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Research Article

Formulation And Evaluation of Herbal Hair Oil

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ABSTRACT

Humankind uses various products known as cosmetics to enhance elegance, to look young and charming. Thus, cosmetics play a keen role in human life. Cosmetology is defined as the science of alteration in appearance. Herbal cosmetics have burgeoning demand and in the world market and are inestimable gift of nature. There are wide spans of herbal cosmetic products to satisfy beauty regime and have less side effects when compared with synthetic drugs. Hair plays a very important role in enhancing the personality of humans as well as it acts as a protective appendage. The presence of number of phytochemical and natural constituents in the organic poly-herbal hair oil have dual work, one that the formulation is used as a cosmetic for hair-care and the other that the presence of phytochemical amend the hair care and protection, which naturally results in healthy hair. The present work is aimed to develop effective organic poly-herbal hair oil for daily use and to prevent various hair problems, including alopecia and scalp psoriasis. Four formulations were prepared using different types of oils, along with various herbs/parts of herb. These oils were subjected to evaluations for organoleptic properties, chemical and analytical basis. All four formulations were compared based on the result of evaluations and the effective one was selected as the best. The preparation and evaluation of a Polyherbal Hair Oil formulated as an effective cosmetic for promoting hair health and addressing common hair concerns. The study aims to harness the synergistic benefits of natural plant based ingredients to develop a potent and safe hair care solution. The Polyherbal Hair Oil was prepared by infusing Coconut oil and castor oil with extracts of Curry leaves, Hibiscus flowers and leaves, Fenugreek seeds, following standardized extraction methods. Physicochemical evaluation confirmed the oil's suitability for topical application, with desirable characteristics such as pH, viscosity, and density. Accelerated stability studies demonstrated the oil's stability under various storage conditions, indicating its long shelflife. Efficacy evaluation through in vitro and in vivo studies revealed the Polyherbal Hair Oil's ability to promote hair growth, improve scalp health, strengthen hair strands, and control dandruff. Safety assessment confirmed the oil's skin compatibility and microbiological safety.

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INTRODUCTION

Hair is an epidermal derivative which is one of the vital parts increasing the overall elegance of the body. Hair fall, dandruff, lice, split ends, grey hair are few problems involved with hair faced by human¹. To overcome these, human takes many measures by applying many cosmetics for each. Hair oil is one among them used to solve almost all of these problems. Herbal cosmetics are in high demand due to the increasing interest of mankind towards them because they are more effective with nil or less side effects, easily available ingredients etc. Hair care cosmetics are now added with herbs and they are well recognised compared with synthetic ones³. Herbal hair oil is more preferred and is used in many ailments of hair. They promote hair growth, improve elegance of hair and prevent hair fall⁵. Hair oil not only promotes hair growth they also provide necessary moisture to the scalp rendering in beautiful hair. The present work was aimed to prepare and evaluate a polyherbal hair oil containing herbs like curry leaves, bringaraj, amla, ficus, henna, hibiscus, vetiver, fenugreek in coconut oil. All these herbs have well known traditional potential in the treatment of hair care. Hair oils are widely used in India for hair care. indigenously available herbal ingredients are used to make hair oil. However nowadays, synthetic products are also used as perfume and coloring of hair oils. Traditionally hair oils are made from vegetable oils such as till oil, castor oil, coconut oil etc. now petroleum white oils are used in the formulation of hair oil to reduce cost and improve product quality. Hair is present on most skin surfaces except the palms, palmar surface of the fingers, soles and plantar surfaces of the feet. Genetic and hormonal influences largely determine hair thickness and the pattern of distribution. Each hair follicle goes through a growth cycle, which consists of a growth stage and a resting stage. herbal drugs are used as hair tonic.

Hair care products are categorized into two main categories, hair tonics and hair grooming aids. These are basically the extracts of medicinal plants in an oil base. A plethora of herbs have been employed for hair treatments. A few of these herbs are fenugreek seed, hibiscus flower, till oil, castor oil, coconut oil, curry leaves etc. Here we have used two formulas using different herbal drugs and both 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, reducing the whitening of the hair.

Review Of Literature

1. **Pavan S, Prathibha C et al (2021)** 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., fenugreek seeds, hibiscus, curry leaves, aloe vera, till oil, castor oil, jasmine oil, etc. 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, whitening of the hair.

