

Formulation and evaluation of effective pharmacological activities of medicated herbal hair oil

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Abstract

Beauty and the concept of beauty are as old as humanity and civilization. Cosmetics is an essential part of human life. Herbal cosmetics is an important part of cosmetic technology. Herbal cosmetics are products that combine bioactive substances with medicinal properties. The plant is used for skin beauty, cosmetic preparation, flavoring and coloring. Hair plays a big part of one's personality and we use a lot of hair care cosmetics. Studies have shown the importance of vegetables and how they can help with baldness, dandruff, dryness, dandruff and more. With the aim of evaluating its use in common hair problems, such as various cosmetic products using an herb to give youth and beauty. Various herbs is used in herbal hair care products. They contain vitamins, antioxidants and more. They provide vital nutrients like herbal hair oils which are widely used to nourish the hair and prevent hair fall and dandruff. Nowadays, side effects are a big problem after using any cosmetics, so it is advisable to use herbal medicines because the risk of side effects is low. Hair plays an essential role in a person's personality and we use many cosmetic products to maintain it. Herbal medicines always work and have little or no side effects compared to synthetic medicines. This study aims to review the efficacy of some hair oils in treating common hair problems such as dandruff, hair loss, dandruff, dryness and hair loss. The various plants used in medicine are Amla, Nirgundi, Bhringraj, Jatamansi, Gammhari, Aprajita, Shankpushpi, Shikakai, Brahmi, Kapur, Pudina, Satavari, Til Oil and Coconut oil. All these ingredients provide a variety of essential nutrients such as vitamins, antioxidants, proteins, terpenoids and essential oils to promote optimal fat cell function. Essential oils were evaluated for their physical and chemical properties, acidity, saponification efficiency, viscosity, pH, etc. All parameters were within optimal and normal limits. This is why they use herbal oil, which is designed to enhance hair growth. A vitamin and mineral supplement, floor protector, decorator and an alternative to harmful chemicals.

Keywords: Dandruff, herbal cosmetics, herbal hair oil, hair follicle, healthy

Introduction

Hair is one of the characteristics of mammals and performs various functions such as protection against external factors such as heat, cold, etc. Hair is an important part of the body and serves as a protective attachment to the body as well as a supporting structure for integration. sebaceous and sweat glands;

1. The main parts of the hair are the bulb, the root and the shaft.
2. Hair loss, dandruff, lice, split ends and gray hair are some of the common hair problems.
3. Hair is one of the body's most intricate structures, despite appearing simple. There are two structures in hair.

Hair Follicle

The beginning of hair development and the locations where hair is lost are the hair follicles. This causes the production of moisture that begins in the pores. It is believed in dehydration. The fold is surrounded by an outer inner layer that covers and protects the expanding skin, which is finished before the fat cells are created.

Hair shaft

The hair shaft is the section of the hair that has three layers of keratin. These layers –

Inner layer: This is known as the medulla. The original is not always accessible depending on the type of hair.

Middle layer: The cortex is the layer that covers the majority of the hair shaft.

Outer layer: The cuticle is a layered roof-like structure made up of closely packed scales.

Sturcture

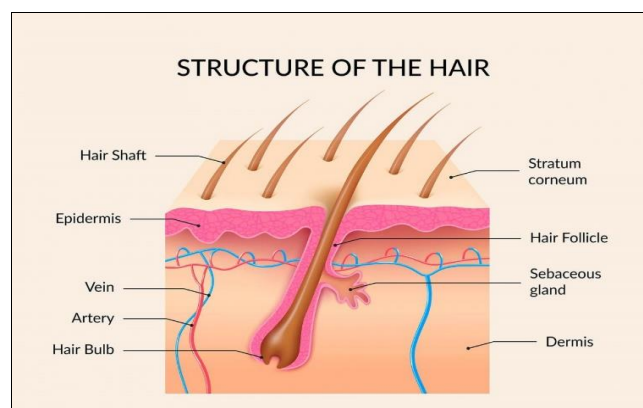


Fig 1: Structure of Hair

Hair type mainly depends on the curls. The hair follicles determine the quantity of hair follicles. Genetics determines hair type. He is credited for creating the four curly pattern classification system for hair.

Type

1. Straight type,
2. Wavy type,
3. Curly type,
4. Coily type

The growth process is divided into 3 phases: -^[4]

- a. The Anagen phase: The Anagen phase lasts for 2-6 years. The hair pushes the new hair that has fallen out to prevent it from coming out of the braid line.
- b. Catagen Phase: Catagen Phase causes headaches and is usually present. This time 2-3.
- c. Telogen phase: The Telogen phase lasts for 2-3 months. In the Telogen phase the hair is supported and the albatross is fully formed.

