

Formulation and Evaluation of Herbal Hair Oil

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I. INTRODUCTION

1.1 Herbal plants:

The term of medicinal plants include a various types of plants used in herbalism and some of these plants have a medicinal activities. These medicinal plants consider as a rich resources of ingredients which can be used in drug development and synthesis. Besides that these plants play a critical role in the development of human cultures around the whole world. Moreover, some plants consider as important source of nutrition and as a result of that these plants recommended for their therapeutic values. These plants include ginger, green tea, walnuts and some others plants. Other plants their derivatives consider as important source for active ingredients which are used in aspirin and toothpastes .It has been estimated that about 13,000 species of plants have been employed for at least a century as traditional medicines by various cultures around the world. A list of over 20,000 medicinal plants has been published, and very likely a much larger number of plants.

Alternative Medicine

The world's flowering plant species have been used medicinally. Sometimes the figure of 70,000 medicinal plant species is cited, but this includes many algae, fungi, and micro-organisms that are not really plants as the word is understood by botanists . These days the term Alternative Medicine became very common in western culture, it focus on the idea of using the plants for medicinal purpose. But the current belief that medicines which come in capsules or pills are the only medicines that we can trust and use. Even so most of these pills and capsules we take and use during our daily life came from plants. Medicinal plants frequently used as raw materials for extraction of active ingredients which used in the synthesis of different drugs. Like in case of laxatives, blood thinners, antibiotics and antimalaria medications, contain ingredients from plants.

1.2 Hair oil:

The conception of beauty and cosmetics is as ancient as mankind and civilization. So, they use different beauty products that have herbs to look ravishing and young. Indian herbs and its intendment are popular worldwide . As the name suggests, the herbal extracts means the extracts of herbs. It is an ancient methodology because its origin was discovered from the holy Vedas and in Unani scriptures. As the cognizance said that the chemical medicines are not always work as magic bullets and they may have side effects. The in vogue trend moves toward the herbalism and use of natural products. Indian herbs are the prosperous source to be used in cosmetic industries. Hair oils those embraces herbal drugs are called as hair tonics. These are contrived by herbal extracts in an oil base. Hair oils are the hair care formulations applied for cure of hair disorders such as baldness, greying of hairs, hair falling, and dryness of hairs . A plethora of herbs have been employed for hair treatments. A few of these herbs are Amla, Henna, Neem, Methi, Lemon, Tulsi, Brahmi, Shikakai, Reetha, Liquorice root, Musk root, Mahabhringraj, Jantamasi, Chitraka, Marigold, Hibiscus, Nutmeg, Parsley, Rosemary, Thyme Herbal formulations always have tempted considerable attention because of their good bustle and comparatively lesser or nil side effects with synthetic drugs.^[1]

Hair is one of the vital parts of the body considered to be protective appendages on the body and accessory structure of the integument along with sebaceous glands, sweat glands and nails. Hair loss is a dermatologic disorder, and the surge for discovering natural products with hair growth promoting potential is continuous. Each hair grows in three cyclic phases viz., anagen (growth), catagen (involution) and telogen (rest). The anagen phase can be as short as 2-6 years. In the catagen phase, the growth activity increases and hair moves to the next phase, catagen phase is between 2-3 weeks. The telogen phase is a state at which the hairs move into resting state. This phase lasts for 2-3 months. In general, 50 to 100 hairs are known to be shed everyday and an increase of more than 100

constitutes a state of hair loss or alopecia. Hibiscus consists of calcium, phosphorus, iron, vitamin B1, riboflavin, niacin and vitamin C, used to stimulate thicker hair growth and prevents premature graying of hair. Brahmi contains alkaloids which enhance protein kinase activity. Methi contains high protein fodder which supply required protein nutrition to hair.^[2] Hair oils are the hair care preparations used for the prevention and treatment of baldness or other ailments, aggression of hair. They also promote the luxurious growth of hairs. Hair oil containing herbal drugs are used as hair tonic. Hair care products are categorized into two main category, 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 amla, henna, neem, methi, lemon, tulsi, brahmi, shikakai, reetha, liquorice root, musk root, mahabhringraj, jantamasi, chitraka, marigold, hibiscus, nutmeg, parsley, rosemary, thyme.