2. **Pijush Das, Naveen Kumar S, Prathibha C, Dr. Kavitha PN et al (2021)** Herbal cosmetics are now-a-days widely used for daily life because they have fewer side effects and with a better safety and security profile. The present work was aimed to formulate a poly herbal hair oil for application in hairs using various herbs. We have used two formulas using different herbal drugs and both the formulation are showing anti-hair fall property with some of other beneficial activities like antidandruff activity, improves blood circulation



to the scalp and roots, reduce hair pigmentation, reducing the whitening of the hair.

3. Mrs. Aswathy. c, Farshana Parvine, Jamsheeda. V, et al (2022) Herbal cosmetics are now-a-days widely used by the common people because of concept of fewer side effects and with a better safety and security profile. The prepared polyherbal hair oil evaluated different parameters such as Specific gravity, PH, Organoleptic properties, Sensitivity test, Saponification value, Acid value, Viscosity, and Phytochemical screening.

4. Dr. K. Sudheer Kumar*, P. Anitha, SK. Shahin, et al (2022) Humankind uses various products known as cosmetics to enhance elegance, to look young and charming. Thus, cosmetics play a keen role in human life. Cosmetology is defined as the science of alteration in appearance. Herbal cosmetics have burgeoning demand and in the world market and are inestimable gift of nature. There are wide spans of herbal cosmetic products to satisfy beauty regime and have less side effects when compared with synthetic drugs. Hair plays a very important role in enhancing the personality of humans as well as it acts as a protective appendage.

5. Farshana Parvine, Jamsheeda. V, et al (2022) This research paper is about the preparation and evaluation of Polyherbal hair oil using various plant materials Such as Amla, Hibiscus, Neem, Indigo, Bringhraj, Camphor, Fenugreek, Coconut oil, Aloe vera, and Rosemary Oil. Herbal cosmetics are now-a-days widely used by the common people because of concept of fewer side effects and with a better safety and security profile. The primary skin irritation test is carried out. Hence, polyherbal hair oil considered to increase the hair growth, reduces hair loss, and providing protection against dandruff.

6. Dhanashree V. Darade , Vaibhav P. Gote, et al (2023) Review article emphasizes the importance of herbal hair oil for the healthy life of hairs. Herbal hair oil is a critical part of natural cosmetics. This review article involves the objectives of herbal hair oil, which includes herbal goodness of hair, manage frizzy hair, fight towards hair fall, etc. This emphasizes on the commonly used ingredients in the formulation of herbal hair oil which involves coconut oil, till oil, almond oil, Hibiscus, jasmine.

7. H. N. Ghule, Dr. Prachi et al (2023) the aim of present study involves preparation of polyherbal hair oil using plant materials. 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. Antimicrobial assay of the polyherbal hair oil was studied by the zone inhibition method.

8. G. Manikanta, M. Mohan Varma, KT. Sunil Kumar, Md. Shaheena and K. Heelima et al (2023) The current research aimed to formulate polyherbal hair oil utilizing fresh and dried herbs like amla, aloe vera, Tulasi, hibiscus, shikakai, curry leaves, jasmine, neem, fenugreek and other ingredients such as almond oil, coconut oil. The polyherbal hair oil formulated can satisfy all the required conditions to keep the hair moisturized, strengthen the hair and prevent dandruff caused by bacteria. The prepared polyherbal hair oil was evaluated for pH, specific gravity, viscosity, irritation, grittiness, acid value, and saponification value.

9. Shekhar Pandav, Virendra Gaikwad et al (2024) The aim of present study involves preparation of herbal hair oil Using the herbal ingredients 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-hairfall 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.

10. AVV. Indumani, I. Sahithi, K. Maheshwari et al (2024) Hair plays a very important role in enhancing the personality of humans as well as it acts as a protective appendage. The presence of number of phytochemical and natural constituents in the organic poly-herbal hair oil have dual work, one that the formulation is used as a cosmetic for hair-care and the other that the presence of phytochemical amend the hair care and protection, which naturally results in healthy hair. The present work is aimed to develop effective organic poly-herbal hair oil for daily use and to prevent various hair problems, including alopecia and scalp psoriasis..