Hair Oil

Hair oil is a hair care product. According to definitions, hair care products are substances used to clean, enhance, nourish, and preserve the look of healthy hair^[5]. Hair oil applied to the hair helps in managing baldness, gray hair, hair fall, dry hair and at the same time nourishes the hair^[6]. Herbal cosmetics are in great demand due to public interest in them; herbal cosmetics are more effective with less side effects, and the components are readily available^[7]. One of the main ingredients in herbal cosmetics is herbal hair oil. Vegetable oils are preferred and used in many hair products^[8]. They not only encourage hair development, but also give the scalp with the moisture it requires to keep hair looking great^[8]. Herbal oils containing herbal medicines are known as hair tonics^[9]. Herbal hair oil contains a number of helpful ingredients that aid in the regular functioning of the sebaceous glands and promote natural hair growth^[10]. One of the most popular hair care products^[11]. As people's living standards improve, the use of hair oil increases every day. Spices and herbal flavors are added to the hair oil to give it a natural flavor and colour.

Benefits

We live in a dirty world that is not fit for hair. This is where herbal hair oils come in handy. This herbal oil contains Amla, Nirgundi, Bhringraj, Jatamansi, Gammabhari, and other herbs. Shankpushpui, Shikakai, Brahmi, Kapur, Pudina, Satavari, Til Oil and Coconut oil. Its advantages include:

- Provides natural benefits. Herbal oils contain vitamins and trace elements that act as food for the hair.
- Hair oil helps prevent hair loss and adds shine to curly hair. The tips of the hairs need special care and the leaves move and feed. Grey hair may be avoided by using hair oil on a regular basis.
- Maintains hair moisture.

- Promotes growth.
- Prevents dandruff.
- A dazzling glow emanated from it.
- Relief from stress.

Materials and Methods

Process used to prepare herbal hair tonic. If coconut oil is mixed with many chemicals that contain medicinal properties, it is called a hair tonic. It is prepared by the following process.

Cloth method

Paste Method

Direct Boiling method

1. Textile method

The dried substance was weighed and tied in a muslin cloth. Then the cloth in the coconut oil base is removed by constant boiling and stirring and finally the oil is filtered.

2. Paste method

The paste method is used when the need for fresh fruit or flowers or plants is turned into a paste with a little water and kept overnight. The oil stops whipping and the solution is completely released into the oil. The oil is then filtered through a muslin cloth.

3. Direct Boiling method

The crude drug is powdered, weighed and cooked directly in coconut oil until the drug is completely released into the oil base.

The process of preparing Medicated Herbal Hair tonic. Below are the steps for preparing Medicated Herbal Hair oil.

Material and methods

Collection of Plants Materials

The medicated herbal hair oil was prepared by collecting various plant materials like Amla, Nirgundi, Bhringraj, Jatamansi, Gammabhari, Shankpushpui, Shikakai, Brahmi, Kapur, Satavari, Til Oil and Coconut oil. Were Purchased from local market of Moradabad and Pudina leaves, Neem leaves, Oleander leaves are collected from Herbal Garden of

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Plant profile of some herbal material used in preparation of Medicated Herbal Hair Oil

Preparation of coconut oil base.

Boil the raw medicinal in a base of coconut oil to make a rich hair tonic. Coconut oil is extracted from kernel through the dry process and the entire process of extracting coconut oil from the dry kernel is described above. It is used as a source of fuel and storage. The crude drug is as follows.

Formulation of medicated herbal hair oil

Table 1 shows the different ingredients used in the production of medicated Herbal Oil. Weigh all dry ingredients carefully and Fresh herbs like jatamansi, neem, amla, shankapushpi, brahmi, reetha, nirgundi, bhringraj, camphor and pudina, Oleander and Til Oil are added. The

above is prepared for 20 minutes. The boiled mixture was filtered A piece of muslin. After filtration, a volume of coconut oil was added to the filtrate. A flavouring agent is added at the end. The oil is mixed together and stored in an amber bottle. (See Figure 2)

