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THE REVIEW ON HERBAL FORMULATIONS OF HAIR OIL CONTANING CURRY LEAVES WITH THERE APPLICATION

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ABSTRACT

Hairs is one of the most important for the physical appearance, which is why we undergo so many cosmetic procedures to evaluate nice appearance. Different chemicals, herbal products, certain cosmetic products are always active and have few adverse Effect. The Aim of this study is to determine how well polyhedral hair oil works to treat dandruff and other hair related problems. The mixture contains a number of herbal ingredients, including curry leaves. The essential components required for the sebaceous glands to continue functioning properly are present in all ingredients. Hair oil viscosity, acidity, saponification, and organoleptic qualities were evaluated along with other features. There are different types of hairs occur in every human such curly hair, straight hair, wavy hair.

KEYWORDS: Herbal hair oil, herbs, Evaluation, formulations, hair growth.

INTRODUCTION

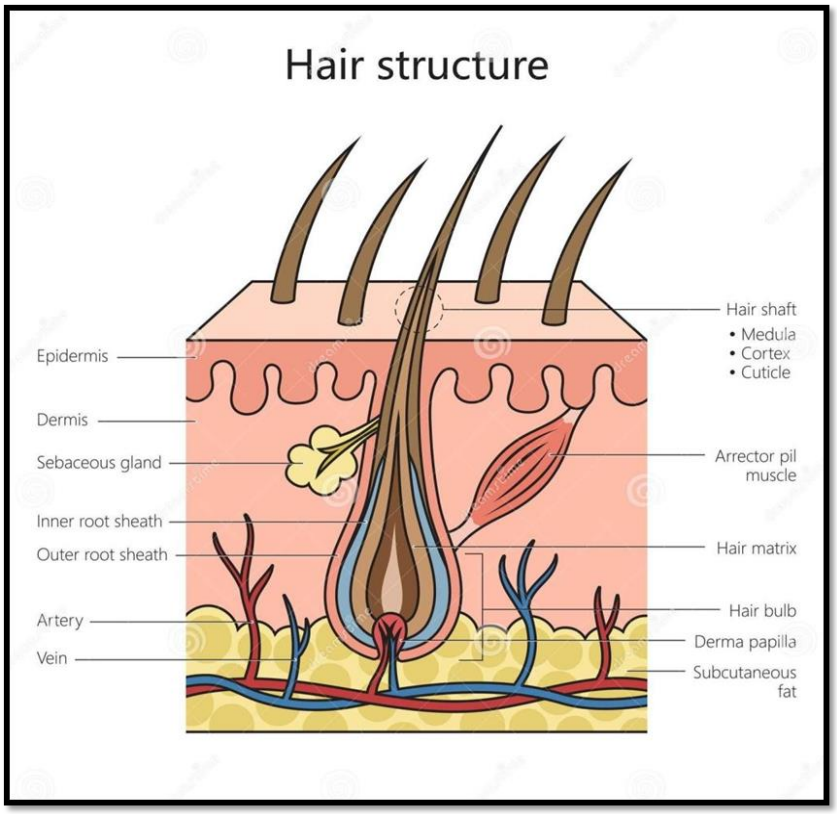
Maintaining general health and wellbeing depends heavily on hair care, with specific emphasis on maintaining and nourishing hair. In India, the custom of combining including herbal remedies in hair care regimens has long been a custom, with roots in the age-old knowledge of Ayurvedic treatment. The *Charka Samhita* states that an According to a reliable Ayurvedic text, regular hair and scalp oiling is necessary to prevent hair loss and encourage the growth of healthy hair. This custom, which includes applying different oils infused with herbs, has persisted over the years. The composition of hair oils, especially those that contain herbs like coconut, castor, Onion and almond oils are intended to treat common hair problems like split ends. Hair thinning and dandruff. Coconut oil is unique among these oils because it can efficiently nourish and penetrate hair strands, making it the perfect foundation for herbal mixtures designed to promote hair growth. These oils' medicinal properties are thought tube improved by their cooling qualities, which not only encourage hair development. modern times, herbal hair care products, including hair serum, her hair oil have

improve hair appearance, it gives natural shine and length due to their natural composition, minimal side effects, and superior efficacy compared to synthetic alternatives. Herbal oils, often combined with additional medicinal herbs, offer an allencompassing solution for maintaining healthy hair by providing essential moisture and nutrients that support the regular function of the sebaceous glands. These oils are not only effective in promoting hair growth but also in restoring vitality[1]

Hair Structure & Hair Follicle

A dynamic, intricate organ embedded in the skin that produces hair is called a hair follicle. Knowing its structure provides insight into hair health, growth, and the contributing factors Essential Elements of a Follicle. Hair Shaft

The outermost layer of keratinized cells that provides protection is called the cuticle and adding to the luster of the hair. Underneath the cuticle, the cortex is a thick layer that contains melanin and keratin assessing the color, elasticity, and strength of the hair. The central core of thicker hairs, known as the medulla, adds to the structure of the hair.