11. Ajit Satish Thorve¹, Vasim A. Pathan, Sanjay Y. Garje et al (2024) This formulated as an effective cosmetic for promoting hair health and addressing common hair concerns. The Polyherbal Hair Oil was prepared by infusing Coconut oil and Almond oil with extracts of Curry leaves, Amla, Tulsi, Hibiscus flowers and leaves, Fenugreek seeds, and Neem leaves, following standardized extraction methods. Physicochemical evaluation confirmed the oil's suitability for topical application, with desirable characteristics such as pH, viscosity, and density..

12. G. Manikanta, M. Mohan Varma, KT. Sunil Kumar, et al (2023) The current research aimed to formulate polyherbal hair oil utilizing fresh and dried herbs like amla, aloe vera, Tulasi, hibiscus, shikakai, curry leaves, jasmine, neem, fenugreek

and other ingredients such as almond oil, coconut oil. The polyherbal hair oil formulated can satisfy all the required conditions to keep the hair moisturized, strengthen the hair and prevent dandruff caused by bacteria.

Rational Of the Study: -

Need Of Work: -

- It needs to go away the hair-dry, tender, and lustrous with precise manageability and minimum fly down.
- It must be fluently removed on irrigating with water.
- It must impart a pleasant smell to the hair.
- It should not beget any side effects to the skin or eye

Objectives: -

- To Relaxing massage for healthy scalp
- To Control frizzy hair
- 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.
- To Enhance hair growth by stimulating hair follicles and improving blood circulation to the scalp.
- To Reduce hair fall by strengthening hair roots and minimizing damage from environmental factors.
- To Provide essential nutrients to the hair and scalp, improving hair texture, shine, and manageability.
- To Provide essential nutrients to the hair and scalp, improving hair texture, shine.



Plan of Work:

- Selection of pure drug
- Preparation of reagents-
- Experimental design-
- Comparative study
- Result & discussion
- Conclusion
- Reference

Drug Profile:

1. Coconut Oil

- **Family-** Aceraceae.
- **Scientific name-** Cocos nucifera L.
- **Other names:** Fossil oil.
- **Grease**
- **Lubricating oil**
- **Parts used-** kernel oil.
- **Geographical location:** Southern India.
- **Active constituents-** Fatty acid, capric Acid, lauric acid.



Fig1: Coconut Oil

Uses- Used as vehicle, promotes hair growth and Moistures the hair follicles. Coconut oil is derived from milk of the coconut palm fruit. Coconut oil is used as A meals oil, and is used in industrial applications for cosmetics and detergent production. Coconut oil nourishes the scalp and proffer shine to the hairs.

2. Curry Leaves

- **Family-** Rutaceae.
- **Scientific name-** Murraya koenigii.
- **Other names:** karivepallai, karivembu, karivepaku, kadipatta
- **Parts Used-** Leaves.
- **Geographical Location:** Subtropical and tropical region through the Asia.
- **Active Constituents-**Bismahanine, murrayanine, murrayazolinol.



Fig2: Curry Leaves

Uses:

- Promotes hair growth and strengths hair roots.
- Help moisturize the scalp and remove the dead hair follicles.
- Preventing hair loss and thinning of hair.

3. Aloe Vera

- **Family:** Asphodelaceae (formerly Liliaceae)
- **Species:** A. vera
- **Genus:** Aloe
- **Synonyms:**
- Aloe barbadensis
- Aloe indica
- Aloe perfoliata L. var. vera
- Aloe vulgaris



Fig3: Aloevera

Uses - Conditioner and moisturizing effect, remove dandruff, boost hair growth, nourishing the hair. Combination of aloe pulp and coconut oil are rich in vitamins and minerals. These oils used on hair and scalp give healthy, strong, dandruff-free hair (antidandruff activity of the hair.)

Plant part used- whole plant.

4. Fenugreek

- **Family**-Trigonella. Fabaceae
- **Scientific name**- Trigonella foenum-graecum.
- **Parts used**- Seeds.
- **Geographical location**: Maharashtra.
- **Active constituents**- Trimethylamine, Trigonelline, Quercetin.
- **Other names**: Herbaceous plant, Fenugreek seed.



Fig4: Fenugreek Seeds

Uses:

Fenugreek is used as a herb (dried or fresh leaves), spice (seeds), and vegetable (fresh leaves, sprouts, and microgreens). Sotolon is the chemical responsible for the distinctive maple-syrup smell of fenugreek.