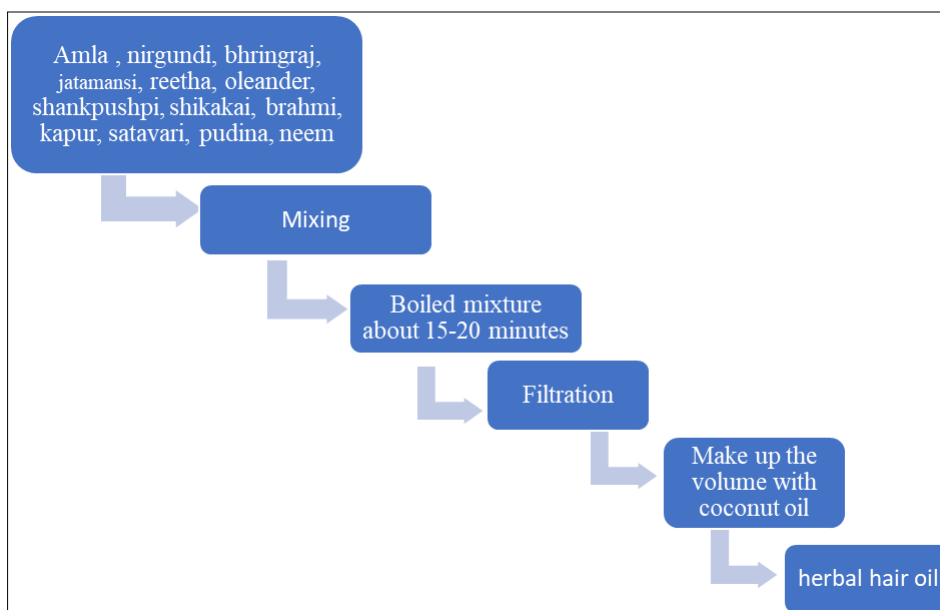












Fig 2: Formulation of medicated herbal hair oil




Table 1: Different herbs used are as follows

S.R. No	Common Name	Biological Source	Figure	Uses
1	Amla	It consists of dried and fresh fruits of the plant <i>Emblica officinalis</i> Gaerth (<i>Phyllanthus emblica</i> Linn.), which belongs to the Euphorbiaceae family.		Amla is dried with fresh fruits of <i>Emblica officinalis</i> . The oil obtained from amla is rich in essential fatty acids that promote the growth of geysers. Massaging the scalp with amla oil increases blood circulation to the scalp, which leads to hair growth.

2	Nirgundi	<p>Nirgundi is an Ayurvedic medicine made from the dried leaves of <i>Vitex negundo</i> (vervain family), a large aromatic shrub or small tree up to 4.5m tall</p>		<p>Nirgundi is already used in traditional systems of medicine such as Ayurveda, Unani and Siddha to treat pain, headache, inflammation, arthritis, rheumatism, rheumatism, asthma, asthma, fever, cold and cough.</p>
3	Bhringraj	<p><i>Eclipta prostrata</i>, commonly known as false chamomile, yerba de tago, Gunta kalagaraku/Gunta galagaraku, Karisalankani and bringraj, is a genus of plants in the Asteraceae family. It is common in most parts of the world.</p>		<p>Bhringraj oil is an effective remedy against scalp infections and hair loss. It has an effective effect on the hair and not only strengthens the hair root, but also restores the natural color of the hair. It treats scalp acne, premature graying and promotes healthy and strong hair growth.</p>
4	Jatamansi	<p><i>Nardostachis jatamansi</i> is a Valerian flower found in the Himalayas. It's the source of Spikenard, a fragrant essential oil. The oil has been utilised as a perfume, traditional medicine, and religious rites since antiquity.</p>		<p>According to Ayurveda, using jatmansi oil to the scalp helps to reduce hair loss and encourage hair growth. This is due to a decrease in bodily traffic, which causes hair loss. Jatmansi or silk oil acts to eliminate hair by balancing the tridosha (vata, pitta, and kapha doshas).</p>

5	Reetha	<p>Rita is a broad-leaved shrub in the Sapindaceae family with the scientific name Sapindus mukorossi. Its scientific name is Sapindus mukorosi, and it is a broad-leaved shrub in the Sapindaceae family.</p>		<p>Reetha is extensively used in cosmetics and shampoos. In shampoo, dry fruit powder is used as a foaming agent. It clears greasy skin secretions and produces a natural lather, allowing it to be used as a cleanser and hair tonic. It is also used to eradicate lice from hair.</p>
6	Oleander	<p>The botanical name of the oleander is Nerium indicum Linn. Organic sources of oleander include dried leaves and seeds. It belongs to the Apocynaceae family. Also known as the Bay of Roses</p>		<p>Oleander has long been used to treat heart disease, asthma, diabetes mellitus, corns, measles, cancer and epilepsy, as well as antibacterial/antimicrobial properties for wound healing.</p>
7	Shankpushpi	<p>The wind pluricalis, botanically known as the wind pluricalis, is a perennial plant native to India. This herb, known as morning glory, morning glory, or aloe, has characteristic arching leaves and bulbous blue or white flowers.</p>		<p>Shankpushpi's rasayana (rejuvenating) characteristics help to prevent premature greying, reduce hair fall, and encourage hair growth.</p>

