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Review Article

Herbal hair oil

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ABSTRACT

It has been demonstrated that using herbs and natural remedies to encourage hair growth works well. For both men and women, hair loss is a serious problem that frequently results in issues including excessive hair shedding, dandruff, and fading hair color. Numerous chemical therapies exist for hair loss, but they can have detrimental side effects and offer no long-term solution. The creation of a natural hair oil that can treat hair loss and other hair-related problems is the primary objective of this project. Ginko biloba, Bacopa monniera, Allium cepa, and Phyllanthus Biloba While there are many different kinds of allopathic medications for treating hair loss, they all have numerous negative effects. Any research on medications uses herbs as a source. Because herbal medications have fewer negative effects than synthetic ones, over 80% of respondents suggested using them. The construction of hair is quite easy. Keratin is a protein that is extremely abundant in hair. Shampoo is a hair care product used to clean hair, typically in the form of a sticky liquid. Dandruff, thinning hair, bluntness, early graying of the hair, molding, baldness, noisy hair, and lack of hair volume are some of the issues that are linked to it. Baldness typically occurs for a variety of reasons, including bluntness, hair loss, and dandruff, among other things. The main causes of baldness include moisturizing, promoting hair growth, enhancing blood flow to the scalp, preventing dandruff, and thickening hair. The herbal hair oil formulations were evaluated for a number of characteristics, including as color, texture, odor, and sedimentation. Additional tests assessed its acidity (acid value), viscosity (thickness), specific gravity (weight in relation to water), and stability (ability to remain constant over time). It is evident from these testing that the herbal air oils are of excellent quality.

INTRODUCTION

Along with other structures like sebaceous glands, sweat glands, and nails, hair is an essential component of the body that acts as a protective feature. The three primary components of hair are the root, which is the portion of the hair beneath the skin, the shaft, which is the portion above the skin, and the bulb, which is a base swelling

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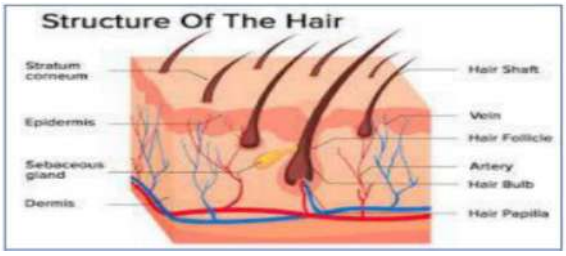
originating from the dermis.[1] In the global market, herbal cosmetics were gaining a lot of traction. Herbal cosmetics come in a variety of forms and are used to improve appearanceIt is safer for our skin to use herbs in cosmetics. Since ancient times, the concept of beauty and cosmetics has existed. People utilize a variety of herbal-based beauty products to seem young and attractive. The globe is familiar with Indian herbs and their applications (Sanju et al., 2006).[3]. Herbal extracts, as the name suggests, are derived from plants. Plant roots and flowers have been utilized for ages. The Vedas and Unani literature are examples of ancient manuscripts that contain this information. According to this information, chemical medications can occasionally have negative side effects and aren't always the best option to treat people's health problems. The use of natural goods and plants is popular these days. Indian botanicals are used extensively in the cosmetics business Hair tonics are hair oils that contain herbal components. They are improved when these herbal extracts are combined with oil. Hair issues like dry hair, balding, graying hair, and hair loss are treated using hair oils.Amla, Henna, Neem, Methi, Lemon, Tulsi, Brahmi, Shikakai, Reetha, licorice root, Musk root, Mahabhringraj, Jantamasi, Chitraka, marigold, hibiscus, nutmeg, parsley, rosemary, and thyme are just a few of the numerous plants that are utilized to aid in hair care (Bhatia 2001)[5]. Because herbal remedies are more effective and have fewer adverse effects, people frequently give them more consideration (Pooja et al. 2009)[6].