5. Hibiscus

- **Family**: Malvaceae
- **Botanical name**: *Hibiscus rosa-sinensis*
- **Other names**: *Hibiscus arnottii* Griff, *Hibiscus boryanensis* DC, *Hibiscus Cooperi* Auct.
- **Active constituents**- flavonoids, tannins
- **Parts used**: Whole flower & leaves



Use:

- Nourishes and thickens hair.
- It is obtained from the fresh petals of
- *Hibiscus Rosa Sinensis* belongs to the family Malvaceae.
- It helps to strengthen your hair roots.
- Hibiscus flowers and leaves are rich in flavonoids and amino acids and also nourish and thicken your hair.

6. Castor Oil

- **Scientific Name**: *Ricinus communis*

- **Family:** Euphorbiaceae (also known as the spurge family)
- **Synonyms:** Castor bean plant, palma christi
- **Common Names:** Castor oil plant, castor bean



Fig6: Castor Oil

Uses

- **Laxative:** The FDA approves castor oil as a natural laxative for occasional . works by stimulating muscle contractions in the intestines.
- **Skincare:** Castor oil can help with acne, dark circles, chapped lips, and wrinkles. It's also used in cosmetics and soaps.
- **Hair care:** Castor oil can help with dandruff, improve hair texture, and promote hair growth.
- **Wound healing:** Castor oil can promote wound healing and prevent drying out.
- **Arthritis:** Castor oil can reduce pain and swelling.

7. Jasmine Oil-

- **Botanical Family:** Jasmine plants belong to the Oleaceae family, also known as the olive family.
- **Genus:** The genus name for jasmine is Jasminum.

- **Species:** Jasminum officinale is a common species of jasmine, also known as common jasmine, summer jasmine, or poet's jasmine.
- **Synonyms:** Jasminum officinale is a synonym for the plant from which jasmine oil is derived.



Fig7: Jasmine Oil

Uses:

The natural moisturisation properties of jasmine oil combine with the nourishing element of yogurt and honey can strengthen your hairs, preventing breakage and supporting growth. Enhance your regular shampoo by adding a few drops of jasmine oil to it.

8. Till Oil -

- **Botanical Name:** Sesamum indicum
- **Family:** Pedaliaceae
- **Common Names:** Sesame, gingelly, til, benniseed, or simsim
- **Origin:** Sesame originated in the Indus Valley of North India and is widely spread.



Fig8: Till Oil

Uses:

- **Promotes Hair Growth:**

Sesame oil contains vitamins (E, B-complex) and minerals (magnesium, calcium, phosphorus) that nourish the scalp and stimulate hair follicles, promoting healthy hair growth.

- **Reduces Dandruff:**

Its antifungal and anti-inflammatory properties help combat dandruff and other scalp infections.

- **Strengthens Hair:**

Regular application can strengthen hair strands, minimizing brittleness and breakage. Moisturizes and Hydrates.

6. MATERIALS AND METHODS:

Table 6.1: List Of Materials

Sr.no.	Ingredient	Quantity (%)
1.	Coconut oil	60%
2.	aloe Vera	5%
3	Fenugreek seed	4%
4	Hibiscus Flower	5%
5	Curry leaves	3%
6	Castor oil	4%
7	Till oil	4%
8	Jasmine oil	15%

6.2 Methods of preparation

Formulation of 200ml Poly Herbal Hair Oil:

1. In a suitable beaker, add coconut oil, till oil, castor oil.
2. Add curry leaves, aloe vera, Hibiscus flowers, Fenugreek seeds to the oil mixture.
3. Heat the mixture over low heat allowing the herbs to infuse into the oils for about 30 to 40 minutes. Stir occasionally.
4. Add jasmine oil
5. Remove the beaker from double boiler or heat and let the oil cool down to room temperature.
6. Once cooled, strain the oil using a fine sieve or cheesecloth to remove any solid particles.
7. Transfer the strained oil into a clean, sterilized bottle or container for storage

6.3 Experimental Work:

Evaluation Parameter

Physical Appearance

The general characteristics like colour and odour were evaluated manually.¹⁰

Ascorbic Acid Test:

Added 1 drop of freshly prepared 5 per cent w/v sodium nitroprusside solution and 2 ml of dilute sodium hydroxide solution to 1 ml of 2 per cent w/v solution and 5 ml of water. Drop in 0.6ml of hydrochloric acid, mix, and records found.