There are various methods available for the preparation of hair oils direct boiling method, paste method and cloth method. After preparation second main step is evaluation of preparation. The next final step is determination of its therapeutic efficacy.^[3]

Cosmetics are substances used to enhance the appearance or odor of the human body. Cosmetics include skin-care creams, lotions, powders, perfumes, lipsticks, fingernail and toe nail polish, eye and facial makeup, permanent waves, colored contact lenses, hair colors, hair sprays and gels, deodorants, baby products, bath oils, bubble baths, bath salts, butters and many other types of products. A subset of cosmetics is called "make-up," which refers primarily to colored products intended to alter the user's appearance. Many manufacturers distinguish between decorative cosmetics and care cosmetics. In the last three-four decades the use of cosmetics has increased exponentially not only among females but the male population also indulges in their use. Hair dyes, hair oil, creams are as popular with males as with females. Most countries now have laws to control, manufacturing, label, sale etc. of cosmetics in such a way that use of cosmetics harmful to health is prevented. The concept of beauty and cosmetics is as ancient as mankind and civilization. So, they use various beauty products that have herbs to look charming and young. Herbal cosmetics have growing demand in the world market and are an invaluable gift of nature.

II. LITERATURE REVIEW:

1. Visuvanathan Theysshana et. al; (2022)^[4]:

Fenugreek (*Trigonella foenum-graecum* L.) is a medicinal plant that has been used as a food condiment as well as for its multiple therapeutic characteristics since ancient times. Fenugreek plant grows up to 60 cm in height, and its seeds are golden-yellow rhomboidal-shaped. Though fenugreek is more commonly known for its seeds, the leaves and stem have also been reported to have medicinal uses. These properties exhibited are due to the content of the secondary metabolites, also known as phytochemicals, in the fenugreek plant. Such metabolites are alkaloids, saponins, tannins, phenols, and many others. Fenugreek has been used traditionally for numerous indications, such as aid in labour, lactation stimulant, and laxatives. In modern research, there have been several animal and clinical studies that have shown therapeutic effects of fenugreek when taken orally. Fenugreek is a suitable plant candidate with a high prospect of being used as a credible medicinal plant to derive new drugs. This review aims to summarize the physical and chemical properties of fenugreek and its bioactive compounds that have been isolated for medicinal purposes and discusses the traditional and pharmacological uses of fenugreek.

2. Maheshwari Raaz K et. al; (2020)^[5]: This novel legume source provides soluble fiber along with other glucose-, cholesterol- and triglyceride-lowering compounds. This seed spice is employed for medicinal purpose in many traditional systems as antibacterial, gastric stimulant, against anorexia, antidiabetic agent and as a galactagogue. In recent decades, several health beneficial physiological attributes of fenugreek seeds have been seen in animal studies as well as human trials. These include antidiabetic effect, hypocholesterolemic influence, antioxidant potency, digestive stimulant action, and hepatoprotective effect. Among these beneficial physiological effects, the antidiabetic and hypocholesterolemic property of fenugreek, both of which are mainly attributable to the intrinsic dietary fiber constituent, have promising nutraceutical value. In this review paper, the potential of fenugreek for disease prevention and health improvement has been emphasized.

3. Jhahria asha el. al; (2016)^[6]: *Trigonella foenum-graecum* plant is also known as methi and used in Ayurvedic medicines for the treatment of bronchitis, rheumatoid arthritis, abscesses or wounds and digestive abnormalities. The review

article has been made for the standardization and phytochemical evaluation of Fenugreek seeds and this one is comprises of powder microscopy, fluorescence analysis and some other physico-chemical constants such as foaming index and swelling index. In modern food technology Fenugreek is used as food stabilizer, adhesive and emulsifying factor because of its gum, protein and fiber content. It is a rich source of calcium, iron and other vitamins. In this study after a general discussion of physio-chemical constituents, the biological & pharmacological reactions of Fenugreek such as anti-diabetic activity, anti-hypercholesterolaemic properties, anti-toxic activity, anti-cataract activity, immunomodulatory activity and anti-oxidant activities were briefly investigated. The results of these studies provide a complete understanding of the biological action of *T. foenum-graecum*.