Hair Bulb and Root

Bulb: The keratin-containing bulbous base of the follicle where hair product starts begins, containing keratin producing cells melanocytes responsible for hair colour.

Papilla dermal

A cone-shaped structure at the base of the follicle, abundant in Blood vessels, providing vital oxygen and nutrients to Encourage healthy hair growth. Root capsules, both internal and external the inner root sheath (IRS): Attendants the hair shaft that is growing, icing it maintains its shape. ORS, or external root sheath: transcends the dermis and epidermis, giving up structural support and the presence of stem cells that are essential for hair growth and the form of skin.

The Sebaceous Gland

This gland, which is attached to the follicle, secretes sebum, an oily substance. Poisonous material that nourishes the hair and crown, preventing avoid.

Pili Arrector Muscle

The contraction of a tiny smooth muscle that is connected to the follicle makes the hair stand up (piloerection), which is commonly as "shivers."

Hair Follicles Go Through a Cycle That Contains

Four Phases

Growth Phase Anagen

The active stage, during which hair grows about 0.35 mm every day, lasting between two and eight times.

Catagen (Phase of Transition)

A two-week period during which the hair follicle shrinks and separates from the papilla of the skin, indicating the termination of active growth.

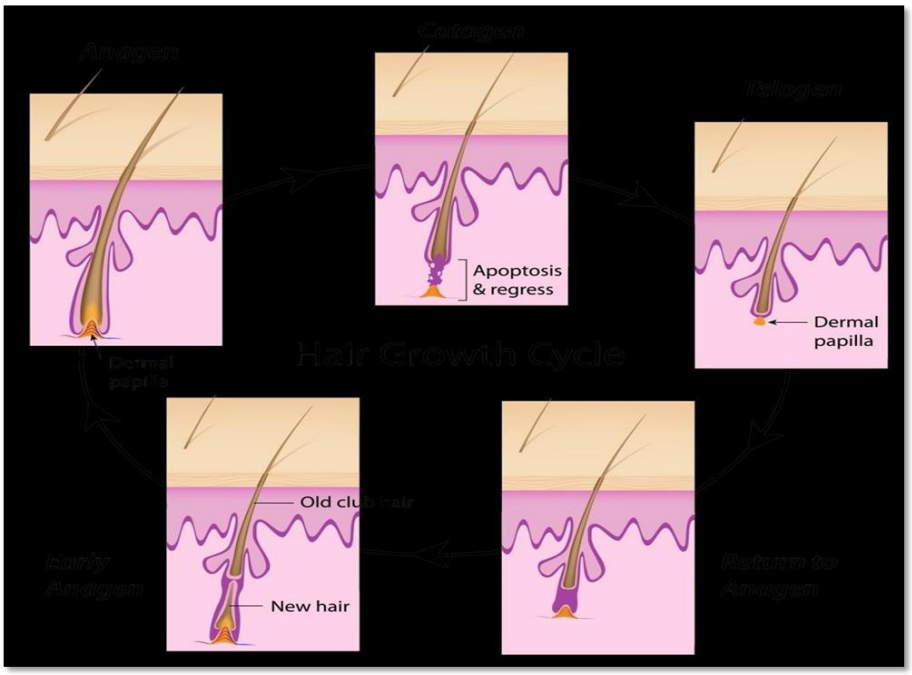
The resting phase, or Telogen

A period of rest that lasted for several months, during which Hair follicles stay dormant and hair growth stops.