Sulphur Test:

On the test paper, a drop of hydrogen peroxide was placed. When exposed to fumes, the paper becomes brown.

Saponin Test:

The formation of stable froth was observed by shaking oil and water in a test tube.

Primary Skin Irritation Test:

A basic skin irritation test was performed on the skin with a small amount of the produced herbal hair oil. For 1 hour, the test site was monitored for erythema and edema.

Evaluation Of Herbal Hair Oil:

The prepared oils were then subjected to physical and biological evaluation.

Physical evaluation:

In physical evaluation, parameters like specific gravity, pH, acid value, Saponification value are conducted.

Specific gravity:

Initially empty specific gravity bottle was weighed. Then the same specific gravity bottle was filled with water and again weighed. Later specific gravity bottle was replaced with hair tonic and weighed again. Weights are noted and thus specific gravity of hair oil was calculated.

- Weight of empty specific gravity bottle = w1gms.
- Weight of specific gravity bottle with water = w2gms.
- Weight of specific gravity bottle with hair oil = W3gms.
- Specific gravity bottle of water = 0.9961 g/cm³.



Fig 9: Specific Gravity

pH:

The pH was determined by using digital PH meter. 20ml of herbal hair oil was taken in a beaker and The bulb of PH meter was dipped in hair oil. The obtained pH values are noted down. gravity of hair oil was calculated as $\rho = \frac{W3-w1}{w2-W1} \times \rho_{water}$



Fig 10: pH Meter

Chemical Evaluation:

Acid value:

One gram of substance was dissolved accurately in 5ml of mixture of equal volume of ethanol and ether previously neutralized with 0.1M KOH. If the sample was not dissolved properly then reflux condenser was connected and the sample was warmed slowly with frequent stirring until the

sample was dissolved. Then 1ml of Phenolphthalein solution was added and titrated with 0.1M KOH until the solution remained as faintly pink after shaking for 30 minutes. Acid Value was calculated from the following equation.

$$\text{Acid value} = 5.61 \times n/w$$

N= No. of ml of 0.1M KOH W= Weight of substance

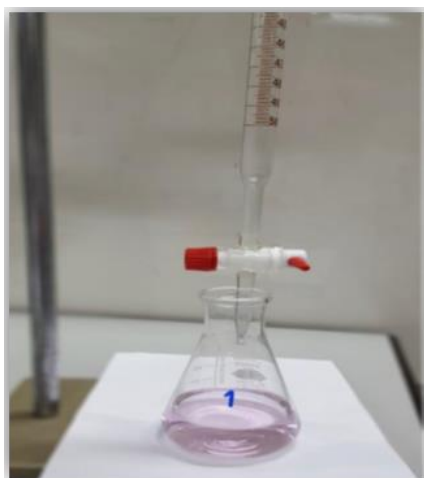


Fig 11: Acid Value

Saponification value:

2ml of herbal hair oil was weighed and transferred into a 25ml of conical flask. To this 25ml alcoholic KOH solution was added. It was heated on a water bath for 30 minutes by frequently mixing the content of the flask phenolphthalein was added to cooled liquid and titrated against 0.5M HCL. Balnk solution was performed and Saponification values were calculated.

Saponification value = (b-a) x 28.05/weight of substance Saponification values were determined and the Formulations were subjected to biological evaluation.



Fig12: Saponification Value

Physical evaluation

1. The color is brown.
2. The odor is characteristic.
3. The texture is smooth.
4. The pH level is 6.01
5. The specific gravity is 0.88 g/cm³.
6. The smoothness is consistent.

Chemical evaluation

1. The acid value is 0.68.
2. The saponification value is 28.05.
3. The viscosity is 1.07.

Biological evaluation

1. The irritation test result is non-irritant.
2. The sensitivity test result is non-sensitive



Fig13: Formulation Of Herbal Oil

Prepared herbal hair oil became expected for product overall performance which incorporates physicochemical Parameters.

Organoleptic properties:

Coloration:

Detected by means of bare eyes.