4. Moradi kor et. al; (2013)^[7]: Fenugreek is a medicinal plant that use in disease some therapy. This plant use for blood lipids and sugar decreasing in diabetic and non diabetic peoples and have antioxidant and antibacterial activity. The plant contains active constituents such as alkaloids, flavonoids, steroids, Saponins etc. It is an old medicinal plant. It has been commonly used as a traditional food and medicine. Fenugreek is known to have hypoglycemic, and hypocholesterolaemic, effects, Anti-inflammatory effects. Recent research has identified fenugreek as a valuable medicinal plant with potential for curing diseases and also as a source for preparing raw materials of pharmaceutical industry, like in steroidal hormones. Since fenugreek is a self-pollinated crop, a mutation breeding method can be used to generate mutants with a determinate growth habit. Irradiation and chemical mutagens can be used to produce point mutations in fenugreek.

5.Lanka Suseela et. al; (2018)^[8]: Aloe vera, a succulent plant that grows in arid and subtropical climates is best known for its medicinal properties and is used in Ayurvedic, Homoeopathic and Allopathic streams of medicine. It has been in use for a long time by people of varied cultures and traditional uses include applications to reduce perspiration, oral dosing for diabetes and to get rid of a range of gastrointestinal ailments. It is also used to treat burn wounds, minor cuts, genital herpes, and seborrheic dermatitis. The leaves of this wonderful medicinal plant contain numerous vitamins, minerals, natural sugars, enzymes, amino

acids, and as well rich in various bioactive compounds that exhibit emollient, purgative, anti-inflammatory, antioxidant, antimicrobial, anti-helmenthic, antifungal, aphrodisiac, antiseptic and cosmetic values. Many cosmetic industries widely use this plant owing to its healing and nourishing properties.

6. R. Rajeswari et. al; (2016)^[9]: Aloe vera is the oldest medicinal plant ever known and the most applied medicinal plant worldwide. Extracts of Aloe Vera is a proven skin healer. Aloe Vera help to soothe skin injuries affected by burning, skin irritations, cuts and insect bites, and its bactericidal properties relieve itching and skin swellings. It is known to help slow down the appearance of wrinkles and actively repair the damaged skin cells that cause the visible signs of aging. Aloe is a powerful detoxifier, antiseptic and tonic for the nervous system. It also has immune-boosting and anti-viral properties. Research has proven that adding Aloe Vera to ones diet improves digestion. As a general health tonic. Aloe Vera is a useful source of vitamins – even vitamin B12, Vitamin A, contains B-Group vitamins, Vitamin C, Vitamin E and folic acid. Aloe Vera Gel contains important ingredients including 19 of the 20 amino acids needed by the human body and seven of the eight essential ones that just cannot be made.

7. Kumar K. P. Sampath et. al; (2010)^[10]: Aloe vera contains numerous vitamins and minerals, enzymes, amino acids, natural sugars and agents which may be anti-inflammatory and antimicrobial. The combination and balance of the plant's ingredients are what purportedly gives it its healing properties. The part of the Aloe vera which is used are the leaves. The Aloe is an Emollient, Purgative and Vulnerary. It is also used for its antibacterial, anesthetic and antiseptic properties, and is good to use as a tool for restoration of tissue. It is most commonly used on burns and minor cuts, especially good for sunburns, although it is being used for the treatment of skin cancer. Aloe is very useful on rashes caused by Poison Ivy, and it may help to draw out infection. It may help with Vaginal Yeast Infections, although this is not solid at this time. Aloe be made into a warm tea, made from the juice as a wash for eyes. The washing of eyes with Aloe may protect the eyes from ultraviolet rays from the sun. It can be used as a purgative. Aloe is also an extremely powerful laxative, and it is not recommended that it is taken

internally. It is recommended that the fresh juice from the plant is used, and not the store bought juice within other products or on its own. The reason for this is that the medicinal use of the plant diminishes with time, and there is much questioning about whether or not you can receive benefits from the store bought aloe, even if the product has been filled with preservatives. It gives a healthy and supple look to the skin by reducing wrinkles, curing acne, rejuvenating and giving it a youthful glow.

