituents and this practice also continuous until today. The hair oil preparations are included to treat various dandruff, hair fall process, split ends etc. The hair oil preparations are mainly used to cool the scalp for luxurious growth of hair in both men and women.

Various types of oils like coconut oil, almond oil, castor oil, onion oil are applied to scalp in admixture with suitable herbal drugs. Among these oils coconut oil is the foremost worthy oil base because it get absorbed into the hair strands better than other oils and also economical compared to other oils. Hence coconut oil added with herbal drugs is mentioned method for best hair growth.

Hair on our head is the first line defense against the sun's UV rays. Hair care products are nothing but it is those formulations which are used for modifying the texture of hair. Herbal cosmetic are highly used due to their less adverse effects and the ingredients used are easily available.

Now a days hair care cosmetic are added with herbs and they are well recognized compared with synthetic ones. These years, apart of the hair caroty enthuse of hair oils has been increasing and it is due to their benefits in addressing the hair concerns. Hair oils are formulated with both synthetic and natural ingredients. Synthetic hair oils are those hair care products which are made by chemical or artificial substances. They are used to provide shine and excellent conditioning and they also helps to reduce frizz. Natural hair oils are the hair care products which are rich in Vitamins, Mineral sand Fatty acids which are the vital elements in the human cells and the see elements are also present in the skin and hair of our body. Hence, while we are applying the natural hair oils, we are allowing these vital nutrients to absorb well into the scalp and hair thus it helps for a healthy regeneration of the scalp and a strong and healthy hair growth.

Apart from hydrating your scalp and stimulating hair growth, hair oiling also strengthens the

Hair so provides important minerals and nutrients for the scalp. This will prevent external damage and strengthens the hair as well.

The primary purpose of oiling is a prerequisite to condition the scalp. An oilmassage also increases the hair growth by stimulating the hair follicles and improving blood circulation to the scalp. Herbal formulation is completely made up of natural sources derived from the plants. It is applied to the hair as a cosmetic, conditioner, styling aid, restorative and also as a tonic.

There are different types of hair oils and all these are used for different purposes such as hair growth, health, dryness, scalp, fix damaging hair also used for dandruff, split ends and greying of hair etc.

The various forms of hair oils such as natural hair oils which includes traditional hair oils like coconut, castor, almond oil etc. It could be introduced in a hair care routine in many different ways. Hence it gains a important role all over the world. Hair oiling is the practice of pouring oil onto the hair and massaging it into the scalp to increase moisture, luster, shine and also increase the blood circulation. The hair oiling may soften the hair and also provides the vitamins and minerals that get stripped from frequent washing.

Hair being protective and essential part of body, it is very crucial to treat problems related to them. Many young people suffer from hair related problem like hair loss, dandruff and many treatments are available in market. Hair loss occurs due to excess exposure of hair to chemicals, dandruff, disease state of scalp as well as decrease blood flow. There are two types of dandruff:

Dry dandruff- yeast like fungus causes this dry type of dandruff, ii) Oily dandruff- it is due to excess formation of sebum on scalp of hair. Hence to stimulate hair growth and for anti-dandruff activity it is important to develop novel formulation. Hair care products are used to maintain hair strength and make them healthy. Plant and herbal material-based products act as very important tool to treat human disease and also used as cosmetics. Herbal hair oil is formulation obtained from natural sources and using oil base to treat hair related problem. Primary function is to keep hair healthy and good looking. Herbal hair oil is known for improving hair health and scalp health, also used to treat dry scalp and dry hair problems. Herbal hair oil act as good hair growth promoter by providing important nutrient material to hair and scalp for good hair growth. Due to stress and tension hair are becoming old early and gets easily detached from scalp often observed in adult after age 20, nowadays it has become major hair related problem, so putting light on to this issue herbal hair oil is designed and formulated. The main problem associated to hair are dandruff, dry hair, loss of hair is overcome with subsequent use of herbal hair oil

Ideal properties of hair oil

- Natural goodness of hair
- Revitalizes hair tissue

- Relaxing massage for healthy scalp
- Fights hair fall
- Tames frizz

Functions of hair oil

- Promote the hair growth
- Fights hair fall
- Fights premature graying
- Prevent the split ends
- Nourishes the scalp
- Repairs the damaged hairs

Aim

Formulation and evaluation of anti-dandruff hair oil

Objectives

1. To prepare and formulate herbal hair oil
2. Physiochemical evaluation of prepared hair oil
3. Invitro Antimicrobial study of prepared hair oil