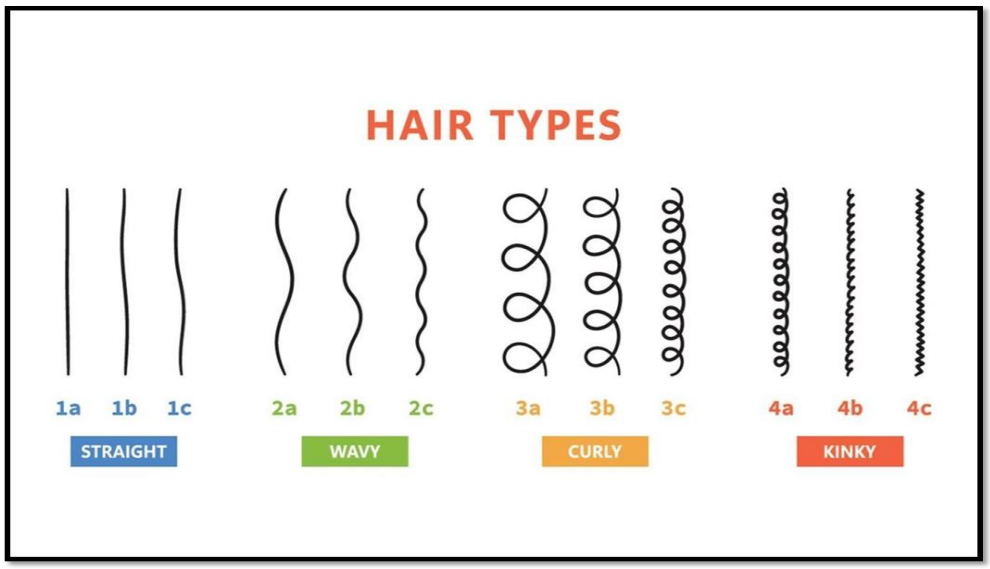
Types of hairs cycle

Exogen (phase of slipping)

The stage in which old hair falls out to make room for newexpansion.Recognizing the complex composition and role of hairicles is necessary to address hair-related businesses andencouraging the general health of the crown and hair.



Types of hairs



HAIR DISEASE

Hair loss is a widespread problem that affects bothboth sexes. Women may notice a noticeable loss of hair.In their 40s and 50s, men may begin to lose their hair, it occurs due to stress, depression, anxiety, diet, exercise.[8]

Hair loss

Dandruff

Scalp

Hair damage

Hair oil

One type of hair care product is hair oils. Products for hair care are definitelyinterpreted as a means of cleaning, reorganizing, nourishing, and preserve the appearance of healthy hair. Painting oil and hair oilis a product for hair care that is used to condition hair. For hair conditions, hair similar to baldness, hair loss, graying of the hair, and dry hair and aids in hair nourishment. human interest in herbal cosmetic care also more efficient when used with a variety of side products. Painting oil made from herbal hair oil is an impo-essential component of a herbal dress. It is best to use herbal oil for painting.and is employed by numerous hair salons. They not only promote encourage hair growth while simultaneously giving them the moisture they need to the crown, enhancing the beauty of hair. Legume oils that contain Hair mixers and legume oil pain relievers are examples of herbal remedies. Ting oil has a number of vital nutrients is that are crucial. For hair care. Encourages the growth of natural hair. The uses of hair oil is Painting oil production rises daily as a result of living morals of individuals. In order to provide to provide the shine and make it more attractive and beautiful. Hair oil painting nat-herbal essences and scents, as well as ural flavors and colors, are incorporated into it.[9]

The advantages of using herbal hair oils

Encourage Hair Growth: Components such as rosemary and it is well known that ginseng increases blood flow to the scalp, stimulating the activity of hair follicles and fostering growth.

To strengthen hair, oils that contain bhringraj and amla are abundant in minerals and vitamins that support hair follicles increase hair strength and lessen hair breakage.

Enhance Scalp Health: Neem and tea tree oils have antibacterial and antifungal qualities, assisting in maintaining Keep your scalp healthy and avoid dandruff.

