



Formulation Development and Evaluation of Herbal Hair Oil.

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Abstract:

Herbal phrasings always have lower or no side goods comparatively with synthetic. The end of present study involves medication of herbal hair oil painting using the herbal constituents like, Amla, Almond, Garlic, Mehendi greasepaint, Neem, Castor oil painting, Arenal oil painting, Curry leaves, Coconut oil painting. All constituents give essential nutrients similar as vitamin, antioxidant, protein, terpenoids, and numerous essential canvases to maintain normal function of sebaceous glands. We've used five formulas using different herbal medicines and all the expression are showing anti-hairfall property with some of other salutary conditioning like anti-dandruff exertion, improves blood rotation to the crown and roots, reduce hair saturation, anti-fungal exertion, reducing the whitening of the hair. The formulated herbal oil painting was estimated by using colorful parameters similar as organoleptic parcels, specific graveness, stability, density, Acid value, pH etc. All the parameters were set up to be good and within the norms.

Keywords: Hair oil, herbs, formulation, preparation, evaluation, results and discussion.

Introduction

In the life of a person, hair is crucial. ^[1] Making hair oils and combining them with other medications that promote hair growth is the traditional method used in India. It is not unexpected that hair care plays a significant role in Indian women's self-care routines given that they are noted for having long, lustrous, and healthy hair. To maintain healthy hair and stop hair loss, the Charaka Samhitha, the gold standard of Ayurvedic treatment, stresses the need of oiling the hair and scalp. The daily use of hair oil was advised, and this tradition is being followed today. The oil should be infused with the proper herbs to complement the other ingredients. ^[2] Along with sebaceous glands, sweat glands, and nails, hair is one of the essential body parts regarded as protective

appendages on the body and accessory structure of the integument. The three essential components of hair are the root, which is the hair below the skin's surface, and the shaft, which is the hair above the skin. The bulb is a swelling at the base that develops from the dermis.^[3]

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. Castor oil, almond oil, and other types of oils are applied to the scalp together with the appropriate herbal remedies. Because it absorbs into the hair strands more effectively than other oils and is more affordable than other oils, coconut oil is the most worthy oil base among these. Therefore, adding coconut oil to herbal medicines is recommended as the best method for hair growth.^[4] The numerous types of hair oils, such as traditional hair oils like coconut, castor, and almond oil, as well as natural hair oils. It might be included into a hair care regimen in a variety of ways. 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 promote moisture, lustre, gloss, and blood flow to the scalp and hair. In addition to providing the vitamins and minerals that are lost during regular washing, hair oiling may soften the hair.

The numerous types of hair oils, including natural hair oils like castor, coconut, and almond oil as well as more contemporary hair oils. There are several methods to include it into a hair care routine. Thus, it starts to play a significant role globally. Hair oiling is the process of applying oil to the hair and massaging it into the scalp in order to boost moisture, lustre, and shine as well as to improve blood flow. The oiling of the hair may soften it and also give the vitamins and minerals that are lost during regular washing.

Herbal hair oils not only moisturise the scalp, but they also improve the condition of dry scalp and hair. It offers a wide range of crucial nutrients needed to support healthy sebaceous gland function and hair development. The plant components that are used are quite rich in flavonoids, polyphenols, saponins, tannin, vitamins, proteins, and minerals, as well as ricin oleic acid, among other nutrients. Additionally, these ingredients have a positive impact on hair health and aid in hair development.^[6] The objective of the current study was to create a polyherbal hair oil made of herbs like Amla, Almond, Garlic, Mehendi powder, Neem, Castor oil, Ashwagandha powder, and Coconut oil. These herbs have all long been recognised for their medicinal advantages in hair care. We must take the evaluation test after the preparation. A programme, practise, intervention, or initiative's ability to achieve its goals can be carefully examined through evaluation. Additionally, it assists in identifying project components that could use A polyherbal hair oil containing herbs like Amla, Almond, Garlic, Mehendi powder, Neem, Castor oil, Ashwagandha powder, and Coconut oil was the goal of the current research. These plants all have well-established historical promise for treating hair care. It also aids in identifying aspects of a project that could use improvement.^[7]

There are different types of evaluation test for hair oils analogous as

- Acid value test
- Saponification test
- PH
- Viscosity
- Specific gravities etc.

The following are the colorful hair care medications

- Cleansers Eg cleaner nut, shikakai, reetha, .
- Conditioners Eg henna, Amla, hibiscus, rosemary, tea.
- Nourishers Eg Brahmi, bring raj, eggs, coconut oil painting, sesame oil painting.
- Hair colorings Eg henna.
- Hair growth promoters Eg Brahmi, Amla, hibiscus, coconut oil painting, sesame oil painting.
- Anti dandruff Eg cleaner nut, shikakai, aloe vera.
- To promote the hair growth and smoothness of the hair.
- To condense the hair with vital nutrients similar as vitamins, and minerals.
- To help the dandruff, spear ends, and dull hair.
- To give an indispensable source from dangerous, chemicals.

