

Herbal Hair Care Cosmetics: A Review

Kiran Sadanand Sanap¹, Sonali S. Sonawane², Abhijit R. Rode³

¹Student at Pratibhatai Pawar College of Pharmacy, Shrirampur

²Assistant professor at Pratibhatai Pawar College of Pharmacy, Shrirampur

³Lecturer at Pratibhatai Pawar College of Pharmacy, Shrirampur

Abstract

The conception of Hair care cosmetics dates back to ancient humanity and civilization. Generally, herbal hair care cosmetics are also appertained to as natural cosmetics. Herbal hair cosmetics are prepared, using colorful cosmetic constituents to form the base in which one or further herbal elements are used to treat various hair affections. Hair is an important part of the mortal body that protects the crown. Hair conditioners, soap, and hair oil painting are herbal hair care products that are applied to the hair and latterly used for sanctification, exertion, and irrigation It's used to make the hair cadescent and smooth. Increases the luster of hair. substantially prevents hair breakage, reduces split ends, and improves manageability. Its main purpose is to reduce disunion between hairs, making brushing and digging easier, and used for crown treatments.

Keywords: Hair, hair care, hair cosmetics, herbal hair oil , herbal shampoo, herbal conditioner, herbal color

INTRODUCTION

Currently, in the whole world, there's a turn to return to the use of herbal products and to borrow a natural way of life. People prefer natural food, herbal hair cosmetics, herbal drug formulations, and natural curing process for a healthy life. The option of herbal hair care cosmetics has increased to number s crowds in the particular care system and there's a great demand for herbal hair care cosmetics. All this happen due to the inward ate use of synthetsynthetic-basededs, synthetic chemicals, chemical coloring, and their reduced products in the last bone and a half-century; their product and operation beget rental he hazards with several side goods leading to ultitudinous conditions. Important mindfulness is created amongst consumers for herbal product and their better quality, which led to further use of herbal hair cosmetics.(1) Herbal cosmetics are one of the most potent and effective areas of ornamental technology. It's used for beautifying and overall enhancing the mortal personality. Herbal products are characterized by better tolerability compared with other synthetic products. This study aimed at reviewing the significance of herbal hair oil painting for the curing of common hair problems similar as baldness, alopecia, hair fall, Argentine hair, blankness, and most common dandruff. Herbal products gain fashionability worldwide because it's lack of side goods compared with synthetic products.

Hair Anatomy:

Hair is an intertwined system with specific chemical and physical gets It's a complex structure composed of multiple morphological factors that work as a unit. All hair contains a shaft and a root. The shaft is the part of the hair which is visible that attaches to the skin. Hair roots are present inside the skin and reach

the deeper layers of the skin. It's girdled by hair follicles(coverings of skin and connective towel) that are also connected to sebaceous glands. Each hair follicle is connected to a small muscle(pillar muscle) that can unbend the hair. Numerous letters also end in hair follicles. These jitters all hair movement and are sensitive to indeed the fewest earth. At the hairline, the hair root spreads into a circular bulb. There's a dermal papilla inside the hair bulb, which supplies blood to the hair root. New hair cells are continuously Ming in the hair bulb near the papilla. The hair shaft of mammals is divided into three main regions .a) Cuticle b) cortex c) medulla.