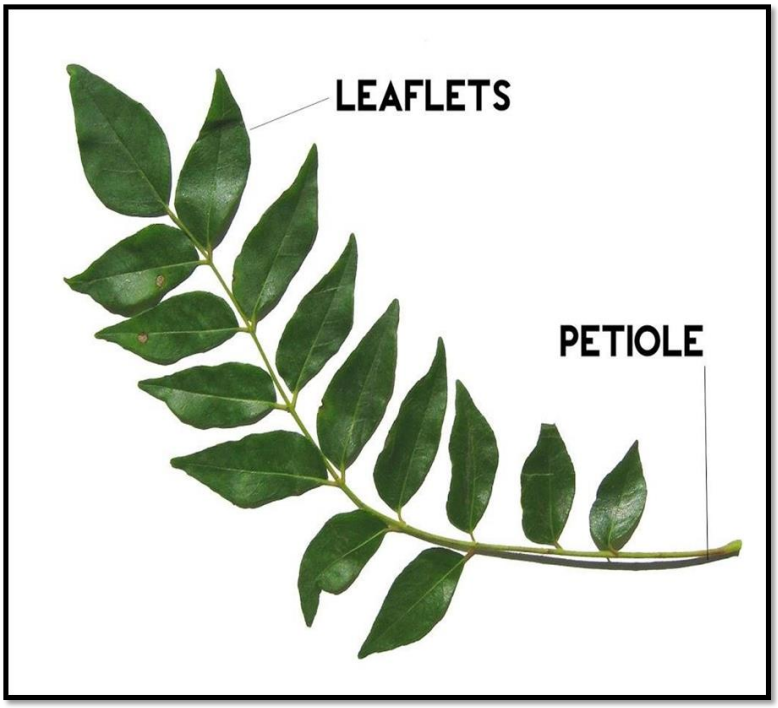
Improve Texture and Shine: Argon and almond oils are renowned for enhancing overall appearance, decreasing frizz, and adding shine.and the hair's texture. Ideal Characteristics of Hair oil:-

- Nourishing and moisturizing to the hair and crown
- Promotes Hair Growth
- Anti-Dandruff and Anti-Itch
- Lightweight
- Natural and Gentle
- Pleasant Aroma

Curry Leaves

Introduction of Curry Leaves

Curry leaves measure between two and four centimeters on average. modestly sized, and and slender, with a pointy narrowing. Every branch of currleaves, grow pinnately along a stem, which is capable of holding up to twenty closely spaced leaves Curry leaves compared to anise, citrus, and asafoetida.lemongrass because of their strong taste and potent aroma. Curry leaves smell nutty and have a subtle, slightly flavorful bite when cooked. Origin: Murraya Koenigii is indigenous to China and Hainan, extending eastward from Sri Lanka and Pakistan India and Sri Lanka. some areas of the It has been extensively cultivated in the and Australia. The number of tropical African countries, including Nigeria, Tanzania, Kenya and India have The primary characteristics that set powder apartinclude its unicellular nature, lack of flavor or order, green color,two-layered palisade, trichomes that are bent or curved, and a portion of its well-formed pericyclic fibers, secretory canals, and a few crystals of calcium oxalate that are prismatic. Pinnate, green leaves are created. The taste of the leaves is harsh and fragrant



Types of Natural oil/Herbal oil
Coconut oil

Coconut Oil Taxonomy

Name in Botany: Cocos Nucifera (L)

Kingdom-Plantae

Section:- Tracheophyta

The Magnoliopsida class

Order:- Arecales

Arecaceae:- Family

Genus Cocos L

Cocos nuciferaan L. is the species.

Part used:- fruit

Plant Description

The light grey, smooth, columnar the cocos nucifera tree's brown trunk is 30 to 40, and a terminal crowns it crown of leaves. There are also dwarf alternatives and tall alternatives. They can grow to a height of 24 to 30 meters. Normally, the trunk is upright but could be bending or bent. It is thin and only marginally enlarging. arched at the base. The leaves are pin-shaped on the broadest section. feather-shaped, nate, and 4–7 m long by 11.5 meters across. The leaf stalks vary in length and are free of thorns between one and two centimeters. Groups of tiny, pale yellow flowers appear from parts of the leaves enclosed in canoe-shaped sheaths. The nut's hollow is partially filled with a substance that is referred to as "coconut milk." Coconut milk in unripe fruit is significant because significant, but it is absorbed over time.[1,5]

The chemical components of Cocos nucifera elements have a range of biological impacts, such as anti-inflammatory, anti-helmintic, anti-cancer, and antinociceptive antifungal and antioxidant qualities.

Neem oil Taxonomy of Neem oil

Botanical Name

Azadirachta lndica

Part Used:-Leaf

Plant description

Height (about 50-65 feet) flowers extremely sweet-smelling, from March to May; white and fragrant; auxiliary; .The third degree of branching of the fluorescence's producing 150–250 blooms, there are male, bisexual, and protandrous flowers on the same person. July and August fruit ripeness; evergreen branches widely separated; long-lasting old foliage there are new leaves. Leaflets: The last leaflet is The petioles are short and often absent.[16] The third degree of branching of the florescence producing 150–250 blooms, with 5–6 mm long and 8–11 mm in diameter; there are male, bisexual, and portentous flowers on the same person. July and August fruit ripeness; long-lasting old foliage There are new leaves. Leaflets: The last leaflet is The petioles are short and often absent.[16]

Chemical constituent: - main chemical component are nimbi, nimbinenem, azadirachitn, azedarach, desacetynimbinene, Nimadi, nimble, quercetin, beta-sitosterol, n-hexacosanol, nimbies and namonin.