Hair Growth and Structure: The root and the shaft make up the fundamental structure of hair. These components are found beneath the epidermis, inside a hair follicle. The portion of the hair that is visible above the skin is called the shaft, and the root finishes in a bulb at the bottom. The strong protein that provides hair its strength is called keratin.Beauty and Cosmetics Since the dawn of human society, beauty and cosmetics have existed. To look young and attractive, people utilize beauty products that contain herbs. The advantages of Indian plants are widely recognized. Herbal extracts are manufactured from the parts of herbs, as the name implies. This technique is quite old, having been used since found.The sacred Vedas and Unani texts are the source of the concepts. People become aware that chemical medications can have negative side effects and aren't always effective.Many men and women have hair loss as a result of issues like radiation, accidents, hazardous chemicals, pollution, and hormone imbalance. This is crucial for developing novel treatments for hair loss. It's a skin condition that justifies searching for natural hair growth products.For people of all genders and races, hair loss is a major problem. It has existed for a while and may have an impact on people's lives and sense of self.

Hair typically has two main parts:

- **Hair follicle**. The biological mechanisms responsible for hair growth take place in the hair follicle.

- Hair shaft: The hair shaft is the dead part of the hair, mainly made

Hair type: Hair type is primarily on hair curl pattern. The amount of curl in the hair is determine by hair follicle. Hair type is determined by genetics.

- Type 1-Straight.
- Type 2-Wavy.
- Type 3-curly.
- Type 4-Coily.

Hair growth cycle passes through 4 stages

i. Anagen (growing stage).

ii. Catagen (transition phase).
iii. Telogen (resting phase).
iv.Exogen (phase

History

The term "sneha" has two meanings in ancient Indian Sanskrit: "to oil" and "to love," thus the association is not purely coincidental. One of the key head-related customs of the 5,000-year-old Indian practice of Ayurveda has gained popularity in today's wellness culture: hair oiling

Herbal hair oils have been used for many years in different cultures. In ancient India, oils made from herbs like amla, bhringraj, and neem were used to improve hair health. Similarly, in Traditional Chinese Medicine, herbs like ginseng and angelica were used to help hair grow and keep the scalp healthy. These oils were usually made using traditional methods, mixing herbs with base oils like coconut or sesame. Over time,these practices spread and changed, combining with modern products while still keeping their original traditions.

Common Hair Problems

In Ayurveda, hair problems are divided into three categories: Khalitya (hair loss), Palitya (premature graying), and Indralupta (patchy hair loss, complete baldness, or overall baldness). These problems can appear in various forms:

1. **Congenital Hair Growth Problems**: These are genetic issues, not caused by the environment. They are also called hypertrichosis because they affect hair follicle development during the embryo stage. This is a type of hair loss.

2. **Acquired Hair Growth Problems:** These are more complex and are caused by biological factors that impact hair growth.

3. **Split Ends:** This is a common issue for women. It occurs when hair is dry and brittle, causing it to split at the ends.

4 . **Frizzy Hair**: This happens when hair becomes very frizzy and difficult to manage.

Different Hair oils used in day-to-day life

i. Parachute coconut oil.
ii. Dabur amla hair oil.
iii. Patanjali hair oil.
iv. Virgin coconut oil.
v. Ultra doux hair oil.

Benefits of herbal hair oil:

Herbal hair oil is very popular because it offers many benefits for your hair. It contains important plant extracts and a mix of antioxidants and nutrients that work together to improve the health of your hair.

Here are some key benefits of using herbal hair oil:

- Adds strength and flexibility to dry and brittle hair.
- Nourishes both the scalp and hair.
- Protects the scalp from sun and wind damage.
- Helps reduce dandruff.
- Stimulates hair growth.
- Makes hair shinier and softer.
- Strengthens hair follicles to prevent hair loss.
- Provides natural benefits for your hair..

The cause of hair loss

Hair loss can be caused by a number of circumstances, some of which are listed below: acute sickness.

