

Utilization of Herbs in Herbal Hair Oils: A Comprehensive Review

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ABSTRACT: Hair plays a crucial role in personality of human and population use a lot of cosmetics products for the care of hair. Various hair oil products utilize by individuals for enhancing patient adherence to treatments of hair care related issues. It contains various ingredient due to their synthetic nature they show little more adverse effect like allergic reaction, scalp irritation, eye irritation, acne. Because of this the importance of herbal oil and their use are increases day by day in the common hair problem such as baldness, hair fall, hair dryness, dandruff etc. A variety of herbal ingredients are incorporated into herbal hair oil formulations, supplying important nutrients like vitamins and antioxidants. These formulations are widely employed to nurture and shield hair from issues like hair loss and damage. This comprehensive review focuses on the role of herbs in herbal hair oils, offering an extensive exploration of their botanical diversity, traditional applications, phytochemical composition, and proven benefits. Herbs play a pivotal role in promoting hair growth, maintaining scalp health, and enhancing hair aesthetics, making them invaluable in the realm of natural hair care, and also sheds light on the rich heritage of herbs in herbal hair oils and their contemporary significance, emphasizing their potential in modern hair care practices.

Keywords: Herbal hair oil, Cosmetic, Herbs, Hair care, Antidandruff.

I. INTRODUCTION:

Hair, primarily composed of alpha-keratin, grows from follicles in the dermis and is a defining feature of mammals. While much attention is given to aspects like hair growth, types, and care, it's essential to remember that hair serves various functions in addition to aesthetics. Furthermore, the cultural and historical significance of hair, including various styles and removal practices, can be quite diverse, often reflecting individual beliefs, social roles, age, gender, or religion.⁽¹⁾In the animal

kingdom, as well as among nonhuman primates, hair plays a role in maintaining temperature through heat retention or preventing cold. It can also serve functions such as camouflage and acting as a sexual attractant in some species. In humans, our hair differs from that of primates, being thinner and lighter. Human hair contributes to our ability to regulate temperature through sweating and also functions as a sensory organ. Additionally, it provides protection from environmental elements, including shielding the scalp from the effects of UV radiation.⁽²⁾

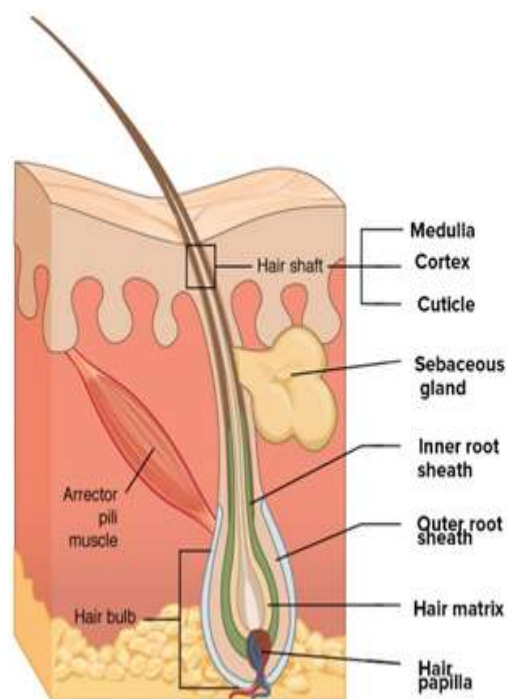


Fig 1. structure of the hair⁽³⁾

Every hair consists of two main parts: the hair shaft and the hair root. The hair shaft is the part of the hair that's visible above the skin's surface. Meanwhile, the hair root is located beneath the skin and extends deeper into the skin layers. It is enclosed within the hair follicle, a protective

sheath made of skin and connective tissue, which is also linked to a sebaceous gland.⁽⁴⁾

Human head hair follows a distinct hair growth cycle consisting of four primary phases:

- Anagen phase
- Catagen phase
- Telogen phase
- Exogen phase, also known as early anagen phase.