8. Othaman Rizafizan et. al; (2019)^[11]: Coconut oil in microemulsion is a better option than conventional practice since it can incorporate bioactive ingredients with a stable control release property, especially for hair care products. This work aims to develop microemulsion systems based on coconut oil with the addition of Tween 20, Tween 40, and Tween 80 as non-ionic surfactants (S), and propylene glycol as a co-surfactant (CoS). The determination of microemulsion regions in the ternary phase diagram was carried out by water titration method and the properties of the microemulsion were analysed. Based on the results, the microemulsion system of coconut oil with Tween 80 produced the largest microemulsion region compared to Tween 40 and Tween 20. Microemulsion systems of coconut oil/Tween 80 with the addition of propylene glycol with the ratio of S/CoS at Km = 3:1, 2:1, and 1:1 resulted in a decrement of microemulsion regions compared to using merely Tween 80. The microemulsion system of coconut oil/Tween 80/water at the ratio of oil: surfactant = 1:9 was chosen for further characterisations. Viscosity and electrical conductivity studies showed that the microemulsion system was water-in-oil (w/o) type as there was no phase transition to bicontinuous (BC) or oil-in-water (o/w) type due to low percentage of water content. Stability studies showed that the microemulsion system remained clear and stable at 25 and 40°C upon onemonth storage except at 4°C where the system became cloudy and turbid. For particle size analysis, the microemulsion system possessed particle size less than 100 nm.

9. Chandrashekar Preeti et. al; (2010)^[12]: Coconut oil is produced by crushing copra, the dried kernel, which contains about 6065% of the oil. The oil has the natural sweet taste of coconut and contains 92% of saturated fatty acids(in the form of triglycerides), most of them (about 70%)

are lower chain saturated fatty acids known as medium chain fatty acids (MCFAs). MCFAs are not common to different vegetable oils with lauric acid at 4556%. Various fractions of coconut oil have medium chain triglycerides and are excellent solvent for flavours, essences, emulsifiers etc. These fatty acids are used in the preparation of emulsifiers, as drugs and also in cosmetics. Its metabolism is different from that of the normal vegetable oils containing long chain fatty acids. Hence, it cannot be generalized as an oil similar in properties to that of a 92% long chain saturated fatty acids containing oil/fat. More studies are required to prove the good effects of coconut oil, medium chain triglycerides (MCT) and the fatty acids on humans especially on the ill effects on cardiovascular and other diseases. The review covers the production of coconut oil, its chemistry, MCT and its applications taking a holistic approach on the good and bad effects of coconut oil reported in the literature.

10. Yudharaj P. et.al; (2016)^[13] : A medicinal plant is any plant which, in one or more of its organs, contains substances that can be used for therapeutic purposes, or which are precursors for chemo-pharmaceutical semi-synthesis. When a plant is designated as medicinal, it is implied that the said plant is useful as a drug or therapeutic agent or an active ingredient of a medicinal preparation. Herbal medicines are in great demand in the developed as well as in the developing countries for primary health care because of their wide biological and medicinal activities, higher safety margins and lesser costs.

11. Gautam S. et. al; (2012)^[14]: The concept of beauty and cosmetics is as ancient as mankind and civilization. So, they use various beauty products that have herbs to look charming and young. 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 present work was aimed to formulate herbal oil for general purpose (application in hairs) using various herbs. The formulated herbal oil was evaluated and various parameters such as viscosity, saponification value, pH etc. were determined and are reported in this paper.

III. AIM & OBJECTIVES

Aim:

The main aim of our project is to formulate and evaluate herbal hair oil.

Object:

- To promote the hair growth and smoothness that is required for beautifying and attraction of the hair.
- To supplement the hair with nutrients such as vitamins and minerals.
- To prevent hair form damage and loss caused by pollution.
- To prevent the dandruff, spit ends and dull hair.