• Autoimmune diseases

• Chemicals (hair dyes); • Drugs and substances used in chemotherapy.
Diabetes; postpartum hair loss; and hair styling products
• Methods of hair style • Inadequate nutrition
• Additional fungal infections
• Poisons
• Inadequate blood flow

Hair loss symptoms and indicators could include:

The most prevalent kind of hair loss, which affects both men and women as they age, is gradual thinning at the front of the head. Men's hair frequently begins to fall back from the forehead in an M-shape. Women typically endure a broadening portion of their hair but maintain their forehead hairline. Hair loss throughout the body: Chemotherapy for some malignancies and other medical diseases can cause hair loss throughout the body. This hair usually regrows.
Scaling patches that appear all over your scalp are a sign of ringworm. Hair loss, redness, edema, and even pus may accompany it.

Figure 2 Symptoms of Hair loss

Types of Hair Loss

a**) Early Stage Patchy Hair Loss** - This is a common issue where the body's immune system mistakenly harms hair follicles, causing hair to fall out in small, round patches on the scalp and sometimes other parts of the body. It usually starts with one or more small, smooth, hairless patches. Mild Episodic Patchy Hair Loss - People with this type have repeated, short periods of patchy hair loss but never lose all the hair on their scalp or body.

b**) Severe Patchy Hair Loss** - In this stage, the condition is more serious, and some people may lose all the hair on their scalp (Alopecia Totalis) or all body hair (Alopecia Universalis).

c**) Ophiasis Patchy Hair Loss** This kind of patchy hair loss typically affects the back or sides of the scalp and has a band-like appearance. Because medications take longer to act in certain locations, treatment is more difficult.

DIFFERENT TYPES OF DANDRUFF

Although it mostly affects the scalp, dandruff can occasionally spread to other areas of the body. These are the primary kinds. There are various types of dandruff, just as there are numerous causes. They are categorized according to their causes.

seborrheic dermatitis. Anywhere on the body, but particularly in creases like the nose, under the arms, and behind the ears, it might appear. Though it can occur elsewhere, it is also frequently seen on the back of the head and neck. Individuals with this type may develop sores and frequently have red, itchy skin and scalp.Scalp Hair Loss: This disorder causes hair loss throughout the entire

Dandruff from fungus: Everyone's scalp has a kind of fungus called malassezia. Normally, it stays in small, harmless amounts because it's kept in check. But sometimes, it grows faster than usual. This often happens when the scalp makes too much oil, which is what the fungus feeds on. This helps the fungus grow a lot. When there's too much of it, it makes a lot of oleic acid, a substance that can irritate the scalp. This irritation makes the scalp produce more skin cells, which means more dead skin cells are made quickly. When these dead skin cells mix with the scalp's oil, they form dandruff flakes caused by the fungus.

Oily dandruff: Although many people think that dry skin causes dandruff, an oily scalp can also cause it. This occurs when the scalp produces too much sebum, an oil. This may be brought on by excessive oil production or insufficient hair shampooing. Dandruff, which can also cause irritation, is created when oil from an unclean scalp mixes with debris and dead skin cells.

What Causes Dandruff?

Dry Scalp A dry scalp is the main cause of dandruff, but there are other causes as well. It is a very prevalent hair problem that affects a lot of people. This issue may cause your scalp to feel dry, itchy, and inflamed. It can cause you to feel awkward or ashamed, even though it's not a major health issue.

Here are some common causes:

- dry scale
- Not Keeping Clean
- Skin Problems

Types of Hair Dye

Temporary

* This kind of hair coloring is used to change the hair color for a short time.
* The dye doesn't go deep into the hair or the skin around it.
* It can usually be washed out easily with just one shampoo.

Semi-Permanent Dye

* The most popular basis is shampoo.
* The performance of the color can be enhanced by adding a solvent.

These colors are typically primary, which means that because they are cationic, they adhere to hair naturally.