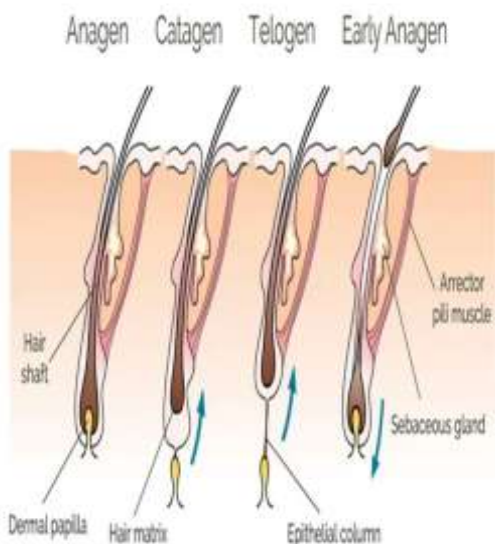


Fig 2. Hair growth cycle⁽⁵⁾

Anagen: This is the active growth phase where around 85% of hair is actively growing, and melanin is produced in the hair bulb.

Catagen: In this transition phase, hair growth stops, and the hair becomes detached from the follicle. The follicle shortens as the hair bulb breaks down. About 1% of follicles are in catagen.

Telogen: The resting phase where hair does not grow but remains attached to the follicle. Approximately 10-15% of hair is in this phase at any given time. At the end of telogen, the follicle reenters the anagen phase, initiating the growth of a new hair.

Exogen: This phase marks the end of the hair growth cycle and can be seen as a continuation of the telogen phase. During this phase, hair strands are shed from the hair follicles, a process commonly referred to as hair shedding.⁽⁶⁾

Herbal Hair Oil-

Hair oils have been utilized worldwide for centuries, yet their precise impact on hair and the scalp remains somewhat enigmatic. These oils are readily available and cost-effective. An extensive

range of oils has been employed, with new options emerging regularly. While the main purpose of most hair oils is to function as emollients, the distinct properties of these oils imply that their effects go beyond mere moisturization.⁽⁷⁾ The Charaka Samhitha, a pivotal text in Ayurvedic medicine, emphasizes the significance of oiling the hair and scalp as a means to preserve hair health and avert hair loss. The tradition of daily hair oiling, incorporating specific herbs tailored to individual needs, continues to this day. These hair oil formulations are designed not only to address issues like dandruff, hair loss, and split ends but also to soothe the scalp and promote the lush growth of hair in both men and women.⁽⁸⁾

Types of herbal hair oil available in worldwide market-

- Coconut hair oil
- Almond hair oil
- Castor hair oil
- Argan hair oil
- Olive hair oil
- Amla hair oil
- Fenugreek hair oil
- Sesame hair oil
- Linseed hair oil
- Mustard hair oil⁽⁹⁾

Hair oils offer several advantages: Natural oils are packed with vitamins, antioxidants, and essential fatty acids that are crucial for maintaining a healthy scalp and hair. Choosing the right hair oil for your specific hair type and texture can benefit everyone.

- They maintain scalp moisture, keeping it well-hydrated.
- They support hair growth by providing essential nutrients to the hair follicles.
- Hair oils strengthen and shield your hair from external damage, such as harsh chemicals or pollutants.
- They help prevent hair damage.
- Regular use of hair oil can enhance hair shine and luster.
- Hair oil can contribute to delaying premature graying by addressing vitamin deficiencies.
- Effective in hair fall caused by a dry scalp exposed to environmental stressors.⁽¹⁰⁾

Herbs used in herbal hair oil formulation-A growing share of the worldwide market is dedicated to herbal cosmetics, which are cherished as precious gifts from nature. Nowadays, you can

readily discover herbal cosmetic products available in an array of fragrances and hues, catering to diverse beauty routines. Utilizing herbal extracts in herbal hair oil cosmetics, particularly in small

quantities, poses no harm to the skin. The rising acclaim of herbal hair oils in hair treatments can be attributed to various compelling factors.⁽¹¹⁾

Table No. 1 Different herbs used in herbal hair oil formulation.