Name in Botany: **Prunus Dulciss**

Kingdom:-Plantae

Magmoliophyta:- Division

The Magnolia's class

Order:- Rosales

Rosea:- Family

Purnus:- Genus

P. amygdalus is the species.

Used Seeds in Part

Description of the Plant: Almond trees have a resilient dormant are deciduous and in season. Typically, the trees reach between 3 - 4.5 meters are breathtaking. they have fragrant blooms from late January that are pink to white and have five petals. until the beginning of April.

Chemical Components: Approximately 68% of the oil was 25% should be linoleic acid (C18:), and 25% should be oleic acid (C18:2), with palmitic acid (C16: 0) accounting for 4.6% to 4.8% and a small amount of amo- unto stearic acid (C18:0) and palmitoleic acid (C16:1). Additionally, trace levels of arachidic acid (C20 Applications

1. Almond oil is applied to the scalp.
2. Its antibacterial and fungicidal properties allow it to efficiently counteract the dandruffcausing yeast. Almond oil efficiently hydrates the scalp, cleanses the hair follicle, lessen frizz, and fix broken hair because it absorbs deep within the skin. 0) were found. Apply no more than a dime-sized amount to the hair's end. to hydrate and reduce frizz before drying. Almond oil Vitamin E-rich products are used to treat hair loss. and makes the hair stronger.

THE PREPARATION METHOD

Plant material and the process of extraction Various plants were gathered from the natural environment and were verified by the Department of Botany's Pharmacopoeia Laboratories knowledge of Indian medicine. It is the mixture of curry leaves, hibiscus, fenugreek seeds.[17]

Curry leaves Extraction Process

Required Material

1. Fresh or dried curry leaves material
2. Solvent (such as water, methanol, or ethanol)
3. A stirrer that is magnetic
4. 100–500 ml round-bottom flask
5. Cheesecloth or filter paper, 1997; 13(1): 3-5.

Method of Extraction

1. To get rid of extra curry leaves, thoroughly dry them out dampness.
2. Pulverize the dried materials using a grinder or mortar and pestle curry leaves to a consistent, fine powder.
3. Weigh the powder: Weigh the curry leaf powder (for example,2-4 g).
4. Add solvent: Include the solvent (ethanol, for example) in the round-bottom flask, making certain that the curry powdered leaves areentirely covered.

Magnetic stirring: Place the stirring bar in the flask and position the magnetic stirrerunderneath. Set the stirrer to a moderate speed (e.g., 200-400 rpm).

6. Extraction: Allow the mixture to stir for 25-30 min, depending on the desired extraction efficiency. The solvent is going to the curry leaves' bioactive ingredients.
7. Filteration: Turn off the stirrer and use a filter to filter the mixture.To separate the solids from the liquid, use cheesecloth or filter paper.aid extract.
8. Storage: Move the neem leaf extract or oil that was extracted to a dry, spotless glass container. Keep it somewhere dark and cool.

METHOD OF FORMULATION

Step 1: Accurately measure all the extract of all API such as curry leaves and transfer to heat resistance to glass wear. Measure the remaining excipient and add it, like Neem oil, almond oil, Shikakhai powder, and amla powder in which all APIs extract heat-resistant glass wear

Step 3: Stir vigorously to create a miscible phase of the entire excipients and extract.

Step 4: Use the water bath to bring the miscible solution to a boil. 5–6 minutes of constant stirring until the entire The muslin cloth is used to form and filter the monophasic solution.

Step 5: Allow the solution to cool, and then use coconut oil and add jasmine as a fragrant and flavoring ingredient.

Step 6: Pour the mixture into a bottle with a well-fitting lid and Keep at room temperature.

Parameters of Evaluation: Evaluation

HAIR OIL TEST

Outward Look

Physical Appearance (Table 11).