Permanent

* Top-rated and widely used hair dye products.
* The color is added during the final step and isn't present in the solution before use.
* They can cause some harm to the hair

Drug profile

coconutoil

family-aceraceae,scientific name cocos nuciffera L

part used-kernel oil

geographical location :southern india

active constituents- fattfy acid capric acid lauric acid

uses-used as vehicle promotes hair growth and moisture the hair folicle

Tilloil
Family -pedaliaceae.
Scientific name – S.indicum
Part used –seeds oil
geographical location – middle east states off india

costor oil
Family-euphorbiaceae
Scientific name-ricinus commumis L
Parts used- Seeds oil.
Geographical location -Gujrat in western india
Active constituent- phytosterol tocopherol carotenoid
Uses- lubricate the hair increase the flexibility and alos tred dandruff

Almond oil
Family- rosaceae
Scientific name- prunus dulcis
Part used- dried kernels of almond tree
Geographical location- northern india
Active constituent -palmitic acid linoleic acid aleic acid
Uses -strengthen the hair protect the hair sunlight uses as scale treatment

Currvleaves
Family- rutaceae
Scientific name- murraya koenigii.
Part uses- leaves
Geographical location- subtropical tropical Regions through asia
Active constituent- bismahanine murrayanine murrayazolinol

Methileaves/Fenugreek:
Family- Fabaceae.
Scientific name- Trigonella foenum-graecum.
Parts used- Seeds.
Geographical location: Maharashtra.
Active constituents- Trimethylamine, Trigonelline,Quercetin.
Uses- Reduce dandruff, promotes hair growth and shows anti-fungalactivity.

Jasmineoil:
Family- Oleaceae.
Scientific name- Jasminum officinale.

Parts used- Oil of jasmine oil.
Geographical location- Tamil Nadu.
Active constituents-Benzyl acetate, Linalool Benzyl alcohol.
Uses-Flavoringagent.

Moringa:
Family- Moringaceae.
Scientific name- Moringa oleifera.
Parts used- Leaves.
Geographical location:- Southern states of India.
Active constituents- Flavonoids, glycosides, alkaloids.
Uses- Strengthen the hair andmoisturizesscalp.

Rawgarlic:
Family- Amaryllidaceae.
Scientific name- Allium sativum.
Parts used- Bulbs of the garlic.
Geographical location-Gujrat, Madhya Pradesh, Maharashtra and Rajasthan.
Active constituents- Diallyl thiosulphate, Diallylsulfide, Diallyl
Trisulfide.
Uses- Shows antimicrobial properties and contain vitamin C helps to promote
hair growth

Pumpkinseeds:
Family- Cucurbitaceae.
Scientific name- Cucumis sativus.
Parts used- Seeds.
Geographical location- West Bengal and Uttar Pradesh
Active constituents- Palmitic acid andStearicacid.
Uses- Contains cucurbitin responsible for hair growth

Betal leaves
Family- piperaceae
Scientific name- piper betle
Part uses- leaves
Geographical location -assam Andhra Pradesh Gujrat
Active constituent- alecoline vitamin C thiamine niacin
Uses- for quik hair growth

Cedarwood oil
Family- pinaceae
Scientific name- cedrus
Paer used- cedarwood oil
Geographical location- himachal Pradesh uttarkhand jammu and Kashmir
Active constituent- methyl thujate and thujic acid
Uses -clean the scale removing dirt and dandruff

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Formulation and evalution

INGREDIENTS	QUANTITY (%)
coconutoil	60%
Till oil	15%
Almond oil	2%
Cedarwood oil	2%
Castor oil	3%
Curry leaves	1%
Moringa leaves	4%
Raw garlic	4%
jamine	2%
Betel leaf	3%
fenugreek	2%
Pumpkin seeds	2%

Procedure :-
Accurately measure the fresh and dried herbs. curry leaves, betel leaves, and garlic.
For half an hour, a blend of castor oil, coconut oil, until oil, almond oil, and herbal products was heated. A muslin cloth was then used to filter the hot liquid. To get the appropriate amount, coconut oil was added to the filtered liquid after it had been filtered. The oil was then mixed with a flavoring ingredient and transferred into a bottle.