Plan of work:

1. Collection of plant material
2. Processing of crude drug
3. Extraction of plant material
 - A. Selection of extraction method
 - B. Selection of solvent
4. Formulation and preparation of hair oil
5. Physiochemical evaluation of prepared hair oil
 - A. PH
 - B. Physical appearance
 - C. Odor
 - D. Color
 - E. Specific gravity
 - F. Viscosity
 - G. Acid value
 - H. Saponification value
 - I. Irritation test
6. Interpretation of data and its presentation

Plants profile used in the preparation of herbal oil

Amla



Synonyms: Embolic, Indian Gooseberry, Amla

Biological source: Dried as well as fresh fruits of the plant Embolic Officinalis Gareth

Family: Euphorbiaceous

Chemical constituents: Vitamin C 0.5% fat phalloidin and 5% tannins. Minerals matters like phosphorous, Iron and Calcium Pectin.

Uses:

It is a main ingredient of herbal shampoo because of its hair growing ability due to the presence of Phyto nutrients vitamins and minerals which help in increasing the scalp circulating

Vitamin C present in Amla produces collagen protein which stimulates hair growth both length and volume wise

Methi



Synonyms: Methi, Methika, Fenugreek

Biological source: Dried Ripe Seeds of Trigonella Foenumgraecum

Family: leguminous

Chemical constituents: (i) Saponins Glycosides: Diosgenin Trigogenin Yamogenin Gitogenin (ii) Coumarin Derivatives: TrigocoumarinTrigofo in (iii)Alkaloids: Trigonelline

Uses :

- Lecithin present in acts as an emollient and conditions scalp and hair deeply.
- Source of protein and amino acids which help to repair the hair shaft damaged due to dehydration, heat styling, chemicals, sun damage and colour treatments.
- Natural saponins present in fenugreek have antifungal and antibacterial

Curry Leaves



Synonyms : Mitha Neem in Hindi, and Karuveppilei in Tamil Nadu and Surabhi Nimba in Sanskrit.

Biological source: Murray konini (L.) Spring

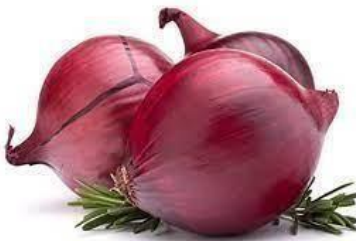
Family: Rosaceae

Chemical constituents: Oxalic acid, vitamin A, konini, bicyclomahanimbicine, cyclomahanimbine, Marinating, coumarone, clonidine and pypayafolinecarbazole.

Uses :

1. Curry leaves are rich in plant compounds which are powerful antioxidants. These compounds keep us healthy and protect us from numerous diseases.
2. They protect us from oxidative damage, preventing diseases of the nervous system, cardiovascular system, kidneys etc

Onion



Synonyms : Japanese leek, Egyptian onion, Allium ascalonicum, Eschalot, Alliaceous plant, Allium fistulosum, Top onion, isothiocyanate.

Biological source: Allium sepia

Family: Amaryllidaceae

Chemical constituents: Allicin, quercetin, fisetin, other sulphureous compounds : diallyl desulphated and diallyl thiosulphate.

Uses :

- Onion contains chemicals that seem to reduce swelling and lung tightness related to asthma.
- It also contains chemicals that seem to reduce cholesterol and lower blood sugar. People use onion to prevent scarring.

- It is also used for obesity, hair loss, asthma, insomnia, high blood pressure.
- Onions contain antioxidants and compounds that fight inflammation, decrease triglycerides, and reduce cholesterol levels.

Castor oil



Synonyms : Fossil oil, Grease, Lubricating oil, Calamus oil, Chinese wood oil, Hedeoma oil, Hydnocarpus oil, Linseed oil.

Biological source : Seed *Ricinus communis*.

Family : Spurge family (*Euphorbia ceae*)

Chemical constituents : Glyceride of ricinoleic acid, isoricinoleic, stearic, and dihydroxy stearic acids.

Uses :

1. Hydrate and moisturize your hair strands. Like other natural oils, castor oil provides hydration to Your hair and scalp.
- 2: Healthy and shiny hair.
- 3: Has antibacterial and antifungal property

Aloe vera



Synonyms : Mussbar

Biological source : *Aloe barbadensis miller*.

Family : Liliaceae

Chemical constituents : Lupeol, salicylic acid, urea nitrogen, cinnamonic acid, phenols and sulfur.