Senior No	Parameters	Outcome
1	State	Liquid
2	Shades	Caramel Brown
3	Order	Aromatic

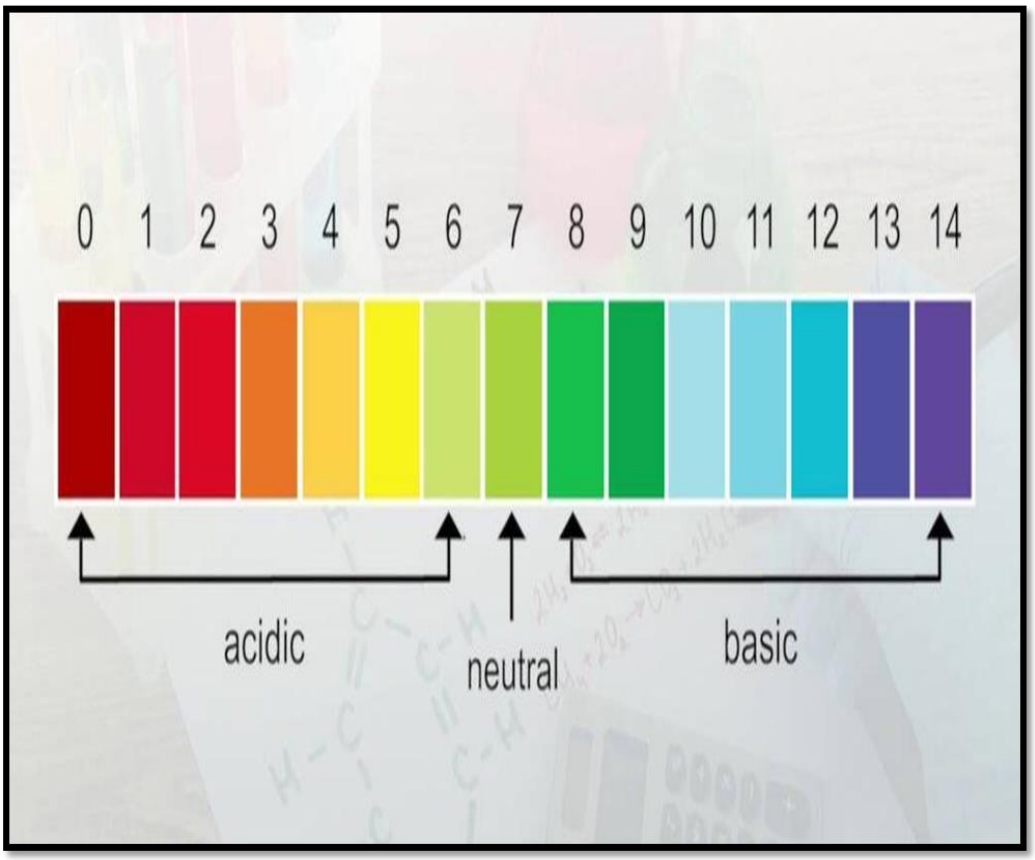
It contains different colours and different physical appearance of herbal hair oil.

For ex.

1) Amla oil contains light to deep green colour
2) Bhringraj oil contains dark green colour
3) Hibiscus hair oil contains reddish brown to darker brown
4) Neem hair oil contains dark cloudy yellow brown colour
5) Ayurvedic hair oil contains brown to greenish black

PH Determination

The hair oil's pH was determined to be maintained with a digital pH meter, guaranteeing precise and precise measurements.