Objectives of the present study are as follows

Herbal hair oil is one of the most well recognized hair treatments. Herbal hair oil not only moisturizes scalp but also reverses dry scalp and dry hair condition. It provides numerous essential nutrients required to maintain normal function of sebaceous glands and promotes natural hair growth:

- Natural goodness of hair.
- Relaxing massage for healthy scalp.
- Fights against hair fall
- Control frizzy hair.
- To promote hair growth.
- To discuss the uses and benefits of different ingredients used in the formulation of hair oils.
- To identify the good combination of herbs which will give maximum effect.
- To study the formulation, preparation and evaluation of polyherbal hair oils.^[8]

MATERIALS AND METHODS

Collection of Plant Materials

The polyherbal hair oil painting was prepared by collecting colorful factory accoutrements like Amla fruits, Ashwagandha, henna leaves, neem leaves from herbal theater and almond, garlic, castor oil painting, and coconut oil painting were carried from original request. Factory profile of some herbal material used in medication of polyherbal hair oil painting was given below.^[9]

Amla Biological source Dried fruits of *Phyllanthus emblica*.

Family Phyllanthaceae

Use hair conditioner, treats crown affections, promotes hair growth.



Fig No 1. Amla

Henna

Biological source: Dried leaves of *Lawsonia inermis*

Family: Lythraceae

Use: hair colorant helps in hair growth.



Fig No 2.Henna

Neem

Biological source: Dried leaves of *A. Indica*

Family: Meliaceae

Use:

- Leaves Antimicrobial
- Antiseptic
- Antidandruff.



Fig No 3. Neem.

Coconut oil

Family- Aceraceae.

Scientific name- Cocos nucifera L.

Parts used- kernel oil.

Geographical location: Southern India.

Active constituents- Fatty acid, capric acid, lauric acid.

Uses-

- Used as vehicle
- Promotes hair growth
- Moistures the hair follicles.



Fig No 4. coconut Oil.

Ashwagandha

Withania somnifera is commonly known as “Indian Winter cherry” or “Indian Ginseng.

Family: Solanaceae

Use:

- Ashwagandha helps strengthen your hair and scalp barrier
- Reducing hair breakage.



Fig No 5. Ashwagandha.

Ashwagandha promotes the product of melanin in your hair. Melanin is the color produced by our cells to give your hair its colour. Ashwagandha also prevents early greying of hair. Ashwagandha also prevents early greying of hair.

Castor oil

Family- Euphorbiaceae.

Scientific name- Ricinus communis L.

Parts used- Seeds oil.

Geographical location- Gujarat in western India.

Active constituents- Phytosterols, tocopherols, carotenoid.

Uses-

- Lubricate the hair shaft
- Increases flexibility
- Treats dandruff.



Fig No 6. Castor Oil.

Benefits of castor oil for hair

- 1- Hydrate and moisturize your hair beaches. Like other natural canvases , castor oil painting provides hydration to your hair and crown.
- 2-Healthy and candescent hair.
- 3- Has antibacterial and antifungal parcels.

4- Rich in vitaminE.

5- Boost hair growth.

Garlic oil

Family- Amaryllidaceae.

Scientific name- Allium sativum.

Geographical location- Gujrat, Madhya Pradesh, Maharashtra and Rajasthan.

Active constituents- Diallyl thiosulphate, Diallyl sulfide, Diallyl Trisulfide.

Uses-

- Shows antimicrobial properties
- Contain vitamin C helps to promote hair growth.



Fig No 7. Garlic Oil.

Almond oil

Family- Rosaceae.

Scientific name- Prunus dulcis.

Parts used- Dried kernels of almond tree.

Geographical location- Northern India.

Active constituents- Palmitic acid, linolic acid, oleic acid.

Uses-

- Strengthen the hair
- Protect the hair from sunlight
- Use as scalp treatment.



Fig No 8. Almond oil

Procedure for Preparation of Hair Oil

- Directly weigh all the dried and fresh sauces and leaves greasepaint.
- Mix coconut oil painting, and castor oil painting slightly.
- After that mixing add almond oil painting, mehndi greasepaint, Amla excerpt and keep away for overnight.
- Add ashwagandha greasepaint, garlic oil painting, neem excerpt and boil until colour of ashwagandha changes to dark brown colour.
- After the colour change whole medication was filtered through muslin cloth.
- Eventually small quantum of color and spicing agent was added to the oil painting and it was placed in amber colored bottle.

