Formulation And Evaluation of Polyherbal Hair Oil

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Abstract:
Hair care is an essential aspect of personal grooming, with various formulations available in the market catering to different hair types and concerns. The present study focuses on the formulation and evaluation of a polyherbal hair oil, leveraging the benefits of multiple botanical extracts known for their therapeutic effects on hair health.

The formulation process involved selecting and blending herbal extracts with proven hair care properties, including but not limited to, promoting hair growth, strengthening hair follicles, preventing dandruff, and nourishing the scalp. The selected herbs were meticulously combined in appropriate proportions to achieve a synergistic effect, enhancing the overall efficacy of the hair oil.

Several parameters were evaluated to ensure the quality and effectiveness of the formulated polyherbal hair oil. These parameters included physicochemical characteristics such as color, odor, pH, viscosity, and stability under various storage conditions. Furthermore, the hair oil was subjected to efficacy testing through in vitro and/or in vivo studies to assess its impact on key aspects of hair health, such as hair growth stimulation, reduction in hair fall, and improvement in scalp health.

The results of the evaluation demonstrated promising outcomes, indicating the potential of the polyherbal hair oil formulation in addressing various hair care concerns effectively. The formulated hair oil exhibited desirable physicochemical properties, indicating its suitability for consumer use. Moreover, efficacy testing revealed significant improvements in hair growth, reduction in hair fall, and enhancement of scalp health, validating the therapeutic efficacy of the polyherbal formulation.

In conclusion, the formulation and evaluation of the polyherbal hair oil present a promising approach towards developing a natural and effective solution for maintaining healthy hair and scalp. Further studies, including clinical trials, are warranted to establish its safety and efficacy in real-world settings and to explore its commercial potential in the ever-growing hair care market.

INTRODUCTION:
In Ayurvedic medicine herbs are used as an integral part of health care system. Herbal formulations always have attracted considerable attention because of their good activity and comparatively lesser or nil side effects with synthetic drugs.[1]

Hair is one of the vital parts of the body considered to be protective appendages on the body and accessory structure of the integument along with sebaceous glands, sweat glands and nails. Hair plays a very important role in the personality of humans and for their cure we use lots of cosmetic products. Hair oils are natural oil products with essential properties to treat hair problems. Herbs and herbal drugs are clinically proved good for hair growth. Hair oils those embraces herbal drugs are called as hair tonics.[2]

Hair loss problem is of great concern to both males & females & the main problems associated with hair loss are hair fading, dandruff & falling of hair. Various synthetic medicines are available for hair loss which does not treat permanently & also shows severe side effects.

Herbal hair oil not only moisturizes scalp but also converse dry scalp and dry hair conditions. It provides numerous essential nutrients required to maintain normal functions of the sebaceous gland and promote natural hair growth. Hair oils are the hair care formulations applied for cure of hair disorders such as baldness, greying of hairs, hair falling, and dryness of hairs A plethora of herbs have been employed for hair treatments.[3]

Hair oiling is the practice of pouring oil onto hair and massaging it into the scalp to increase moisture, luster and shine. Hair oiling may soften the hair and provide vitamins and minerals that get stripped from frequent

washing. Herbal hair oil are natural oil products with essential properties to treat hair problems like thinning of hair and dry or flaky scalp.

Various herbs like Neem, Amla, Hibiscus, can be useful in hair care. Amla is rich in vitamin C, tannins and minerals such as phosphorus, iron and calcium which provides nutrition to hair and also causes darkening of hair. Hibiscus consists of calcium, phosphorus, iron, vitamin B1, riboflavin, niacin and vitamin C, used to stimulate thicker hair growth and prevents premature graying of hair. Neem oil is used to nourishes the dry scalp, and its antifungal agents help to treat dandruff. Curry leaves oil helps to reduce hair fall and prevents untimely graying of hair. Tulsi helps maintain moisture in your scalp and improves blood circulation, reduces itchiness and dryness.[4]

LITERATURE SURVEY:

Pushpendra Kumar Jain and his Evaluating Hair Growth Activity of Herbal Hair Oil. This article gives information regarding herbal drugs like Emblica officinalis, Bacopa monniera and Cyperus rotundus were selected for the formulations of poly herbal hair oil.[10]

Pooja S Banerjee and her Preparation, evaluation and hair growth stimulating activity of herbal hair oil. This article gives information regarding mixture of crude drugs fruits of Embelica officinalis, flowers of Hibiscus rosa sinensis, leaves of Bacopa monnieri and seeds of Trigonella foenumgraecum were prepared in varying concentration in the form of herbal hair oil by three different oils preparation techniques (direct boiling, paste and cloth method) and were tested for hair growth activity.[16] [4]

Rahathunnisa begum and her Preparation and Evaluation of herbal hair oil.

This article gives information regarding the presence of number of phytochemicals and botanicals in the herbal products have dual stuff, one that they are used as cosmetics for body care and another that phytochemicals amend the biological functions of human body naturally results in healthy skin and hairs.[5][8]

Debajyoti Das and her evaluating hair growth potential of some traditional herbs. This article gives information regarding Centella asiatica, Cyperus rotundus & Emblica officinalis alcoholic and aqueous extract were prepared and evaluated for the hair growth properties using albino rats.[9]

Sapna Gautam and her Formulation and evaluation of herbal hair oil. This article gives information regarding how to formulate herbal oil for general purpose (application in hairs) using various herbs. The formulated herbal oil was evaluated and various parameters such as viscosity, saponification value, pH .

Shazia Anwer Bukhari and her exploration of Nutraceutical Potential of Herbal Oil[6] Formulated from Parasitic Plant. This article gives information regarding Cuscuta reflexa(C.reflexa) is a parasitic climber of medicinal importance. The present study was aimed to evaluate the nutraceutical potential of C. reflexa stems collected from different hosts and to evaluate the role of the herbal formulation in dandruff, hair fall control as well as hair growth promoter.[12]

R. R. Shah and his Preparation and Evaluation of Polyherbal Hair Oil- An Effective Cosmetic. This research gives information regarding guideline on the use of herbal ingredients on the preparation of Herbal Hair oil having minimal or no side effects.[13]

Akram Ahmad and his Preparation and Evaluation Antioxidant Activity of Mixed Herbal Hair Oil Formulation. This article gives information regarding Antioxidants are helpful in increasing the blood circulation and thus help in hair growth as well as in the treatment a lot of diseases. Alopecia is a dermatological disorder with psychosocial implications on patients with hair loss.[7]

Ch.Naga Haritha and his Preparation and evaluation of poly herbal hair oil. This article gives information regarding antimicrobial activity of the poly herbal hair oil was studied by the zone of inhibition method. The Antioxidant activity of the oil was studied by DPPH radical scavenging test.[15][11]

Neha N. Jagtap and her Formulation and Evaluation of Polyherbal Oil. This article gives information regarding the prepared polyherbal hair oil evaluated different parameters within the acceptable limits. Such as phytochemical screening, organoleptic

characterization, specific gravity, pH, viscosity, acid value, saponification value, refractive index, and also stability study.[17]

AIM AND OBJECTIVE:

Aim: Formulation and Evaluation of Polyherbal Hair Oil.

Objective of the study:
1) The objective of present study involves preparation of herbal hair oil using amla, hibiscus,Brahmi, methi and its evaluation for increase in hair growth activity.
2) To study how oils help to make hairs silky.
3) To study numerous essential nutrients required to maintain normal functions of sebaceousgland.
4) To study the importance of hair oil for the treatment of common hair problems such asbaldness, alopecia, hair fall, gray hair.
5) To study how oils are effective in moisturizing scalp.
6) To give luster to the hair.
7) To retain them soft and flowing.
8) To keep the brain, cool and reduce hair fall.

DRUG PROFILE:

1) Hibiscus Flower:
Scientific Name: Hibiscusrosa- sinensis
Family: MalvaceaeOrder: Malvales
Uses: Hibiscus flowers help to stop hair loss, make your hair look healthy and lustrous, preventpremature graying, thicken hair and add volume, treat dandruff,
condition against frizz, dryness, and breakage, prevent split ends.