HAIR ANATOMY

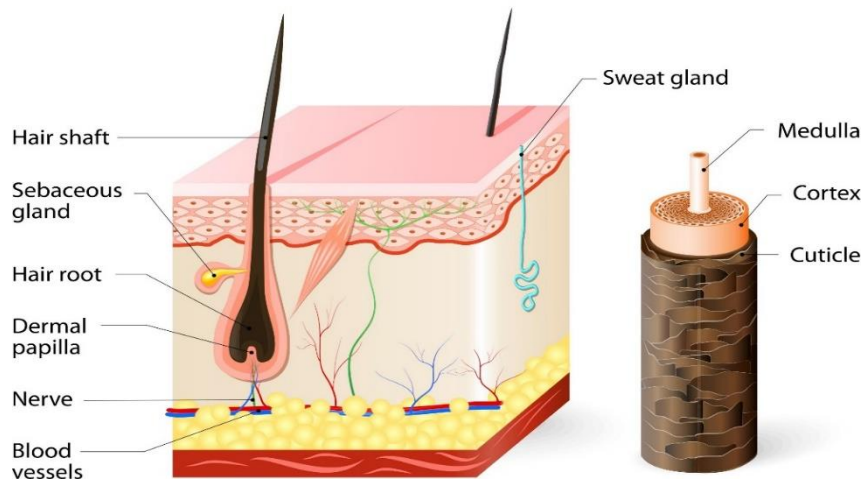


Fig.1 Hair Anatomy

A]Cuticle

The cuticle of the hair is naturally made with a substance called sebum, which protects the hair from drying out. So, when the cortex of the hair penetrates, it removes the defensive sebum. The cuticle is open and natural. must be closed to return to a healthy state. The cuticle made up of lapping cells like fish scales or roof penstocks, is the defensive subcaste of the hair that fast own. A healthy cuticle is smooth and flat. It includes luster to the hair and protects the inner layers from damage. It also minimizes the movement of humidity in and out of the beginning cortex, maintaining the hair's humidity balance and inflexibility. still, chemical treatments and exposure to the sediments lift the cuticle and upset this balance, making hair dry and brittle.[5]

B]Cortex

The cortex makes up the bulk and color(color) of the hair. It consists of long beaches of keratin held together by disulfide and hydrogen bonds. Cortical health is largely dependent on the integrity of the cuticle that protects the cortex. The cortex is the largest part of the hair, counting for roughly 75 of its weight. The cortex, present in the middle of each hair fiber, is composed of long, tightly packed keratin spindles stabilized by disulfide bonds. These keratin spindles are arranged crescively starting from the lowest structure, the keratin protein itself, to the largest and final structure, the cortex itself. The cortex gives strength to the hair and also houses melanin grains. These are the color packets responsible for the color of The cortex also responsible for giving the hair its shape and texture, performing in it being either straight, crimp, coiled .[6]

c) Medulla

The medulla is the inner subcase of the hair shaft. This nearly unnoticeable subcase is the softest, most fragile, and serves as the gist or core of the hair.

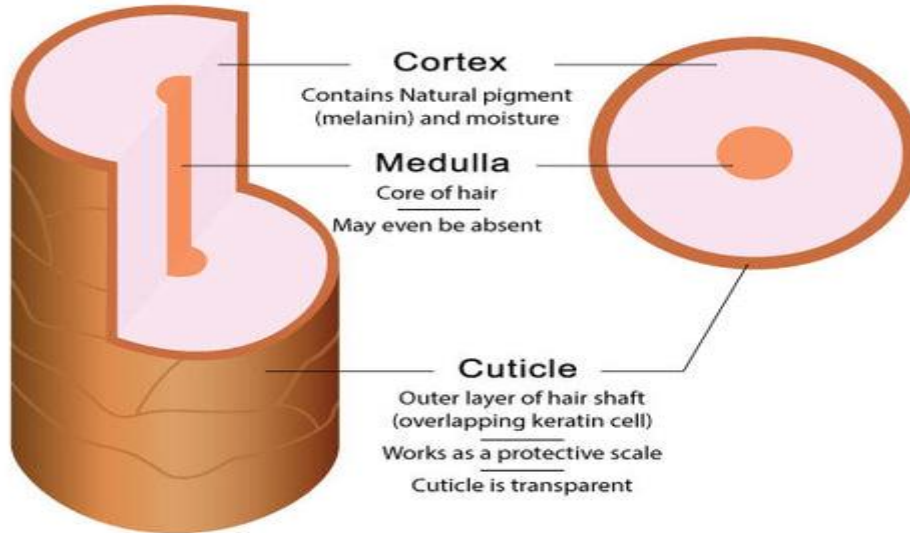


Fig.2.Hair shaft

HERBAL HAIR CARE COSMETICS INCLUDES;

1. HERBAL HAIR OIL
2. HERBAL HAIR SHAMPOO
3. HERBAL HAIR CONDITIONERS
4. HERBAL HAIR DYES

1.HERBAL HAIR OIL

Composition Of Herbal Hair Oil

1.Aloe Vera pulp

It contains vitamins A, C, and E. All three of these vitamins help to cell turnover, promoting healthy cell growth and shiny hair.



Fig 3.Aloevera pulp

2.Tulsi

Tulsi helps maintain moisture in your scalp and enhances blood circulation, reduces itchininess and dryness, strengthens the hair follicles and makes the roots healthy.



Fig.4 Tulsi

3.Hibiscus

Hibiscus is a natural powerhouse of amino acids, which provide your hair with nutrients that increase hair growth. Amino acids are great at producing keratin, a building block of hair that binds the hair and prevents breakage.



Fig.5 Hibiscus

4. ShikeKai

Shikakai cleanses your crown[scalp] gently and increase sebum secretion which helps reverse the dryness of your crown.



Fig.6 Shikekai

5. Coconut oil

Coconut oil can increase the health and condition of your hair. It helps to prevent protein loss in your hair. It is beneficial to apply it to hair both before and after washing it.