IV. PLAN AND WORK

- Survey of literature
- Collection of material
- Preparation of oil
- Using simple hot method
- Physical evaluation of oil
- Results and Discussion
- Summary
- Conclusion
- Referances

V. PLANT PROFILE

The plants selected for preparation of herbal hair oil are Allium Cepa ,Seeds of Trigonellafoenum - graecum and Aloe barbadensis miller and leaves of murraya koenigii

5.1 Allium Cepa



Fig no. 1 Allium Cepa

Onions belong to the genus Allium in Alliaceae family and contain many cultivars which are colored. Onion’s anti- inflammatory properties may help soothe an itchy scalp. Onion is a known remedy for hair health, specifically for hair loss. Onion extract which is excellent source of sulphur a vital element need for hair growth. Sulphur is found in amino acid and makes up a compound of hair protein keratin. Applying onion hair oil to the scalp strengthens hair scalp and follicles which makes mane grow thicker and longer.

Medicinal Uses:-

Onion contains chemicals that seem to reduce swelling and lung tightness related to asthma. It also contain chemicals that seen to reduce cholesterol and lower blood sugar. People use onion to prevent scarring. It also used onion to prevent scarring. It is also used for obesity, hair loss, asthma, insomnia, high blood pressure.

Classification Of Allium Cepa

Division	Angiospermac
Class	Monocotyledons
Subclass	Liliidae
Series	Coronariae
Order	Liliales
Family	Alliaceae
Genus	Allium L.

Table No. 1 Classification Of Allium Cepa

5.2Trigonellafoenum-graecum .



Fig. No.2 Trigonellafoenum –graecum

Plants are used medicinally in different countries and are a source of many potent and powerful drugs . This plant decrease body fats and effective on obesity. Fenugreek (Trigonella foenum-graecum L.), plant is widely distributed throughout the world and which belongs to the family Fabacecae

Chemical Composition

Fenugreek is a natural source of iron, silicon, sodium and thiamine. Fenugreek contains mucilagins which are known for soothing and relaxing inflamed tissues. Fenugreek seeds contain alkaloids, including trigonelline, gentianine and carpine compounds. The seeds also contain fibre, 4-hydroxyisoleucine and fenugreekine, a component that may have hypoglycemic activity.

Medicinal Uses

Prevent hair loss

The Fenugreek seeds being high source of Protein are very useful in hairfall, so it helps in treating baldness, thinning of hair and hair fall. It also has Lecithin, a natural emollient which helps in strengthening and moisturisation of hair. It also keeps the dandruff away and keeps the hair free of lice.

Prevents Dandruff & Strengthens Hair :

Not only does fenugreek help prevent hair loss, but also keeps the dandruff away. It also keeps the hair lice free.

Physical and Chemical Properties of *T. foenum-graecum*

Fenugreek seeds consist of 45 to 60% carbohydrates, in which mucilaginous fibre (galactomannans), 20 to 30% proteins high in tryptophan and lysine, 5 to 10% fixed oils (lipids), pyridine alkaloids, mainly choline (0.5%), trigonelline (0.2–0.38%), gentianine, and carpaine, the flavonoids apigenin, orientin, luteolin, quercetin, vitexin, and isovitexin, free amino acids, such as 4-hydroxyisoleucine (0.09%), arginine, lysine, and histidine calcium and iron, saponins (0.6–1.7%), glycosides yielding steroidal saponin on hydrolysis (diosgenin, yamogenin, tigogenin, neotigogenin), cholesterol and sitosterol, vitamins B, A, C, and nicotinic acid, and 0.015% volatile oils (n-alkanes and sesquiterpenes).

Various Names of *Trigonella foenum-graecum*

Botanical Classification of *T. foenum-graecum*

Domain	Eukarya
Kingdom	Plantae
Division	Magnoliophyta
Class	Magnoliopsida

Order	Fabales
Family	Fabaceae
Sub-family	Trifoliae

Table no. 2:- Classification of *T. foenum-graecum*

Uses:

- Methi seeds are a great remedy for diabetics.
- Methi helps in controlling the blood sugar level.
- The amino acid compounds in fenugreek seeds increase insulin secretion in the pancreas which helps in lowering the blood sugar level in the body.
- Consumption of fenugreek helps in treating kidney health.