2) Neem leaves:
Scientific Name: Azadirachtaindica Order: Sapindales Family: Meliaceae
Use: Neem is an effective herb to treat hair loss. Due to its antibacterial, antifungal and anti-inflammatory properties, neem is an excellent way to curb dandruff. It helps the hair follicles to become stronger and also encourages hair growth.

3) Curry leaves:
Scientific   Name: Murraya koenigii or Bergerakoenigii.
Order: SapindalesFamily: Rutaceae
Uses: They are rich in antioxidants and proteins, theseantioxidants neutralize the freeradicals and keep your hair healthy and strong.

4) Tulsi leaves:
Scientific Name: Ocimum tenuiflorumOrder: Lamiales
Family: Lamiaceae
Uses: Tulsi benefits hair by rejuvenating the hairfollicles and strengthening the roots,
which in turn curbs hairloss.

5) Fenugreek seeds:
Scientific Name:Trigonella foenum- graecumOrder: Fabales
Family: Fabaceae
Uses: Fenugreek seeds have high protein and nicotinic acid content, which helps prevent hair fall and dandruff, and in treating a variety of scalpissues like dryness of hair, baldness and hair
thinning. It contains large amounts of lecithin, which hydrates the hair and strengthens the roots or hair follicles.

6) Amla :
Scientific name: Phyllanthus emblicaFamily: Phyllanthaceae
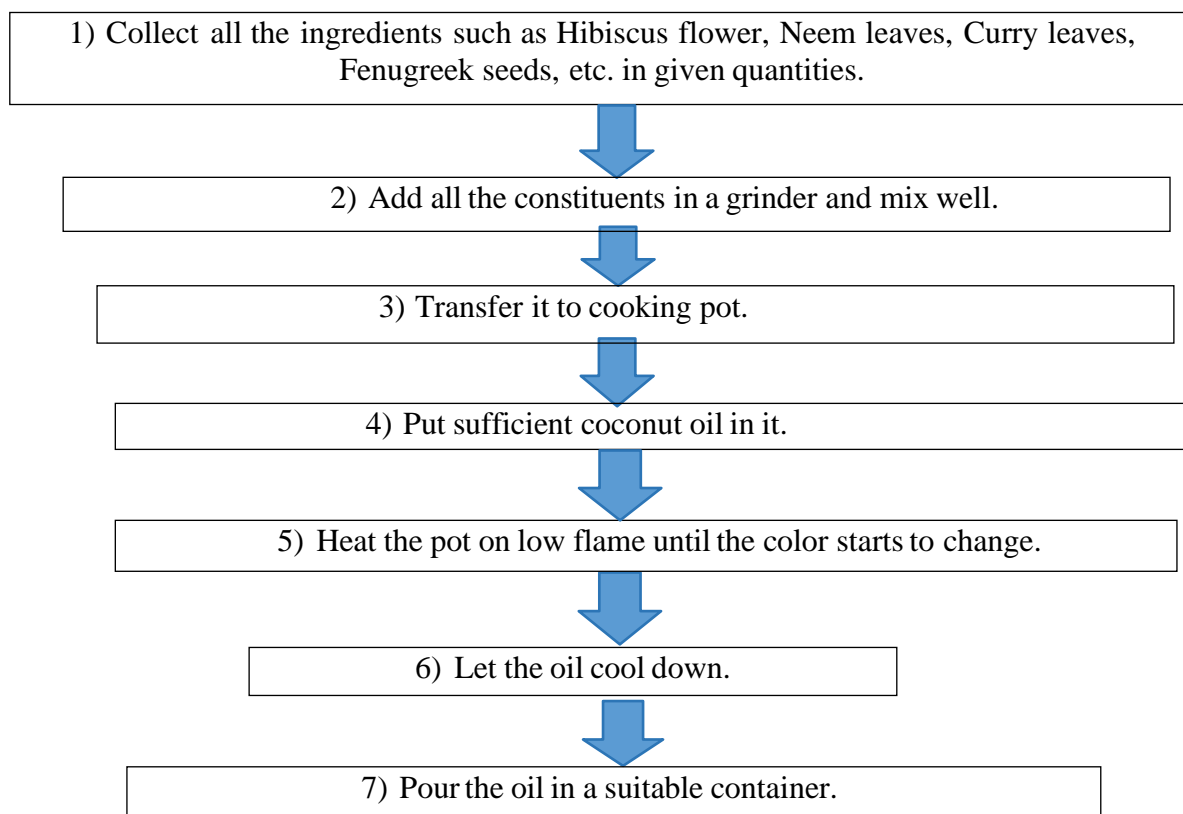
Order: Malpighiales