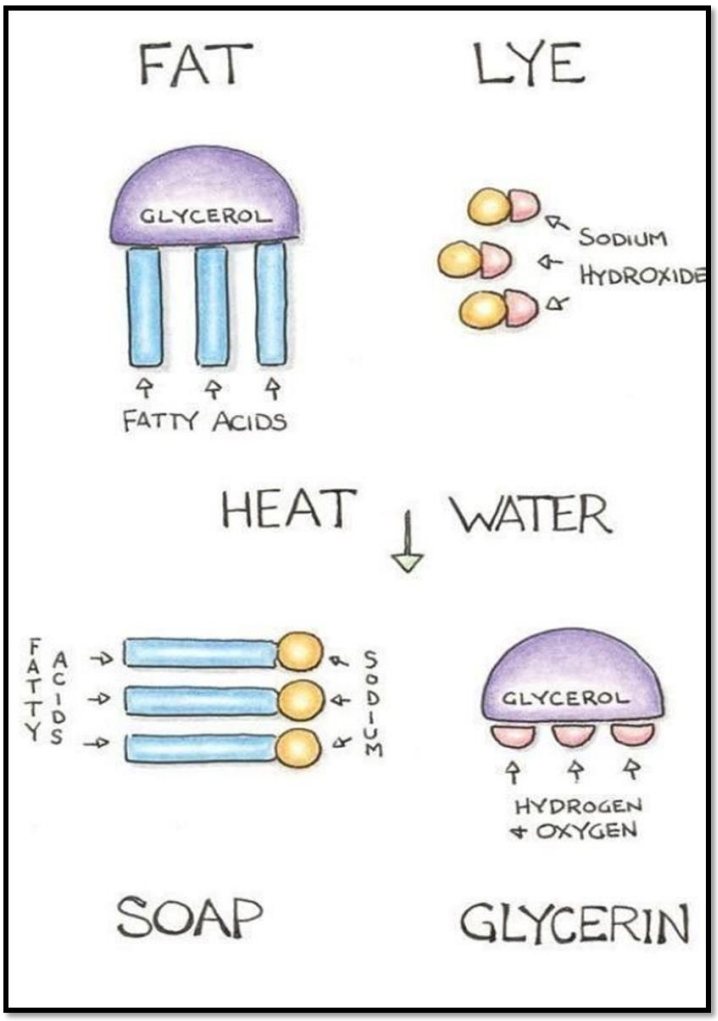
Acid Value

Making 0.1 Molar KOH (potassium hydroxide) solutions Determine the precise weight of 0.56 grams of potassium hydroxide pellets of potassium hydroxide (KOH) using analytical balance. 2. Dissolution: Use 100 milliliters of distilled water to dissolve the KOH pellets in a flask with a volcano. 3. Stirring: Continue to stir the solution carefully to guarantee that the KOH pellets dissolve completely. 4. Filling the Burette: Put the prepared 0.1 into a burette molar solution of KOH. Use a pip to measure 10 mL of hair oil. Use 50 milliliters of a 1:1 ethanol-ether solution to dissolve the hair oil conical flask containing the mixture. Give the mixture a good shake to make sure the hair oil has completely dissolved for 15 minutes to remove any residual moisture Let the bottle cool to room temperature. Close the bottle with its cap and record its weight (Weight 'a') using burette ote how much KOH solution is needed to arrive at the destination, as shown by a color shift from colorless to pink.

Saponification Value

Take 1 milliliter of oil precisely into a Ten milliliters of ethanol: ether mixture (2:) and 250 milliliters of conical flask was included . After 30 minutes of storage. A 0.5 N HCl was titration was performed on the cooled solution employing phenolphthalein as a marker. In the same way, the blank titration Oil (sample) was not taken during the procedure. The sum of KOH in milligrams was computed. Value of saponification = B- needed to neutralize the substance B = ml of potassium hydroxide necessary N = HCL is standard. W = Sample weight obtained forthe test (g).

Test of Viscosity



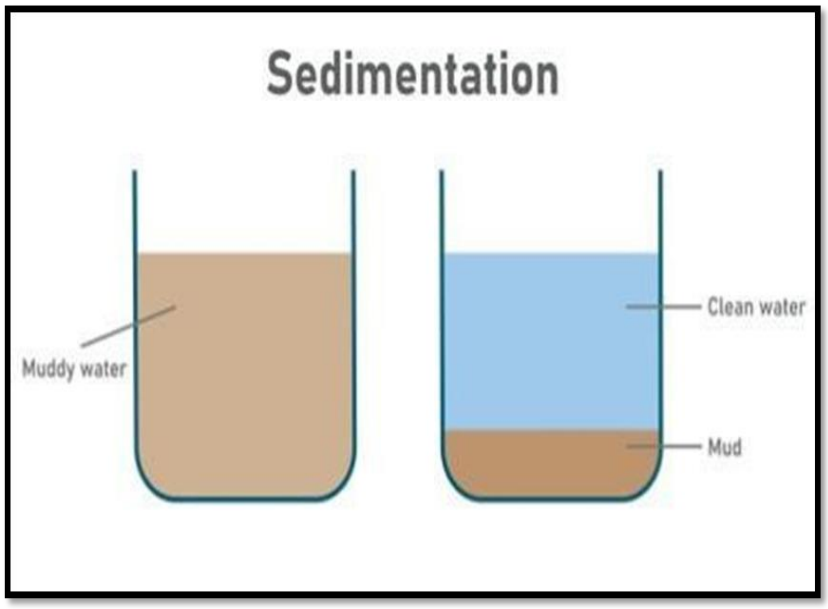
Step 1: Get the Specific Gravity Bottle Ready Use distilled water to rinse a dry, clean specific gravity bottle. to get rid of any impurities. Use an oven to dry the bottle at a15 minutes at a regulated temperature to get rid of any leftover dampness The bottle should be allowed to reach room temperature. Shut down the cap on the bottle and note its weight (Weight 'a') with an analytical equilibrium.