Formulation and evalution

HAIR OIL TEST

The performance of the herbal hair oil, including its chemical and physical characteristics, was evaluated.

1. Organoleptics Properties

 Color: Checked with the naked eye
 sensitivity: applied to the skin and exposed to sunlight for five minutes to check for skin irritation.
 Grittiness: Rubbed on the skin and observed
 Sedimentation: Left undisturbed overnight to see if any particles settle at the bottom

2. pH Level

Use a pH strip and dip it into the hair oil to see the color change, which indicates the pH level.

3. Viscosity

Determine the hair oil's thickness. Ostwald's Viscometer was used to measure the herbal hair oil's viscosity at room temperature. The viscosity was determined using the following formula:
Viscosity of the oil (η2) = (Ƞ1 x ƒ2 x t2) / (ƒ1 x t1)
Where:
- Ƞ1 is the viscosity of water

- ƒ2 is the density of the oil sample
- t2 is the average time it takes for the oil to flow from point A to point B
- ƒ1 is the density of the oil- t1 is the average time it takes for water to flow from point A to point B

4. Acid Value

We mixed 10ml of oil with 25 ml of ethanol and 25 ml of ether We added phenolphthalein as a color indicator and then used a 0.1M potassium hydroxide solution to titrate it.

n = Amount of 0.1 M used in ml

w = Weight of the oil

5. Specific Gravity

We found the specific gravity of the prepared oil using a special bottle designed for this purpose.

6. Stability Study

We tested the stability of the herbal hair oil by storing it in a closed container in a cool, dry place for 20 days.

RESULT

1**)Organoleptic Property**:-

- **Color**:- Dark greenish brown
- **Sensitivity**:- No Irritation
- **Grittiness**:- Smooth
- **Sedimentation:-** No Sedimentation

2**) pH value** :- 5.9

3)**viscosity**:- 0.92

4)**Acid Value**:- 5.2

5)**Specific gravity**:- 1.09

6)**Stability test:-**

SR NO	Color	Sensitivity	grittiness	Sedimentation	Ph value	viscosity	Acid Value	Specific gravity
F1	Dark greenish brown	No irritation	smooth	No	6.2	0.94	5.2	1.01
F2	Dark greenish brown	No irritation	smooth	No	6.0	0.94	5.1	1.02
F3	Dark greenish brown	No irritation	smooth	No	6.1	0.93	5.2	1.02
F4	Dark greenish brown	No irritation	smooth	No	5.9	0.92	5.2	1.09
F5	Dark greenish brown	No irritation	smooth	No	6.2	0.93	5.1	1.06

Future scope

The primary goal of this study is to create a hair oil using plant-based ingredients. The prepared herbal hair oil was tested for several characteristics to ensure it meets acceptable standards. These tests included checking for phytochemicals, sensory qualities, specific gravity, pH level, viscosity, acid value, saponification value, refractive index, and stability. The oil's antimicrobial properties were tested using the zone inhibition method, which helps in reducing dandruff and nourishing the scalp. Additionally, the oil's antioxidant activity was measured using the DPPH radical scavenging method.

CONCLUSION

This study offers guidance on using natural plant-based components in the making of hair oils that are safe and have few or no side effects. The tests conducted indicate that all components are within acceptable ranges, and these oils are beneficial for promoting healthy hair growth. Natural oils supply essential nutrients that support the normal functioning of the oil glands in the scalp and encourage hair growth. The use of natural

cosmetic products has greatly increased in personal care and health systems. Therefore, there is a strong demand for natural cosmetic products in the personal care and health industry, which is currently focusing more on developing natural-based cosmetics. This sector is rapidly growing and has significant potential for expansion in the coming years. The inclusion of bioactive components in cosmetic products positively affects physical features and provides necessary nutrients.

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