Uses: It helps in conditioning scalp, promote healthy hair growth, minimize grays, boost volume, reduce dandruff.

FORMULATION TABLE:

Ingredients	Quantity (gm)	Uses
Hibiscus flower	15	Prevent Dandruff
Neem leaves	05	Antimicrobial
Curry leaves	05	Prevent Hair Fall
Tulsi leaves	05	Strengthen the roots
Fenugreek seeds	10	Hair Growth
Amla powder	01	Hair Growth
Triphala	1.5	Prevent prematuregreying
Camphor	01	Stimulating Agent
Coconut oil	25	Vehicle
Almond oil	25	Vehicle

EXPERIMENTAL WORK :

1) Collect all the ingredients such as Hibiscus flower, Neem leaves, Curry leaves, Fenugreek seeds, etc. in given quantities.

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2) Add all the constituents in a grinder and mix well.

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3) Transfer it to cooking pot.

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4) Put sufficient coconut oil in it.

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5) Heat the pot on low flame until the color starts to change.

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6) Let the oil cool down.

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7) Pour the oil in a suitable container.

EVALUATION PARAMETER:
1)   Color: Observe by visualization (naked eyes)
2)   Odour : Observe by smell.
3)   Sensitivity test: The prepared herbal hair oil was applied on 1 cm skin of hand and exposed to sunlight for 4-5 min.
4)   Irritation test: The prepared herbal hair oil was applied on 1 cm skin of hand and exposed to sunlight for 4-5 min.
5)   pH test: pH of the herbal oil was detected using pH meter.
6)   Specific gravity : Specific gravity of the prepared oil was determined using specific gravity bottle.
7)   Acid value: 10ml of oil was added with 25ml of ethanol and 25ml of ether. Phenolphthalein was added as indicator and titrated with 0.1M potassium hydroxide solution
8)   Saponification value : 2g of oil was accurately weighed and transferred into a 250ml of iodine flask. 25ml of 0.5M alcoholic potassium hydroxide was added and boiled under reflux on a waterbath for 30mins. Phenolphthalein was added as indicator and titrated against 0.5M HCl ('a' ml). Similarly blank was performed ('b' ml) without the sample.

RESULT:
The formulation and evaluation of polyherbal hair oil using Neem leaves, curry leaves , tulsi leaves, hibiscus flowers, fenugreek seeds, camphor was prepared. The various parameters like color, odour, irritation test, sensitivity test, viscosity, pH, specific gravity, saponification value and acid value of herbal hair oil was evaluated. From the present evaluation it was found that the formulated herbal hair oil has optimum standards .The prepared formulation is yellowish in color with pH in accordance with human skin neutral to slightly acidic.

Parameter	Observation
color	Yellowish
Odour	Pleasant
Sensitivity test	Not sensitive
Irritation test	No irritation
pH test	5.19
Specific gravity	0.97

Acid value	3.4
Saponification test	105

CONCLUSION:

Based on the results of this study we can conclude that the formulated herbal hair oil can maintain normal function of sebaceous glands and promotes natural hair growth. It can also give antimicrobial, hair growth, hair thickness properties. It can help prevent hair thinning, treat scalp infection. It can help to maintain moisture in scalp and improves blood circulation,reduces itchiness and dryness.

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