Step 2: Preparing the Sample Gently pour the herbal oil into the specific gravity bottle. sample, guaranteeing full filling and reducing air intrusion pent. Record the bottle's weight after closing the cap. Using an analytical balance, determine the weight of b'. Rewrite these messages. emcees in formal language). The viscosity is determined using Ostwald's viscometer, which measures the time it takes for a fixed volume of the oil to flowthrough a narrow capillary tube. The viscosity is then calculated based on the measured timeand the density of the oil. Test for Sedimentation

Let the prepared sample of herbal oil stand undisturbed. for twelve to twenty-four hours. Keep track of any indications of phase separation or sedimentation that could take place during this duration. Skin Itching Test: The herbal oil that was made was applied lay on a 1 cm skin of the hand and spent 4–5 hours in the sun.

1. Shikakai Anti-Perspiration
2. Amla Promote Hair Development
3. CurryTreat: Hair Damage Treatment

4. Fenugreek seeds: Growth of Hair
5. Hibiscus Prevents Hair Loss
6. Almond oil address hair loss and fortify the hairs
7. Coconut oil hydrates parched hair.
8. Reduce Dandruff with Neem Oil



OUTCOME AND CONVERSATION

Evaluation parameters and their conclusions are shown

Evaluation Inference and Parameter

1. Physical Characteristics Nothing has changed.
2. Three-Colored Caramel
3. PH5.4
4. Acid Value: 2.24
5. Value of 7Saponification (194.2)
6. Viscosity = 0.948
7. Sedimentation:- No
8. No irritation of the skin

The creation and assessment of the herbal hair oil solution invested in a product with potential and encouraging qualities.

Advantages for healthy hair. Let's examine the results and their consequences.

Physical Features and Appearance

The herb Hair oil had an aromatic appearance and was a caramel-brown liquid. smell. This physical attributes are consistent with normal herbal hair. Oils, suggesting that the formulation process was successful, Facilitating an effective formulation process.

Calculation of pH

The herbal hair oil's pH value was 5.4, which corresponds to the pH of the scalp naturally. between 4.5 and 5.5. The maintenance is supported by this congruence. of the health and natural balance of the scalp. Value of Acid The herbal hair oil painting's acidity turned out to be 2.24. A low acidity level denotes a reduced free adipose acid content, which is ideal for superior canvases. When evaluating, the acid value is crucial. the herbal haircanvases' stability and quality. High levels of acid Values may show

1. The oil painting's rancidity oxidation, resulting in off flavors and smells.
2. Breathing Declination decrease in the triglycerides in the oil painting, which alters its texture as well as performance. Additionally, the final destination will be pink to colorless.

Saponification

The value of saponification of The value of herbal hair oil was 194. 2. The process of saponification represents the fatty acids' average molecular weight. existing, which may affect how well the oil cleans. The saponification value is crucial for assessing the caliber and traits of hair oils made from herbs. Among its effects are:

1. Foaming and cleaning qualities: The oil's capacity to produces thick lather.
2. Properties that moisturize and nourish: the oil's capacity to nourish and hydrate hair. Additionally, The endpoint will be colorless to pink.

Viscosity test

The viscosity index by the OST- The herbal hair oil's wald viscometer was found to be 0.

Sedimentation Test:

There are no indications of separation or sedimentation.

Irritation Test:

There are no indications of skin irritation. or allergic responses.

CONCLUSION

In this investigation, we were able to formulate and assess herbal hair oil enhanced with a mixture of organic oils and extracts well-known for improving the health of hair. The herb . hair oil enhanced with a mixture of organic oils and extracts well-known for improving the health of hair. The herb Hair oil displayed favorable physical attributes, such as a brown, caramel hue and a pleasant, fragrant smell. Crucially, its pH level was within the range that promotes scalp health, signifying suitability with the natural environment of the scalp. Our findings show that the hair oil, made up of ingredients like , amla, shikakai, Neem, coconut, almond, and hibiscus show the best usable chemical characteristics, exhibits stability, and safety when applied topically. Together, these elements improve hair health by providing advantages like anti-dandruff products retires and encouraging hair development. This research validates the efficacy of herbal hair oils as organic substitutes for thetic products, guiding further investigation into formulation options limitation and investigation of other botanical components.

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