Sensitivity: implemented to the skin and exposed to the sunlight for 5 minutes to check for any inflammation over pores and skin.

Grittiness: Rubbed to the skin and determined.

Sedimentation: Hold the entire instruction aside for overnight and check for sedimentation.

pH determination: 18 Take a pH paper and dip into the formulated hair oil and check for the coloration trade.

Acid cost: 10 ml of oil turned into added with 25ml of ethanol and 25ml of ether. Phenolphthalein changed into Delivered as indicator and titrated with zero.1M Potassium hydroxide solution.

N = wide variety of ml of 0.1M KOH Qw= Wt. of oil.

Comparative study of herbal hair oil



Fig 14: Marketed product for comparative study

Herbs are used for beautification purpose of body, preparation of cosmetics, flavouring and colouring agent. Hair plays a vital role in personality of human and we use a lots of cosmetics product for the care of hair. The study aims reviewing the importance of herbal oil and their use in the common hair problem such as baldness, hair fall, hair dryness, dandruff etc. Various beauty and cosmetic products are used which contain herbs to give young and charming look. Various herbal ingredients are used in herbal hair formulation; they provide essential nutrients such as vitamins, antioxidant, etc. Herbal hair oil has been widely used for nourishment of hair and for the protection of hair from hair fall and hair damage.

Product highlights

- 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

Ingredients Of Marketed Product

Amla	5 %
Almond	2 %
Garliac	1 %
Henna Powder	2 %
Cator oil	25 %
Neem	2 %
Curry Leaves	2.5 %
Coconut Oil	Q.S

Batch no: 35

MFG date: 20/03/2025

MRP: 350.00 Rs

Advantages of herbal hair oil:

- To Relaxing massage for healthy scalp

- To Control frizzy hair
- To Enhance hair growth by stimulating hair follicles and improving blood circulation to the scalp.
- To Reduce hair fall by strengthening hair roots and minimizing damage from environmental factors .
- To Provide essential nutrients to the hair and scalp, improving hair texture, shine, and manageability.
- To Provide essential nutrients to the hair and scalp, improving hair texture, shine.

7. RESULT AND DISCUSSION

Evaluation Test -

Evaluation Table No. 1

Sr. No.	Parameter	Description of formulated product	Description of Marketed product
1.	Acid value	1.17	1.35
2.	Saponification value	19.15	22.50
3.	Specific gravity	0.842g/ml	0.96 g/ml
4.	Ascorbic acid test	Yellow to blue	Yellow to blue
5.	Saponin test	Foam	Foam
6.	Sulphur Test	Paper Change to Brown	Paper Change to brown

Evaluation Table No. 2

Sr. No	Evaluation Parameter	Decription of formulated product	Decription of formulated product
1.	Colour	Greenish yellow	Greenish
2.	Odour	Aromatic	Aromatic
3.	PH Value	6.2	5.3
4.	Sedimentation	No Sedimentation	No Sedimentation
5.	Grittiness	Smooth	Smooth
6.	Primary skin Irritation Test	No irritation	No irritation

RESULT AND DISCUSSION:

1.The evaluation of herbal hair oil were performed successfully and mentioned in above table
 2.It was found that the herbal hair oil was of greenish yellow colour and Aromatic smell
 3. the herbal hair oil were taken for physical analysis based on colour, odour, PH determination, grittiness, sedimentation, primary skin irritation test. The other test performed as acid value was found to be 1.17, saponification value was found 19.15, specific gravity was 0.842.

4. Based on analysis the formulated Herbal oil was pure and good quality.

5. Herbal oil that are formulated offers numerous essential nutrients required to keep everyday feature of sebaceous glands and promotes natural hair growth.

8. CONCLUSION:

This study on Herbal hair oil is a great alternative to chemical-based hair products, as every ingredient used has numerous benefits and all the parameters indicate that they are within acceptable



limits, this oil will aid in promoting healthy hair development, turning grey hair black, preventing dandruff, and producing glossy hair. So, this Herbal Hair oil has minimal or no side effects. Formulated herbal hair oil having minimal or no side effects. All the values of evaluation showed that they are within the acceptable limit. Hence, it is concluded that the formulated hair oil provides good hair growth, protection from dandruff, gives lustrous and shiny hairs as compare to marketed formulation.

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