5.3 Aloe barbadensis miller



Fig. No. 3 Aloe barbadensis miller

Aloe vera has been used externally to treat various skin conditions such as cuts, burns and eczema. It is alleged that sap from Aloe vera eases pain and reduces inflammation. It has antiseptic and antibiotic properties which make it highly valuable in treating cuts and abrasions. It has also been commonly used to treat first and second degree burns, as well as sunburns and poison oak, poison ivy, and poison sumac infections, and eczema. It can also be used as a hair styling gel and works especially well for curly or fuzzy hair. It is also used for making makeup, moisturisers, soaps, sunscreens, shampoos and lotions. Aloe vera gel is useful for dry skin conditions, especially eczema around the eyes and sensitive facial skin.

Classification of Aloe Vera

Kingdom	Plantae
Clade	Angiosperms
Clade	Monocots
Order	Asparagales
Family	Asphodelaceae
Subfamily	Asphodeloideae
Genus	Aloe
Species	A. Vera

Table no.:-3 Classification of Aloevera

Properties of Aloe vera

Family: Liliaceae

Botanical Name(s): Aloe barbadensis, Aloe indica, Aloe barbados, Aloe vera

Popular Name(s): Aloe, Aloe Vera, Indian Alces, Kumari, Ghirita, Gawarpaltra, Barbados aloe, Curacao aloe and Lu hui etc.

: It is a stemless or very short-stemmed plant growing to 80-100 cm tall, spreading by offsets and root sprouts. The leaves are lanceolate, thick and fleshy, green to grey-green, with a serrated margin. The flowers are produced on a spike up to 90 cm tall, each flower pendulous with a yellow tubular corolla 2-3 cm long. The tissue in the center of the aloe leaf contains a gel which yields aloe gel or Aloe vera gel. Aloe vera contains an array of materials, including the following

- Acids - antimicrobial, anti-helminthic (anti-parasitic worms), wound healing for skin tissue and ulcers.
- Amino Acids - required for repair and growth. Aloe vera contains twenty of the twenty two essential amino acids.
- Enzymes - catalysts enabling chemical reactions to take place.
- Lectin - anti-tumour effects.
- Lipids - principle structural components of living cells.
- Minerals - calcium, magnesium, potassium and sodium are all present in significant quantities.
- Lactates and Salicylates - analgesic properties.

- Phenolics - mild antiseptics and antimicrobials.
- Polysaccharides - long chain sugars broken down to smaller ones via enzymes.
- Urea-Nitrogen - pain killing effect.
- Vitamins - contains 8 of the 13 recognised vitamins.
- Contra-indications/Precautions

Medicinal Uses of Aloe Vera

Aloe vera plays an important role in maintaining the healthy functioning of the major organs, It boosts circulation, and thus increases the supply of oxygen to the cells. Therefore, it could play a major role in alleviating the condition of thalassemia patients. It boosts circulation, and thus increases the supply of oxygen to the cells. Therefore, it could play a major role in alleviating the condition of thalassemia patients. Aloe vera is also beneficial for Asthma patients. It helps to maintain healthy joints and muscles, and thus, prevents arthritis. Aloe vera detoxifies the body, and is considered the best colon cleanser. It prevents constipation; therefore, it is an effective blood purifier. It is beneficial in kidney and liver problems, like jaundice. Aloe vera also reduces blood sugar, and controls diabetes. It reduces cholesterol and triglycerides, leading to a healthy heart, and preventing cardiac problems.

Aloe Vera for A healthy skin

Apart from its effect on the internal organs, Aloe vera has a beneficial effect on the skin. It is rich in anti-oxidants, which neutralize free radicals. As a result, Aloe vera wards off wrinkles and age related changes. It nourishes the skin, by boosting the circulatory system. Aloe vera is effective in treating skin disorders, like dermatitis, and even psoriasis. It heals cuts and wounds, blisters and burns, including sunburns, and even minor second degree burns. Aloe vera clears acne and skin allergies, dark spots and skin blemishes, and makes the skin clearer. It is also good for the hair and scalp. Side Effects of Aloe vera Some people do experience side effects when using aloe vera. Some of these are:

- Dehydration due to frequent stools
- Stomach cramping
- Irregular heartbeat
- Lowered potassium levels
- Diabetes
- Pregnant
- Nursing
- Allergies to onions, garlic, or tulips..