Sr. No	Botanical name	Common Name	Family	Chemical Constituents	Use
1	Eclipta prostrate	Bhringraj	Asteraceae	Alkaloids, flavanoids, terpenoids	promoting hair growth
2	Phyllanthus Emblica	Amla	Euphorbiaceae	Ascorbic acid, Ellagic acid, Gallic acid	stimulate hair growth, and prevent prematurely gray hair
3	Ocimum tenuiflorum	Tulsi	Lamiaceae	Eugenol, Linalool, Carvacrol.	maintain scalp health.
4	Senegalia ruguta	Shikakai	Fabaceae	Alkaloids, Tartaric acid, Citric acid.	Controls hair fall, Prevents dryness
5	Rosa- sinensis	Hibiscus	Malvaceae	Polyphenols, Anthocyanins	stop hair loss.
6	Cocos nucifera	Coconut	Arecaceae	Lauric acid, mristic acid, caprylic acid	heals damaged hair by softening, hydrating
7	Azadirachta indica	Neem	Meliaceae	Nimbin, Salannin	help eliminate dandruff and strengths your hair.
8	Allium cepa	Onion	Amaryllidaceae	Methanol, acetic acid	encourages hair regrowth
9	Aloe vera	Alovera	Aphodelaceae	Chromone, anthraquinone	reduce scalp irritation, moisturizing effect
10	Asparagus racemosus	Shatavari	Asparagaceae	Mucilage, alkaloids.	strengthens the hair roots, as well as can be helpful in their growth

Eclipta prostrate-



Fig 3. Eclipta prostrate

Common name- is commonly known as False daisy or Ink plant in English and locally known as Bhringraj, Bhumiraj, Aali jhar, and Nash jhar in Nepali language

Family- Asteraceae

Plant Description- *E. prostrata* is a medium-sized, branched, annual herb with white flowers that naturally thrives in tropical and subtropical regions across the globe. It predominantly flourishes in damp locations like the fringes of swamps, riverbanks, lakesides, and the edges of rice fields. This plant is easily propagated and has spread extensively in countries including China, India, Nepal, Brazil, as well as various other parts of the world. Its presence is widespread in tropical and subtropical areas of Asia, Africa, and South America.⁽¹²⁾

Role- Promotes hair growth by inducing anagen in telogen (resting) phase hair follicles, also treats and prevents premature greying of hair.⁽¹³⁾

Phyllanthus Emblica-



Fig 4. Phyllanthus Emblica

Common name- In India they are known as emblic myrobalans and gooseberry tree, Malacca tree in English, and in Hindi known as amla

Family-Euphorbiaceae

Plant Description- The fruits are yellowish-green, round, fleshy, and have a smooth surface with a six-celled nut that is obovate and obtusely triangular in shape.⁽¹⁴⁾

Role- helpful in hair growth, protect the hair from external damage, it reduces hair loss, help balance a flaky scalp⁽¹⁵⁾

Ocimum tenuiflorum-



Fig 5. Ocimum tenuiflorum

Common name- Holy basil or Tulsi

Family-Lamiaceae

Plant Description- The fruits are yellowish-green, round, fleshy, and have a smooth surface with a six-celled nut that is obovate and obtusely triangular in shape. These fruits are commonly used in cooking to prepare pickles, chutneys, and as a vegetable ingredient in various dishes.⁽¹⁶⁾

Role- help prevent hair fall, reduce greying of the hair and keep it thick and black, reduce dandruff, help to prevent dry scalp.⁽¹⁷⁾

Senegalia ruguta-



Fig 6. Senegalia ruguta

Common name- Shikakai, Soap-Pod

Family-Fabaceae

Plant Description-Senegalia ruguta is a thorny plant known for its variable growth patterns, ranging from a shrub that can either climb into other plants or grow into a small tree, sometimes reaching heights of 7.5 to 18 meters, with occasional specimens reaching up to 30 meters. This plant typically features multiple main stems, some of which can be as wide as 10 centimeters in diameter.⁽¹⁸⁾

Role-promotes hair development, controls hair fall, battles dandruff, and adds bounce and sheen to lifeless hair.⁽¹⁹⁾

Rosa- sinensis-



Fig 7. Rosa- sinensis

Common name- Hibiscus, Rosa della Cina, China-rose.

Family-Malvaceae

Plant Description-The deep-red flowers of this plant are a testament to its Asian heritage, reflected in its name "rosa-sinensis," which translates to "rose of China." Hibiscus rosa-sinensis is a lush, evergreen shrub or petite tree that typically reaches heights of 2.5 to 5 meters (8 to 16 feet) and spreads to a width of 1.5 to 3 meters (5 to 10 feet). This plant boasts a well-developed taproot, along with its bushy and branched growth structure.⁽²⁰⁾

Role- In the context of promoting hair growth, it was found that the extract derived from the leaves of Hibiscus rosa sinensis demonstrated greater efficacy compared to the extract from its flowers, with the minoxidil-treated area exhibiting the highest recorded level of hair growth.⁽²¹⁾

Cocos nucifera-



Fig 8. Cocos nucifera

Common name- coconut, coco, coco-da-bahia, or coconut-of-the-beach.