Fig.7 Coconut oil

6. Almond oil

Almond oil has the essential fatty acids that can help in moisturizing the crown[scalp] and strands, which make healthy smooth hair that has a soft texture. Almond oil, when used daily, penetrates to a cellular level to help soften the hair at the roots.



Fig.8 Almond oil

7.Fenugreek

Fenugreek enhance blood circulation and helps reduce dandruff. Fenugreek seeds are rich in protein, and nicotinic acid content,treats dryness of hair, controls balding, and hair thinning.



Fig.9 Fenugreek

8.Jasmine Oil

soothes dry skin and helps seal the hair cuticle, which may help help breakage and encourage new hair growth.



Fig.10 Jasmine oil

Requirements of a Herbal Hair Oil:-

1. It should be fluently removed on irrigating with water.
2. It should leave the hair-dry, soft, and lustrous with good manageability and minimal Fly down.
3. It should impart a pleasant smell to the hair.
4. It shouldn't beget any side effects to the skin or eye.

BENEFITS OF HERBAL HAIR OIL

Protects the crown.

Prevents hair loss.

Promotes blood rotation in the crown.

Provides shine naturally, Protects your hair from damage similar as breakage and split ends

Herbal hair oil painting contains vitamins and micro-nutrients that act as food for your hair.

No matter, if your soap and conditioner is made up of how numerous good constituents but they cannot deeply nourish your crown the way a hair oil painting does.

Regular use of natural canvases cures the problem of unseasonable slate hair.

Nourish the crown and hair. Keep the crown doused Make hair brilliant and softer Stimulate hair growth. Make hair brilliant and softer.(3)

List of ingredients and Importance in the Formulation of Herbal Hair Oil:-

Different ingredients used in the formulation of herbalhair oil are presented in Table 1 .

As following,[6]

Table-1

Sr.No	Ingredient	Importance/role
1	Alovera Pulp	Boosting scalp health
2	Tulsi	Antibacterial
3	Hibiscus	Control premature Graying
4	Shikakai	Anti-dandruff
5	Fenugreek	Hair growth
6	Coconut oil	Moisturerise dryhair
7	Almond oil	Treat hair loss andstrengthens the hairs
8	Jasmine Oil	Conditioning agent, Provides good odor
9	Vitamin E	Preservative

Table .1. List of ingredients and Importance in the Formulation of Herbal Hair Oil

Method Of Herbal Hair Oil Preparation:-

- 1]The parts of plants like Shikakai (powder), and Fenugreek (seeds) were collected from the local market.
- 2]Aloe Vera pulp (Leaves), Tulsi (Leaves), and Hibiscus (flower), are dried in sunlight, and converted into coarse powders.
- 3]The extracts were prepared by decoction method & the prepared extracts were stored in well-closed containers.
- 4] Precisely all the dried and fresh herbs Tulsi, Hibiscus, Shikakai, Aloe Vera pulp & Fenugreek were weighed and triturated in the mortar & pestle and mixed with Almond oil.
- 5]The above content was boiled for 15 min and filtered through a muslin cloth.
- 6] To the filtrate, coconut oil was added to the makeup volume.
- 7] Finally, a small amount of flavoring agent (Jasmine oil) was added to the oil.
- 8] Vit E was used as a preservative.
- 9] It was placed in a closed container.[7]

Evaluation of Herbal Hair Oil:-

The formulated herbal hair oil has physical and biological evaluation.

Sensitivity Test:-

The herbal hair oil was applied on 1 cm of skin the of hand and make exposed to sun for 4-5 min.

PH:

The pH of herbal hair oil was determined using a pH meter.[7]

VISCOSITY:

The viscosity was determined using Ostwald's viscometer[5]

Specific gravity:

The specific gravity bottle was rinsed with distilled water, dried in a hot air oven for 15 minutes, cooled, capped, weighed, and noted as (a). Now the similar specific gravity bottle was filled with the sample, capped, and again weighed (b). The weight of the sample per milliliter was determined by subtracting the weights[8]

2. HERBAL HAIR SHAMPOO:

Shampoos are primarily the most extensively use ornamental products for sanctification hairs and crowns in our regular life(9). Herbal shampoo are ornamental medications that with the use of traditional ayurvedic sauces are meant for sanctifying the hair and crown just like the regular shampoo.(10)

