



Review Article

Medicinal plants used in cosmetics for skin and hair care

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ABSTRACT

This study aimed at reviewing the importance of medicinal plants for the treatment of common hair problems such as baldness, alopecia hair fall, gray hair, dryness and most common dandruff. The various herbal ingredients used in the formulation are Aloe, Amla, Curry leaves, Camphore, Coconut oil, Eclipta alba, Hibiscus, Heena, Neem, Fenugreek, Sage, Apamarg, Onion, grape seeds, Jatamansi, Rosamary, Thyme, Tulsi, Garlic and Neem. All ingredients provide essential nutrients such as Vitamin, terpenoids and many essential oils to maintain normal function of sebaceous gland and overall care of skin and hair.

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1. Introduction

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.^{1,2} Today personal care products containing ingredient from the plant origin are getting an increasing trend in the pharmacy world. Cosmetic product containing plant material as active ingredient is comes under the category of cosmeceuticals.^{3,4} Hair oils are the hair care formulations applied for treatment of hair disorders such as baldness, aggression of hair, discoloring of hair, hair falling, and dryness of hair etc.⁵ The nature of oil is non sticky and addition of perfumes enhances the fragrance and overall improves its popularity. Proper application of hair oil gives luster to hair, softening the hair, gives flowness to hair and more important gives cooling effect to brain. The most recognized hair care preparation is herbal hair oils, they moisturizes the scalp and also helpful in dry scalp and dry hairs. Herbal hair oil maintains

normal functions of sebaceous gland as they supply normal essential elements for hair to naturally grow.⁶

According to World Health Organization (WHO) the global herbal market will grow \$5 trillion by 2050. Next to the China India is the largest producer of medicinal plants having greater than 40 % global diversity.

Form the study on 'Herbal Industry Biz Potential', presently, the Indian herbal market is worth Rs 7,000 crore (\$1.7 billion) and India exports herbal raw materials and medicines worth over Rs 3,600 crore(\$902million).⁷

2. Plant Material Used in Hair Cosmetics

2.1. Hibiscus flower

Hibiscus contains high vitamin C and A, iron and has anti-inflammatory, antioxidant and anti-bacterial properties. Making herbal hair masks with hibiscus flower paste or hibiscus infused oil can take care of hair loss, dandruff, improves hair shine, condition's hair and promote hair regrowth (length and thickness).⁸

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2.2. *Bhringraj*

Bhringraj is also called False Daisy in English. The botanical name of Bhringraj is *Eclipta Prostrata*. It is also known with the name of *Eclipta alba* which is botanical synonym of *Eclipta Prostata*. Belonging to family Asteraceae. It is an effective medicine for skin diseases, cough, asthma, eye disorders and disease related to any part of the head. It improves hair growth, prevents hair fall and treats premature graying of hair.⁹

2.3. *Arnica montana*

Arnica Montana or Arnica, belonging to family Asteraceae (*Arnica*). Arnica is a flowering herb native to cold, rocky regions like Siberia and eastern Europe. It is cultivated sparingly in India. The part of plant used is flower. It is used as hair tonic and stimulates hair follicles. Arnica oil has antibacterial and anti-inflammatory properties that leads some to believe its effective as a treatment for dandruff.¹⁰

2.4. *Henna*

Henna or *Lawsonia alba* L. (Lythraceae) has been cited as a growth accelerator and was used in an ancient Egyptian formula to cure the loss of hair. The incidence of contact dermatitis appears to be extremely rare with the use of henna, since henna leaf extracts have mild anti-inflammatory and anti-allergic action and analgesic effects. The leaves of *Lawsonia inermis*, has been applied since ancient times for decorating and dyeing hands and feet, to impart shades of dark red, and for the treatment of certain skin disorders. The compound lawsone, a brown powder isolated from the leaves, is responsible for the red colour in henna. It is used as a staining agent, due to the strong binding of lawsone to the hair, probably upon reaction of thiol groups with keratin.¹¹

2.5. *Sage*

Sage has been regarded as a healing herb for many centuries, and there are now over 500 species of *Salvia*, the species *officinalis* being the most important for culinary purposes. *Salvia officinalis* L. (Labiatae) also called 'common sage', 'true sage' or 'garden sage' is used as a lotion to improve the condition of hair and skin. Claims of its use, alone or with rosemary, to maintain the sheen of dark curly hair, and to strengthen and stimulate hair growth have been made. The major *S. officinalis* constituents responsible for the effect on hair are the tannins, saponins, as well as borneol and camphor. Along with it is an old favourite for dandruff, loss of hair and greasy hair and skin. An extract of sage massaged into the scalp can control dandruff, falling hair or loss of hair if the papilla is dormant and not destroyed.¹²