Family-Arecaceae

Plant Description- This tree, known as the giant coconut, reaches a towering height of about 25 meters with a thick canopy. Its root system is fasciculate, and it boasts an unbranched stem crowned with a tuft of leaves that protect a single apical bud at its tip. The pinnate leaves are feather-like, consisting of a petiole, rachis, and leaflets. In favorable conditions, giant adult coconuts produce 12 to 14 inflorescence spikes annually, while their dwarf counterparts can yield 18 spikes within the same timeframe.⁽²²⁾

Role- help to repair split ends, make hair shiny and smooth, help to fight against dandruff, give strength to the cuticle.⁽²³⁾

Azadirachta indica-



Fig 8. Azadirachta indica

Common name- Neem

Family- Meliaceae

Plant Description-Abundantly found in tropical and semitropical areas such as India, Bangladesh, Pakistan, and Nepal, this fast-growing tree can

reach heights of 20–23 meters. It features a straight trunk with a diameter of approximately 4-5 feet. The leaves are compound and imparipinnate, typically consisting of 5–15 leaflets. The tree's fruits are green drupes that transform into a vibrant golden yellow when they ripen during the months of June to August.⁽²⁴⁾

Role- promoting hair growth, help to dandruff-free and frizz-free hair, also reduce hair fall problems⁽²⁵⁾

✚ Allium cepa-



Fig 8. Allium cepa

Common name- Cyvannulli in Malayalam, Pyaj in Hindi, Miruli in Kannada, Onion in English, and Piazi in Farsi

Family-Liliaceae

Plant Description-Onion flowers are typically small, coming in shades of purple or white. The plant has a shallow root system, and its stem at the base is short and flattened, gradually thickening as it grows. The leaves are long, linear, hollow, and cylindrical in shape. As the plant matures, the leaf bases become thick and eventually form a bulb.⁽²⁶⁾

Role-hair re-growth, effective in oral therapy of patchy alopecia areata, also help to promote the growth of thick, healthy hair⁽²⁷⁾

✚ Aloe vera-



Fig 8. Aloe vera

Common name- Aloe, Alovera

Family-Aphodelaceae

Plant Description-Aloe is a succulent plant resembling a cactus, thriving in arid, hot climates. It is grown in subtropical regions across the globe, including the southern border regions of Texas, New Mexico, Arizona, and California.⁽²⁸⁾

Role-strengthens the hair, manages excessive oiliness in the hair, alleviates scalp itchiness, provides defense against UV damage, promotes hair growth.⁽²⁹⁾

✚ Asparagus racemosus-



Fig 8. Asparagus racemosus

Common name- Shatavari, Satawar, Satamuli.

Family-Liliaceae

Plant Description-A. racemosus is widespread in Sri Lanka, India, and the Himalayas. It typically reaches heights of one to two meters and thrives in the stony, rocky soils of elevated piedmont plains, usually found at elevations between 1,300 to 1,400 meters.⁽³⁰⁾

Role- help to promotes hair growth, provide nourishes and strengthens hair, useful as moisturizes and conditions, help soothes scalp irritation, also enhances hair luster.⁽³¹⁾

II. CONCLUSION:

In this comprehensive review, we have delved into the intricate world of herbal hair oils and the pivotal role of various herbs in their formulation. The exploration of these natural ingredients, their properties, and their efficacy in promoting hair health has underscored the enduring significance of traditional herbal remedies in modern hair care. It is evident that the utilization of herbs in herbal hair oils has the potential to revolutionize the beauty industry, providing a sustainable and natural approach to maintaining and enhancing hair quality. As we conclude this review, it is imperative to acknowledge the wealth

of knowledge and wisdom inherited from ancient traditions and to encourage ongoing research in harnessing the full potential of these herbs for the benefit of individuals seeking natural and holistic solutions for their hair care needs.

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