Formulation Table

Table No-1

Sr. No	Ingredients	Quantity
1.	Amla	5 gm
2.	Almond oil	2%
3.	garlic	2%
4.	Mehendi powder	2 gm
5.	Neem	2.5 gm
6.	Ashwagandha	2.5 gm
7.	Castor oil	2%
8.	Coconut oil	2%

Evaluation of Herbal Hair Oil

The formulated herbal oil was evaluated for parameters like pH, acid value, saponification value, refractive index, viscosity and organoleptic parameters^[10,11]

Acid value

1 ml of oil painting was added with 2.5 ml of ethanol and 2.5 ml of ether. Phenolphthalein was added as index and titrated with 0.1 M potassium hydroxide result, Acid value = 5.2 n/w Where, n = Number of ml of 0.1 M KOH w = Weight of oil painting

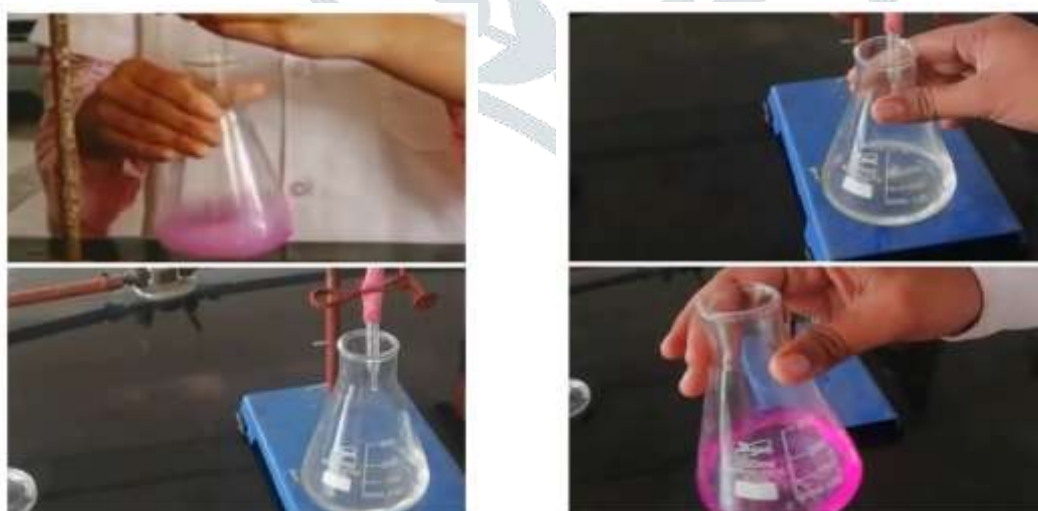


Fig No 9. Acid value

Saponification value

0.2 g of oil painting was directly counted and transferred into a 25 ml of iodine beaker. 2.5 ml of 0.5 M alcoholic potassium hydroxide was added and boiled under reflux on a water bath for 30 mins. Phenolphthalein was added



Fig No 10. Saponification value

as index and titrated against 0.5 M HCl (' a ' ml). also blank was performed (' b ' ml) without the sample. Saponification Value $28.05(b - a) / w$ Where, w = weight in grams of the solution.

pH

pH of the herbal oil was detected using pH meter.



Fig No 11. PH

Viscosity

Viscosity was determined using Ostwald's viscometer.



Fig N0 .12 Viscosity

Specific gravity

Specific gravity of the prepared oil was determined using pyknometer or specific gravity bottle.



Fig No 13. Specific gravity.

Refractive Index

It was determined using refractometer.

Organoleptic property

Colour, odour, skin irritation was determined manually. Oil was applied on hand and exposed to sunlight for 5mins to check for any irritation over skin.



Fig No 14. Organoleptic property

Evaluation of Herbal Hair oil

Table No .2

Sr.No	Parameters	Observations	Test pass or fail
1.	Colour	Dark Brown	-
2.	Sensitivity	No Irritation	-
3.	Specific gravity	1.09	Pass
4.	Viscosity	0.92	Pass
5.	PH	6	Pass
6.	Acid value	5.2	Pass
7.	Saponification value	28.05	Pass
8.	Irritation test	No Irritation	Pass

Result and Discussion

The set polyherbal hair oil painting using herbal Ingredients like Amla, Neem, Ashwagandha, Almond oil painting, Garlic oil painting, Coconut oil painting, and all Ingredients are free from any side effect. All Ingredients that are used in tis Preparation that are named according to their parcels evaluation organoleptically observing colour, perceptivity, Specific graveness, density, PH, Acid Value, Saponification Value, Irritation Test. The Color of hair oil painting is Dark Brownish Colour, perceptivity is no any vexation to the skin, Specific graveness is1.09, density is0.92, PH is5.9, Acid Vale is5.2, Saponification value is28.05, and also expression don't produced any detriment to the skin.

Conclusion

This exploration provides guideline on the use of herbal constituents on the medication of Herbal Hair oil painting having minimum or no side goods. All the parameters showed that they're within the limits and since all the constituents added have numerous advantages, this oil painting will help in maintaining good growth of hair, turning slate hair to black, protects from dandruff and results in lustrous looking hair. All Ingredients that are used in this expression that are natural and that are less lateral effect as compared to the synthetic chemical products. So people like to buy this product much as compared to synthetic or other hair oil painting.

Future Scope

Phrasings gain request value in agreement with request analysis and environmental factors. By using herbal hair oil painting, you may give your hair a stronger, youngish. utmost of the herbal constituents give Side effect to the hair but we use polyhedral Ingredients that reduce hair fall and due to that people like to galleries this expression. The benefits of the each-natural, multifunctional parcels of Ingredients are adding demand for them.

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