5.4 Oily Material

The oils used are Cocos Nucifera oil



Fig no.4 Cocos nucifera oil

Coconut oil is an edible oil that has been consumed in tropical countries for thousands of years. As it has a long shelf life and a melting point of 76 °F, it is used in baking industries. A negative campaign against saturated fats in general, and the tropical oils in particular, led to most food manufacturers abandoning coconut oil in recent years in favor of hydrogenated polyunsaturated oils, particularly soy, which contain trans fatty acids. Studies done on populations consuming diets high in coconut oil show no adverse effects on the health of the population

Coconut oil production in India

Rotaries and expellers are used for crushing the dry coconuts (known as copra) for recovery of oil. The total production of edible grade coconut oil in the country is about 4.0 lakh tons which is 1.5 lakh tons more compared to that produced in 1980's.

Skin Care

Coconut oil is an excellent massage oil for the skin as well. It acts as an effective moisturizer on all types of skin, including dry skin. The benefit of coconut oil on the skin is comparable to that of mineral oil. Fortunately, unlike mineral oil, there is no chance of having any adverse side effects on the skin from the application of coconut oil. Coconut oil is a safe solution for preventing dryness and flaking of skin.

Hair Care

Coconut oil is one of the best natural nutrients for hair. It helps in healthy growth of hair with a shiny quality. It is also highly effective in reducing protein loss which can lead to various unattractive or unhealthy growth qualities in your hair. Coconut oil is extensively used in the Indian

sub-continent for hair care. Most of the people in those countries apply coconut oil on their hair every day after bathing or showering. It is an excellent conditioner and helps the re-growth process of damaged hair. It also provides the essential proteins required for nourishing and healing damaged hair. Research studies indicate that coconut oil provides better protection to hair from damage caused by hygral fatigue.

Benefits of hair oil

Liver:

The presence of medium chain triglycerides and fatty acids helps in preventing liver diseases because those substances are easily converted into energy when they reach the liver, thus reducing the work load of the liver and also preventing accumulation of fat.

Kidney:

Coconut oil helps in preventing kidney and gall bladder diseases. It also helps to dissolve kidney stones.

Pancreatitis:

Coconut oil is also believed to be useful in treating pancreatitis.

Stress relief:

Coconut oil is very soothing and hence it helps in removing stress. Applying coconut oil to the head, followed by gentle massage helps to eliminate mental fatigue. Coconut oil is one of the most important oil crops and in terms of total planted area in Malaysia, coconut is the fourth important industrial crop after oil palm, rubber, and paddy. Coconut oil, being lauric acid-based oil, has many uses in the pharmaceutical and cosmetic industries. For non-edible purposes, coconut oil is an excellent material due to its desirable properties such as good biodegradability, non-toxic character, and mildness to skin.

5.5 Murraya koenigii



Fig No.5 Murraya koenigii

Curry leaves are a popular leaf-spice use in very small quantities for their distinct aroma due to the presence of volatile oil and their ability to improve digestion. Curry leaf (*Murraya koenigii*) is an important leafy vegetable. Its leaves are widely used in Indian cookery for flavorings foodstuffs. The leaves have a slightly pungent, bitter and feebly acidic taste, and they retain their flavour and other qualities even after drying. Curry leaf is also used in many of the Indian ayurvedic and Unani prescriptions. The leaves have found its way in many holistic treatments like Ayurveda, Siddha, Unani and Traditional Chinese treatments for their medicinal properties in treating diabetes, diarrhea, etc. Curry leaves have a distinct bitter and pungent taste with acidic undertones. Curry leaves being a powerhouse of antioxidants and vitamin C is extremely beneficial in providing a beautiful healthy skin. It protects the skin from tanning.

Benefits of the Hair Oil:-

The oil acts like a magic potion in giving one a beautiful mane. It rejuvenates hair follicles, stimulates the growth of hair, repairs damaged root, strengthens the hair, prevents hair fall and premature graying. Since the oil has a pungent smell, addition of an essential oil while applying it to your hair will not only nourishes the hair but also adds a beautiful fragrance to your hair.