8	Shikakai	<p>It is made from the fruits of the <i>Acacia concinna</i> Linn plant. (Leguminosae) a medicinal plant that grows in the tropical rainforests of South Asia and is used for washing hair.</p>		<p>It promotes hair development, reduces hair fall, fights dandruff, and gives sheen and brightness to dull hair. Shikakai is utilised in numerous shampoos and conditioners due of its high saponin concentration. This natural foaming agent gently cleanses the scalp and promotes a healthy hair environment.</p>
9	Brahmi	<p>Brahmi <i>Centella asiatica</i> (L.) (syn. <i>Hydrocotyl asiatica</i> Linn.) is a fresh or dried herb belonging to the Umbellifera family.</p>		<p>Brahmi helps treat temporary baldness by promoting hair growth in areas where hair has thinned or receded. It also helps reduce hair loss by treating dandruff and reduces inflammation. Its regular use provides a soothing and calming experience.</p>
10	Kapur (CAMPHOR)	<p>Found in the leaves of the East Asian camphor tree (<i>Cinnamomum camphora</i>); and camphor (<i>Dryolanopes</i> sp.), a giant tree in Southeast Asia. It is also found in many other plants of the laurel family, especially <i>Ocotia usambarensis</i>.</p>		<p>Camphor helps improve blood circulation. It cools the scalp and when the blood flow to the hair roots, you will see strong healthy hair. It also has anti-inflammatory properties, so it reduces swelling. Soothes scalp irritation and improves hair texture</p>

11	Satavari	<p>The drug is obtained from the dried tubers of <i>Asparagus racemosus</i> Willd., which belongs to the Liliaceae family. asparagus. The drug is obtained from the dried tubers of <i>Asparagus racemosus</i> Willd., which belongs to the Liliaceae family.</p>	 <p>A photograph showing a pile of dried, light brown, fibrous tubers of <i>Asparagus racemosus</i> in a white plastic bag. The tubers are thin and elongated, with some branching. A timestamp 'Jun 9, 2023, 12:24' is visible at the bottom left of the image.</p>	<p>Prevents skin irritation caused by skin and scalp itching and promotes hair growth. Stress is one of the main causes of hair loss, it is related to physical and emotional stress that causes hair loss. It also strengthens hair roots by increasing blood circulation.</p>
12	Til Oil	<p>Sesame (<i>Sesamum indicum</i> L.), belonging to the Tubiflora group in the Pedaliaceae family, is an annual herb cultivated for its edible seeds, oil and flavoring properties. Due to its high antioxidant and anti-sweet properties, it is also known as gingelli, tilam, benna and is referred to as the "queen of oilseeds".</p>	 <p>A photograph of a clear plastic bottle of yellowish-orange oil, likely sesame oil, with a yellow cap. The bottle is standing on a white surface. A timestamp 'Jun 22, 2023, 12:24' is visible at the bottom left of the image.</p>	<p>Til oil or sesame oil is a good alternative to expensive hair health treatments that are often associated with harmful side effects. Sesame oil promotes hair growth, eliminates dandruff and helps slow down premature graying of hair. However, be sure to consult a dermatologist before trying new hair treatments.</p>
13	Coconut oil	<p>Coconut, <i>Cocos nucifera</i> (L.), also known as coconut, coco-da-bahia or peanut-coconut, is an important member of the family Arecaceae (palm family) (1). The plant is native to Southeast Asia (Malaysia, Indonesia and the Philippines) and islands between the Indian and Pacific Oceans.</p>	 <p>A photograph of a blue plastic jar of Parachute brand coconut oil. The jar has a white label with a green logo and the text 'Parachute' and '100% Pure Coconut Oil'. The jar is sitting on a light-colored tiled floor. A timestamp 'Jun 24, 2023, 13:33' is visible at the bottom left of the image.</p>	



14	Pudina	Peppermint contains the dried leaves and petals of <i>Mentha spicata</i> Linn, which belongs to the mint family.		Mint leaf extract is a source of carotene and antioxidants that promote hair growth and prevent hair loss. The powerful antibacterial and antifungal properties of mint leaves can treat dandruff, lice, etc.
15	Neem leaves	Neem <i>Azadirachta indica</i> consists of all parts of the plant used medicinally. Also known as margoza, Indian lilac and Indian azadirachta.		Neem oil is a natural byproduct of the Neem tree, which grows mainly in India. This oil is produced from the fruits and seeds of plants. This "miracle plant" is widely used in traditional medicine and has been proven to have anti-inflammatory and antibacterial properties.