HISTORY

A most effective early soap was made by boiling Sapindus with dried amla(Indian gooseberry) and a selection of other gravies, using the implanted extract. Sapindus, also known as soapberries or soapnuts, a tropical tree wide in India, is called Kuna(11). The extract of soapberries prepares a lather which Indian handbooks called phenaka. It made the hair soft, fulgent, and manageable. Other products helpful for hair sanctification were shikakai, hibiscus flowers, ritha, and arappu. A guru Nanak, the author and the first

guru of Sikhism, made references to the soapberry tree and cleanser in the 16th century.(16) sanctification with hair and body champu(massage) during regular bath was an indulgence of early social dealers in India. When they returned to Europe, they introduced the lately learned habits, including the hair treatment they called cleaner(17)

Ideal properties of Herbal Shampoo;

1. It should fully remove dust or soil, inordinate sebum or other substances, and loose corneal cells from the hair.
2. It should produce a good quantum of froth to meet the cerebral conditions of the stoner.
3. It should be fluently removed on irrigating with water.
4. It should be made the hair non-dry, soft, and lustrous with good manageability and minimal fly down.
5. It should conduct an affable scent to the hair.
6. It shouldn't beget any side goods vexation to the skin or eye.
7. It shouldn't make the hand rough and chapped.(18)(19)

LIST OF HERBAL INGREDIENTS:

Sr. Drugs name	PARTS	Medicinal use
1. Neem powder	Leaves	Antibacterial agent
2. Hibiscus flower	Flower	Conditioning agent
3. Aloe vera- powder	Leaves	Moisturizing agent
4. Shikakai powder	Pods	Detergent
5. Amla powder	Fruit	Anti-dandruff agent
6 Soap Nut	Nut	Foaming agent

TABLE 2. LIST OF HERBAL INGREDIENTS, THEIR PART,S AND MEDICINAL USE

Preparation of extract

About 100 g of each powdered plant material, Neem, Hibiscus flower, Aloe vera, Shikakai, Liquorice, Amla, and Cleaner nut were homogenized. The powdered material was uprooted with distilled water by boiling it for 4 h. The excerpt of each plant material was separated and faded.

Formulation of the herbal shampoo;

Formulation of the herbal shampoo was done as per the following step.

To the gelatin result(10), added the herbal excerpt and blend by shaking continuously at the time period of 20min. 1 ml of bomb juice was also added with nonstop shifting. To enhance the aroma in the

expression, a sufficient volume of essential oil painting(rose oil painting) was added and make up the volume to 100 ml with gelatin.

Evaluation of herbal shampoo

The set expression was estimated for product performed Ability which includes organoleptic characters, pH, physicochemical characterization, and for solid content. tests were performed for face pressure, froth volume, froth stability, and wetting down time using standard protocol.

pH determination-

The pH of the set herbal shampoo in distilled water(10 v/ v) was estimated by means of a pH analyzer at room temperature(20)

Surface tension measurement-

The set shampoo in distilled water(10 w/ v) was estimated for face pressure using a stalagmometer at room temperature(22)

Testing of wetting-

Wetting Down time was calculated by noting the time needed by the oil paper to sink fully(11). An oil-paper importing 0.44 g was cut into a slice of periphery measuring 1 inch.

Over the shampoo (1% v/v) face, the oil paper slice was kept and the time taken for the paper to sink was measured using the sandglass

Foam stability test-

The stability of the head was determined using the cylinder shake system.

About 50 ml of formulated soap(1) result was taken in a graduated cylinder of 250 ml capacity and shaken 10 times round by round.

Froth stability was measured by recording the head volume of the shake test after 1 min and 4 min, singly(15).

The total head volume was calculated after 1 min of shaking.

3.HERBAL HAIR CONDITIONER:

Different Types of Constituents are needed to make a good herbal conditioner. Each of these constituents plays a specific part in the conditioner formula. Hair products are largely valued these days. May contain herbal extracts similar as fenugreek extract. Fenugreek extracts plays an important part in reducing hair loss and its exertion mode. exertion, uncurling, furnishing good hair health and, most importantly, anticipated safety benefits. problems. Because it doesn't contain substances. Herbal conditioners were estimated for physicochemical parcels similar as pH, solids content, rheological measures, soil dispersibility, raging capacity and stability, wetting down time, and face pressure

HOW TO USE HERBAL HAIR CONDITIONER:

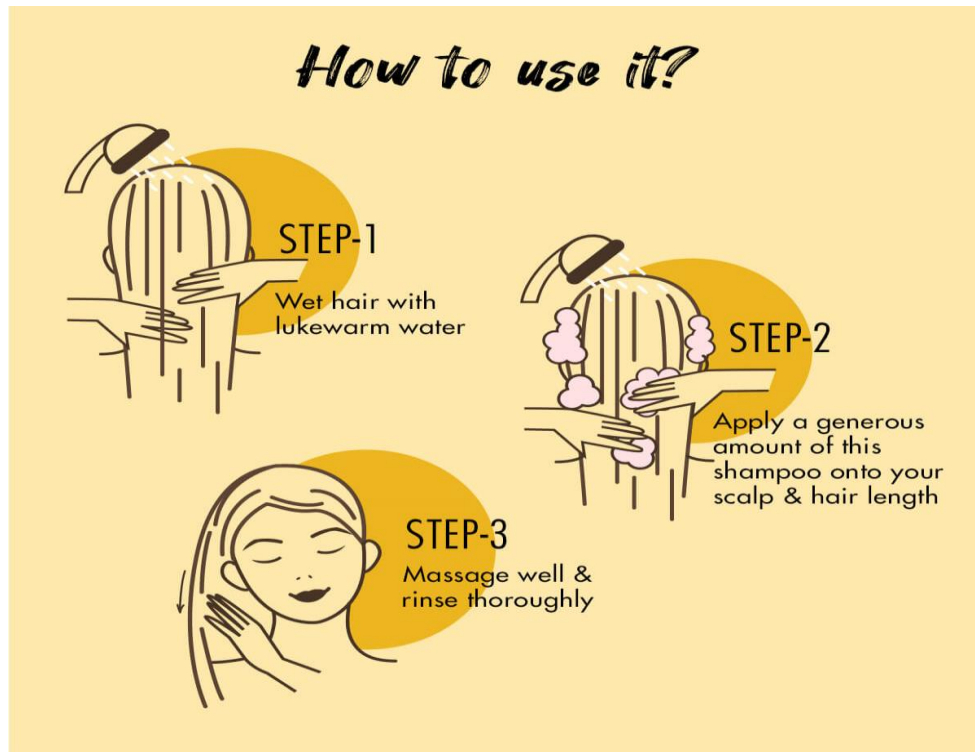


FIG.11 How to use conditioner

OBJECTIVES OF HERBAL HAIR CONDITIONER;

1. To Designed to add shine to your hair.
2. To Increase hair growth.
3. To Makes hair more manageable and easier to comb.
4. To Leaves hair soft and moisturized.
5. To Restore damaged hair.
6. To straighten curly hair.
7. To revitalizes and replenish hair strands.

Advantages of herbal conditioner:

- 1) Gives hair shine and softness.
- 2) Reduce split ends.
- 3) Improve manageability.
- 4) Prevent hair breakage.
- 5) Protects hair from chemical and mechanical damage.

Disadvantages of another conditioner available in the market:

1. dangerous to hair and generally poisonous.
- 2) Causes eye irritation.
- 3) Other conditioners substantially contain Sodium Lauryl Sulfate and Ammonium Lauryl Sulfate.
- 4) They dry out the hair shaft and cause split ends and ringlet

INGREDIENTS AND THEIR ROLE:

Sr.no	Ingredient	Role of ingredient
1	Fenugreek seeds	Nourishes the hair
2	Hibiscus flower	Natural conditioner
3	Curry leaves	Promote hair growth
4	Mint oil	Antimicrobial agent
5	Aloe Vera	Conditioning Agent
6	Glycerin	Moisturizer
7	Rose water	Perfume
8	Almond oil	Smoothing Agent
9	Citric acid	pH adjuster

TABLE 3. INGREDIENTS AND THEIR ROLE

1. Fenugreek:

It helps to regain hair shafts damaged by dehydration. A rich source of iron and protein, two nutrients demanded for hair growth. Fenugreek contains mucus fibers that absorb moisture considerably. This will meliorate the shine and soft texture of your hair. Fenugreek contains a great amount of fiber, phospholipids, glycolipids, oleic acid, and linolenic acid.[28]



fig no:12. fenugreek seed

2. Hibiscus Flower:

In herbal, hibiscus is one of the most famous herbs for enhancing hair growth. Hibiscus flowers and leaves contain large amounts of mucus that act as a natural conditioner. Crushed hibiscus flowers and leaves feel slimy thanks to this natural conditioner. The antioxidants and vitamins in hibiscus help produce melanin, the natural pigment that gives hair its natural Dye.[29]



Fig :13.hibiscus flower

3.Curry Leaves:

Curry leaves include vitamin C, vitamin B, protein, and antioxidants, all of which use to cell regeneration and enhance healthy blood flow to the blood vessels of the scalp. The properties help promote hair growth and skin regeneration and improve the overall health of the scalp. Applying the constituents topically rejuvenates hair follicles and enhances hair growth. [27]



Fig. 14. Curry leaves

4.Mint oil:

One of the best sources of carotenes and antioxidants, it provides natural antibacterial and antifungal parcels that help exclude dandruff and other scalp problems. Peppermint oil painting is rich in pulegone and Mentone. It's contained in and strengthens the hair roots to help hair loss. It penetrates into the hair follicles, stimulates blood inflow, and enhances further growth. It helps soothe itchy and dry scalp. [24]



fig .15. mint oil

5. Aloe Vera Gel:

It contains numerous active constituents and minerals that help strengthen your hair. It protects against ultraviolet(UV) radiation that comes from the sun. Aloe Vera contains numerous active constituents and minerals that help strengthen hair. It contains adipose acids and amino acids and is rich in vitamins A, B12, C, and E. Aloe Vera cleanses the hair shaft veritably and effectively. Aloe Vera contains proteolytic enzymes that regain dead skin cells on the scalp. [27]



fig .16. aloe vera gel

6. Glycerin:

Glycerin is a humectant. This means that it can actually absorb moisture from the air, keeping your hair moisturized and healthy. It is a popular ingredient in skin and hair care products because of its great effect. Glycerin's antibacterial properties help treat itchiness caused by dryness and dandruff [24]



Fig.17.Glycerine

7. Rose Water:

Rosewater softens hair in many ways. Rosewater is a mild astringent and can help reduce oiliness and dandruff. Rosewater acts as an astringent on the scalp, tightening the skin and preventing excess sebum production. By reducing oil production, rose water prevents the formation of dandruff on the scalp. [30].



Fig.18.Rosewater

8. Almond Oil:

Moisturizes the scalp and hair for healthy, straight hair. Being rich in B-7 and biotin, almond oil painting helps keep hair healthy and strong. Oiling is considered the most salutary for promoting hair growth. puffing improves blood inflow to the roots, promotes hair growth, and makes hair stronger.[29]



Fig.19.Almond oil

9. Citric acid:

Citric acid is known to balance the pH of the scalp as hair care products make the scalp more alkaline. Citric Acid is used as a natural alternative in hair conditioners. Rinsing your hair with diluted citric acid has a conditioning effect on your hair, leaving it silky and shiny.[24]



Fig.20.Citric Acid

Evaluation Parameter:

Formulations of herbal hair conditioners were made and evaluated by the following organoleptic properties and physicochemical parameters.

1)pH test:

Soak the pH strips in the herbal conditioner solution and wait for the color to change. Determine the pH by comparing the color of the pH strip to the color chart. [23]

- pH of hair strands: 3.6 to 5.5
- pH of hair conditioner: 3 to 7

2)Dirt dispersion test:

Dirt dissipation test Two drops of conditioner were added to a large test tube containing 10 ml of distilled water, one drop of Indian essay was added, and the test tube was limited and shaken 10 times. The quantum of essay present in the froth was rated as none, light, medium, or heavy.[24]

4)Stability testing:

Store the herbal hair conditioner at 37 °C for 6 weeks and observe changes in color and density.[24]

5)Moisturizing time determination:

Appropriately sized 1 g, 20 cm³ size were placed on the face of 60 ml of colorful adulterated conditioners and the complete sinking time of the ball in the conditioner was measured. [25]

6)Viscosity:

A Brookfield rotating spindle viscometer was used for viscosity testing. To measure viscosity, the measuring body (spindle) is immersed in oil and rotated at a given speed.[23]

7)Wetting time:

The wettability of surfactants depends on their concentration in the formulation and is commonly tested to assess surfactant effectiveness. Wet time was determined by measuring the time it took for the disc to sink into the conditioner.[23]

8)Physical appearance:

To check the organoleptic properties of the conditioner.

- 1.Color
- 2.Odour
- 3.Texture

4. HERBAL HAIR DYES;

Hair coloring or dyeing, practices of changing the hair color. The main reason for this is cosmetics to recover white and slate hair, to change the regarded as farther fashionable or desirable, The set herbal color contains all the probity of natural ingredients. The perfect blend of herbals also acts as a hair growth enhancer and hair nourisher.

Advantage

1. Natural appearance of the use of real human hair fiber.
2. May be styled as natural hair.
3. Able to color and perm.
4. Moves like natural hair.
5. Less susceptible to heat damage.

Disadvantages

1. More expensive.
2. Need more maintenance and care.
- 3 Requires styling.
4. May be heavier in weight than synthetic wigs, which may lead to itching.
5. More susceptible to sunlight fading and environmental damage.

Methods of hair dye preparation

1. Weighing:

Next, a worker weighs out the component for the batch. For some constituents, only a small amount of is necessary in the batch. But if a veritably large batch is being made, and several constituents are demanded in large quantities.