Uses :

Strengthens hair. Aloe vera has many active ingredients and minerals that can help strengthen your hair.
Controls greasy hair. Aloe vera has enzymes that break down fats and so strips your hair of an extra oil spectra.

Coconut oil



Synonyms : Coconut Palm oil

Biological source : Cocos nucifera L.,

Family : Aceraceae Coconut oil is composed of the fatty acids, caprylic acid C - 8:0 (8%), capric acid, C- 10:0,(7%), lauric acid C- 12:0, (49%), myristic acid C-14:0(8%), palmitic acid C-16:0(8%), stearic acid C-18: (2%), oleic acid C-18:1 (6%) a. 18:2 linoleic 18:2 linoleic acid

Chemical constituents : Coconut oil is composed of the fatty acids, caprylic acid C - 8:0 (8%), capric acid, C- 10:0,(7%), lauric acid C-12:0, (49%), myristic acid C-14:0(8%), palmitic acid C- 16:0 (8%), stearic acid C-18:0 (2%), oleic acid C-18:1(6%) and 2% of C-18:2 linoleic acid

Uses : Penetrates the hair shaft, unlike other oils that just sit on top Moisturizes the scalp and helps with dandruff . The medium- chain fatty acids help to repair split ends Keeps hair from losing protein while Washing hair stays thicker . Give your hair a really beautiful shine

Material and methods

The polyherbal hair oil was prepared 3-8 by collecting various plant materials like Amla fruits, curry leaves, henna leaves, neem leaves from herbal garden and almond, garlic, castor oil, Arendal oil and coconut oil were procured from local market.

Sr. no	Ingredient	Quantity
1.	Amla powder	10 g
2.	Curry leaves	10 g
3.	Onion	20 g
4.	Coconut oil	10 mg
5.	Castor oil	10 mg
6.	Metha seeds	10 g
7.	Alvera	10 g

Methods of preparation:

- A. Herbs are weight by using weighing balance whereas, oils are measured through pipette.
- B. The oils and herbs are mixed together in a vessel.
- C. The above mixture is then allowed to boil on low flame with continuous stirring. So, as to avoid the adherence of the medicinal plants to the bottom of the vessel.
- D. At this step moisture of the medicinal plant commenced to evaporate so it is agitated frequently and carefully to ensure that the mixture does not stick at the bottom of vessel.
- E. The herbs are taken out from time to time to know the condition and stage of mixture of oils.

- F. As further heating to the content, the oil starts to form a froth. This is the condition where all the active ingredients of medicinal plants starts to concentrate in oil.
- G. In the next step, the mixture is filtered through muslin cloth.
- H. The collected strain is final herbal hair oil product.

Extraction of plant material

It is a process in which crude drug is boiled in a specific volume of water for definite time; it is then cooled and strained or filtered and used for further process

II. CONCLUSION

The utilization of herbal hair oil in the cosmetics enhanced many folds impersonal hygiene and health care system. Herbal oil is one of the most well recognized hair treatments. The use of different herbal materials which is having different benefits with good combination will give the great effect for hair. The herbal extracts and constituents chosen for the formulation of hair oil were reported to have hair growth, relaxation, anti-dandruff, hair thickening and airfall control properties, which when used together replicated as energetic effect in promoting healthy and shiny hair growth. The formulation was proven to be safe for human use. Because values of evaluation parameters of our formulation show similar results as standard values hence it is concluded that the oil is beneficial in maintaining good hair growth of the hairs turning grey hairs to black provide in protection from dandruff and results lustrous looking hairs. The formulated hair oil will help in maintaining good growth of hair, not only that it also provides turning grey hair to black, protects from dandruff, reduces stress etc. It provides various essential nutrients required to maintain normal function of sebaceous glands and promotes natural hair growth. Formulation was done and evaluated by means of various parameters like pH, organoleptic properties (colour, odour, sensitivity, sedimentation) acid value, viscosity, specific gravity, and stability test. At last, it can be concluded that the herbal hair oil formulations have significant quality.

The formulated herbal anti-dandruff hair oil was tested and all parameters were found to be satisfactory. As all ingredients used were herbal no side effect was shown and hence we can conclude the preparation is safe and effective for all types of hair. The formulation was non-gritty and non-irritating to the skin was observed. It was found that herbal hair oil was able to moisturize hair and scalp and also reduce hair fall. An antimicrobial test was performed in order to confirm anti-dandruff activity against *Malassezia furfur* and adequate results were obtained for the same.

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