Kingdom	Plantae
Class	Magnoliopsida
Sub class	Rosidae
Order	Sapindales
Family	Rutaceae
Division	Magnoliophyta
Genus	<i>Murraya J.Koenig ex L.</i>

VI. MATERIAL AND METHODS

Material

- A. *Allium cepa*
- B. *Trigonellafoenun-graecum*
- C. *Aloe bearbadensis miller*
- D. *Cocos nucifera oil*
- E. *Murraya koenigii*

Methods

The herbal hair oil was prepared by collecting and using various plant materials. These are seeds of *Trigonellafoenum-graecum*. All were collected from Agricultural fields. Collected plants were identified by my project guide Prof. The oils used for herbal hair oils were *Cocos nucifera oil*.

VII. FORMULATION OF HERBAL HAIR OIL

Procedure

1. Herbs were weight by used weighing balance whereas, oils were measured through pipette.
2. The oil and herbs were mixed together in a vessel.
3. The above mixture was then allowed to boil on low flame with continuous stirring. So, as to avoided the adherence of the medicinal plants to the bottom of the vessel.
4. At this stepped moisture of the medicinal plant commenced to evaporate so it is agitated frequently and carefully to ensured that the mixture did not stick at the bottom of vessel.
5. The herbs were taken out from time to time to know the condition and stage of mixture of oils.
6. As further heating to the content, the oil started to form a froth. This was the condition where all the active ingredients of medicinal plants started to concentrate in oil.
7. In the next stepped, the mixture was filtered through muslin cloth.
8. The collected strain was final herbal hair oil product.

Formula:-

TABLE NO.5 FORMULA TABLE

Ingredients	Quantity
Allium Cepa	12 g
Trigonellafoenum-graecum	3 g
Aloe barbadensis miller	3 g
Cocos nucifera oil	15 ml
Murraya koenigii	5 g

VIII. PHYSICAL EVALUATION OF HERBAL HAIR OIL

The physical evaluation parameters were determined are specific gravity, pH, viscosity, refractive index, acid value and saponification value.

Parameters	Result
Colour	Brown
Odour	Characteristic
pH	5.67
Viscosity	0.9249
Skin irritation	No Irritation

Table no.6:- Physical Evalutaion of Herbal Hair Oil

IX. RESULTS AND DISCUSSION

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. The herbal hair oil was prepared from the above mentioned ingredients and it was subjected to the qualitative chemical analysis for identification of various plant constituents. The various parameters like Colour, Odour, Specific gravity (density), pH, Viscosity, Saponification value, Acid value, Refractive index and irritation testof herbal hair oil was evaluated Anti-dandruff activity was carried

out by measuring the zone of inhibition of herbal hair oil. Hair oil showed good activity.

X. SUMMARY

Herbal hair oil is more preferred and is used in many ail ments of hair. They promote hair growth, improve elegance of hair and prevent hair fall. It not only promotes hair growth they also provide necessary moisture to the scalp rendering in beautiful hair. Herbal hair oils are natural oil products with essential properties to treat hair problems like thinning of hair and dry or flaky scalp. These oils are used not only for moisturizing purposes but also to promote hair growth, improve circulation of blood in the scalp, prevent dandruff and add volume to the hair shaft.

XI. CONCLUSION

In day to day life humans faced some hair fall problems due to various reasons. It may be some mental stress or may be genetic or may be some hormonal imbalance. Herbal hair oil is one of the most well-known hair remedies. India is part of a growing range of medicinal herbs with a variety of preventive and curative properties. It has been established that the formulation is safe for human use. Which is essential for maintain good and healthy life style.

Herbal extracts have been shown to have anti-hairfall, anti-dandruff properties. and constituents used in the formulation of herbal hair oil, which is used together, they had a stimulating impact in promoting good, lustrous hair growth. Every human being wanted long, shiny, strong hairs with no side effects and also in minimal price cost. Last but not least that we conclude that, this kind of herbal oil has good nutritional quality.

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