2. Mixing:

a formula in which nopro-mixing is needed, after checking and importing, the constituents are simply mixed. The constituents are fully mixed with each other.

3. Filling :

The finished batch of hair color products formed place in the stuffing area. also, the measured amount of hair color on the importing balance.

4.Packaging :

From the filling area, the plastic bag is taken to the packaging line. The packaging complete and the labelling of the product write the with full information. Then the product are them taken to the warehouse to await distribution. Role of ingredients used in the formulation :

1)Shikakai:

It consists of Lupeal, Spinasterol, Lactone, Hexacosanol, Spinasteron, Calyctomine, Racemase- Oleanolic acid, Lupenone, Betulin, Betulinic acid, Betulonin acid. The excerpt attained from its capsules is used as a hair cleaner and for the control of dandruff. Shikakai or acacia concinna, has a rich quantum of vitamin C, which is salutary for hair. Shikakai naturally lowers the pH value and retains the natural oil of the hair and keeps them shiny and healthy. It's also effective in strengthening and conditioning hair, Amala, Retha, and Shikakai respects each other, thus, they're mixed together to have healthy and lustrous hair. [32].



Fig.21.Shikakai

2]Coffee

In hair colorants, herbs can be used in the form of powder, aqueous extract or their seed oil to impart shades of various color varying from reddish brown to blackish brown. The herbal drugs like coffee powder obtained from its seed are used as hair colorant. [31]



Fig.22.Coffee

Custard apple pulp powder :

It also helps to deal with unseasonable greying of hair in both manly and womanish. Custard apple is a good Herbal source of copper and gives hair the deep melanin color . To have thick, long, candescent and lustrous hair, one can apply the fruit paste on the hair loss when applied on the scalp. The quantum of iron in custard apple enhances blood rotation, in the scalp stimulating the follicle to hair growth promotion. [34].



Fig.23.Custard apple

Evaluation of the herbal hair dye :

The prepared herbal hair dye was evaluated for its various parameters such as organoleptic, physico-chemical, phytoconstituents, and the rheological aspect

Organoleptic evaluation :

Organoleptic characteristics for various sensory characteristics like color, odor, taste, etc. The raw drugs and powders were separately studied by organoleptic and morphological characters like color, odor, texture, and appearance.

Stability test

Stability testing for the prepared formulation was performed by storing it at different temperature conditions for the time of period of one month. The packed glass vials of formulation were stored at different temperature conditions for the physical parameters like color, odor, pH, texture, and smoothness

Patch test

This usually includes dabbing the small amount of aqueous solution of hair dye behind the ear on or inner elbow in an area 1sq.cm and leaving it to dry. The sign of irritation or feeling of non-wellness is noted, if any. Measured and small quantities of the prepared hair pack was applied to the specific area for the fixed time. Irritancy, redness and swelling were checked and notice for regular interval up to 24 hours if any

Conclusion:

From the above studies, it can be concluded that Herbal Hair Care Cosmetics Such as Herbal hair oil, Herbal hair Shampoo, Herbal hair conditioner, And Herbal hair Dyes exhibit excellent nourishing and conditioning properties. Conditioners are applied to the hair after washing and are intended to smooth hair, improve shine and shine, and repair damaged, mechanically damaged, and weathered hair.

The advantage of herbal-based cosmetics is their non-toxic nature. It helps to treat dandruff by removal of excess oil from the scalp

Herbal Hair cosmetics are free of chemical ingredients and are therefore safe to use on all scalp types. Hair care cosmetics contain ingredients that strengthen, smoothen and protect and promote shiny, healthy hair. pH value of hair rinse, dirt dispersion test, determination of wetting time, Cleaning efficacy, and stability have been tested and has been found to be safe and effective to use

Reference:-

1. A Book of Cosmetics science VII.
2. https://en.m.wikipedia.org/wiki/History_of_cosmetics.
3. Review on stability guidelines by ICH and USFDA guidelines for new formulation and dosage form.
4. https://www.researchgate.net/publication/334491247_ICH_guidelines_for_the_stability.
5. https://en.m.wikipedia.org/wiki/Hair_oil
6. https://en.m.wikipedia.org/wiki/Drugs_and_Cosmetics_Rules,_1945#:~:text=The%20Drugs%20and%20Cosmetics%20Rules,and%20prescription%20of%20each%20schedule
7. <https://sacredearth.in/top-6-benefits-of-using-herbal-hair-oil/>
8. Drug and Cosmetic Act pdf.
9. Ishii MK. Objective and instrumental methods for evaluation of hair care product efficacy and substantiation of claims. In: Hair and hair care. New York: Marcel Dekker, Inc; 1997. p. 261-302
10. Arora, P., Nanda, A., Karan, M. 2011. Shampoos based on synthetic ingredients vis-à-vis shampoos based on herbal ingredients: A review. Int. J. Pharma Sci. Rev. Res. 7, pp.41.
11. Sanskrit Lexicon, Monier-Williams Dictionary (1872). 4. Spoken Sanskrit, University of Koeln, Germany.
12. Rahman, History of Indian Science, Technology and Culture at Google Books, Oxford University Press, ISBN 978-0195646528, page 145 © 2021 JETIR May 2021, Volume 8, Issue 5