Table 2: Ingredients of Medicated Herbal Hair Oil

S.R. No	Common Name	Quantity %
1	Amla	85
2	Nirgundi,	2
3	Bhringraj	10
4	Jatamansi	3
5	Reetha	5
6	Oleander	3
7	Shankpushpui	3.5
8	Shikakai	4
9	Brahmi	7
10	Kapur	1
11	Satavari	2.5
12	Til Oil	63
13	Coconut oil	37
14	Pudina	1
15	Neem	2.5
16	Flavouring agent	2

Evaluation of Ayurvedic Herbal Oil: [12, 13]

The formulated Medicated herbal oil was subjected to physical and biological evaluation.

Chemical Evaluation**Acid value**

Prepare 0.1 M: Weigh 0.56 g of KOH globules and dissolve in 100 ml of distilled water and shake. The resistance was prepared with 0.1 mol KOH solution in burettes. Sample preparation: 10 ml of oil and Dissolve 25 mL of ethanol and 25 mL of ether in the mixture and stir. 1 ml of phenolphthalein solution was added and adjusted to 0.1molar KOH solution.

Saponification value Accurately weigh

1 ml of oil is carefully taken into a 250 ml conical flask and 10 ml of ethanol: ether (2:1) mixture is added. Active 25 ml of 0.5 KOH nitrous alcohol was taken from this glass. Keep the bottle for 30 minutes and 0.5 N HCl using a phenolphthalein indicator in a vial. A blank titration without oil removal (sample) was carried out in a similar manner. The amount of KOH used was calculated in mg

Ph

The pH of the medicated hair oil was determined using a pH meter. A common instrument used to measure pH is more

accurate. This lab instrument is called a probe and meter, or at least a pH meter. The probe consists of a glass and a small electrode. The tension must pass. The meter, a voltmeter, measures the electronic resistance across a glass electrode and displays pH units instead. Volt pH meters are calibrated before using two liquid standard transducers of known pH. To measure It is created by immersing the probe in a liquid until a reading is registered on the meter.

Viscosity: The viscosity of Medicated hair oil was determined using Ostwald's viscometer

Specific gravity

Take the specific gravity bottle, wash it with boiling water, dry it in the oven for 15 minutes, then cool it, cover it with a cloth and weigh it.

- Now fill one bottle of this specific weight with a test tube, cover with plastic wrap and weigh again
- Select the weight of sample per milliliter.

Sensitivity test

The prepared Ayurvedic vegetable oil is applied on 1 cm of the skin of the hand and exposed to the sun for 4-5 minutes.

Biological evaluation

Skin irritation test

The skin of the hind wings of the mice was deformed with the help of an electric shaver, followed by the application of a depilatory cream. Bare territory. It was kept visually for any irritation or erythema for the next 24 hours, and the same test was performed after application. Test samples on exposed areas except for extended periods of up to 48 hours.

Result and Discussion

Table 3: Evaluation Parametrs

Sr.No	Parameters	Observation
1	Colour	Greenish brown
2	Odour	Characterstics
3	Specific gravity	1.09
4	Viscosity	0.961poise
5	pH	6.8
6	Acid value	4.5
7	Saponification Value	111.2
8	Irritation Test	No irritation
9	Refractive Index	1.4

Conclusions

Various components of the plant extract such as minerals and amino acids can contribute to the effective functioning of the hair. All these products not only show amazing activity but also have no side effects compared to synthetic drugs. That's why this multi-herbal hair toner is cooling, heavy duty hair fall and stress reliever. It penetrates the scalp in a very short time, so it works to nourish the hair. It acts as a natural hair nutrient, reducing hair fall and promoting hair growth. It is also used as an anti-dandruff

treatment due to the addition of neem. Amla and Eclipta alba help thicken and darken hair. Hibiscus helps soften hair, leading to healthy growth. A mixture of dry herbs and whole herbs with the right amount of coconut oil will provide a permanent solution to hair fall and promote healthy hair growth. This hair toner is also best for treating headaches due to its cooling effect, thus relieving stress and anxiety. It has shown excellent results in hair growth without any reactions or side effects as it is made entirely of healthy natural ingredients.

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