- www.jetir.org (ISSN-2349-5162) JETIR2105847 Journal of Emerging Technologies and Innovative Research (JETIR) www.jetir.org g375
13. "Tamil Nadu Medicinal plants board" (PDF). Archived from the original (PDF) on July 21, 2011.
 14. "Forestry :: Nursery Technologies". agritech.tnau.ac.in.
 15. Khushwant Singh, Hymns of Guru Nanak, Orient Longman, ISBN 978- 8125011613
 16. Virginia Smith (2007), Clean: A History of Personal Hygiene and Purity, Oxford University Press,
 16. Balsam, S.M., Gershon, S.D., Rieger, M.M., Sagarin, E., and Strianse, S.J.: Cosmetic Science and Technology, 2nd edition, Vol-2, John Wiley India, New Delhi, 2008
 17. Barel, A.O., Paye, M., and Maibach, H.I.: Handbook of Cosmetic Science and Technology, 3rd Edition, Informa Healthcare, New York.
 18. Badi KA, Khan SA. Formulation, evaluation and comparison of the herbal shampoo with the commercial shampoo. Beni-Suef Univ J Basic Appl Sci 2014;3:301-5.
 19. Gaud RS, Gupta GD. Practical Physical Pharmacy. 1st ed. New Delhi: C.B.S. Publisher and Distributer; 2001. p. 81-105.
 20. Mainkar AR, Jolly CI. Evaluation of commercial herbal shampoos. Int J Cosmet Sci 2000;22:385-91.
 21. Klein K. Evaluation of shampoo foam. Cosmet Toilet Mag 2004;119:32-5.
 22. Balaji S. Mirkale, Yogesh R. Harangule, Nandkishor B. Bawage, Shyamleela B. Bawage: Review of Hair Care Products and It's Evaluation 2021; 94
 23. Miss B. Jyothi, Shaguftha Naaz, S. Lahari, D. Anil, A. Gowthami, A. Sreeja: Formulation and Evaluation of Hair Conditioners 2021; 706-715
 24. Meghraj Ashok Patil: Journal of Pharmacognosy and phytochemistry 2019; 36-37
 25. Miss. Landge Komal Baliram Prof. Miss. Aswar.A.R. D.R. Hingne L.D.: Formulation and Evaluation of Hair Conditioner from Custard Apple (*Annona Squamosa*) and Curry Leaves (*Murraya Koenigii*) 2021; 7-8
 26. Divya Bhagwat Khile: A review on Hair Conditioner Containing Curry Leaves, Amla, Aloe vera, Neem & Flaxseed 2022; 637-640
 27. Gholamreza Dehghan Noudeh, Fariba Sharififar, Payam Khazaeli Ehsan Mohajeri and Javad Jahanbakhsh: Formulation of herbal conditioner shampoo by using extract of fenugreek seeds and evaluation of its physicochemical parameters, (2011)2421-2427
 28. Ms. Bageshwari K. Jivrag, Ms. Priyanka S. Zendeekar, Dr. Gajanan S. Sanap Ms. Mayuri R. Jagdhane: A Comprehensive Review on Herbal Cosmetics. Volume 10, (2022)134
 29. Suyog Sunil Bhagwat: Formulation and Evaluation of Herbal Shampoo, (2020) 2865.
 30. Polar M. Dikilitas M. Oztas P, Ali N. Allergic contact dermatitis to pure henna. Dermatol Online J 2009: 1S (1):15.(PMID:19281720)
 31. Mac Dougal Color in food woodhead publishing Ltd 1st Ed. 2002
 32. Kumar KS. Begum A, Shashidhar B, et al. Formulation and evaluation of 100% herbal hair dye. International Journal of Advanced Research In Medicinal and Pharmaceutical Science 2016;(2)
 34. Chandhary G, Lawsonia inermis Linnaeus :A phytopharmacological review. Int J Pharm Pharm Sci. 2016 :(6) :630-48.