2.6. *Apamarg*

Apamarg or *Achyranthes aspera* belonging to family Amaranthaceae. Its English name is prickly chaff flower and Hindi name is chirata, latjira, onga. It is used in hair treatment for while ayurvedic texts have given a lot of importance to this herbaceous plant, it is used in treatment of alopecia. Alopecia is the medical term for hair loss or baldness. Apamarg promotes the hair growth, gives nutritional support to hairs.^{13,14}

2.7. *Allium cepa*

The onion (*Allium cepa* L., from Latin *cepa* "onion"), also known as the bulb onion or common onion, is a vegetable and is the most widely cultivated species of the genus *Allium*. Family: Amaryllidaceae. It is used to reduce hair loss by improving blood circulation in the scalp and hair. The sulphur in the juice helps in the production of essential collagen that promotes hair growth.¹⁵

2.8. *Almond*

The almond or *Prunus dulcis*, syn. *Prunus amygdalus* is a species of tree native to Iran and surrounding countries but widely cultivated elsewhere. It is belonging to family Rosaceae. The plant part used for preparation of oil is fruit. Almond oil rich in vitamin E used in the treatment of hair loss and strengthen the hairs.¹⁶

2.9. *Grape seeds*

It was discovered that proanthocyanidins extracted from grape seeds promote proliferation of hair follicle cells in vitro and that they possess remarkable hair-cycle-converting activity from the telogen phase to the anagen phase in vivo.¹⁷

2.10. *Aloe vera* L. or *A. barbadensis*

Aloe is the dried juice collected by incision from the bases of the leaves of various species of *Aloe vera* or *Aloe barbadensis* belongs to family Asphodelaceae. It is a great conditioner and makes hair all smooth and shiny. It promotes hair growth, prevents itching on the scalp, reduces dandruff and conditions your hair. *A. vera* L. or *A. barbadensis* gel is used traditionally for hair loss, and for improvement in hair growth following alopecia. Aloenin is the major constituent responsible for promoting hair growth without irritating the skin. *Aloe vera* has been cited as a treatment for brittle hair, but with no evidence to substantiate this claim.¹⁸

2.11. *Jatamansi*

It consists of dried rhizomes, stolons and roots of *Valeriana wallichii* belongs to family Valerianaceae. *Jatamansi* or spikenard is a special plant that grows in the Himalayas, and

its oil has been used extensively in ayurvedic medicine since the ancient days. It is one of the common herbs in ayurvedic medicine that help in getting good hair growth. This can treat your hair growth in number of ways it promotes hair growth while calming the nerves.¹⁹

2.12. Rosemary

Rosemary or *Rosmarinus officinalis* Linn. (Labiatae) is an aromatic herb surrounded by tradition and legends but with important culinary, medicinal and cosmetic properties. In folk medicine it is used to stimulate growth of hair as a rinse. The most important constituents of rosemary are thought to be caffeic acid and its derivatives such as rosmarinic acid; these compounds have antioxidant effects.²⁰

2.13. Thyme

Thyme or *Thymus vulgaris* L. (Labiatae) is also claimed to inhibit dandruff, and used in a scalp rub it prevents hair falling out, and rinses containing rosemary and thyme promote natural hair health.²¹

2.14. Tulsi

Tulsi or *Ocimum tenuiflorum* commonly known as holy basil is an aromatic perennial plant belongs to family Lamiaceae. It is rich in vitamin K and antioxidants. Tulsi is a cogent remedy for hair loss. It is prepped as an essential ingredient in herbal hair loss treatment. The herb works by strengthening the hair roots, thereby curbing hair fall, prevent bacterial and fungal infections.²²

2.15. Garlic or *allium sativum*

Garlic or *Allium sativum* (L. Liliaceae) lotion can help to control dandruff. It has been used since ancient times as a vegetable with many properties, including antiseptic, tonic, antioxidant, antiinflammatory, antibacterial and antifungal effects. It is used in hair loss problems because of its high levels of allicin, sulphur found to effectively treat hair loss. Garlic should not be placed directly on the skin since it may cause blisters and a burning sensation in some people or contact dermatitis and allergic reactions in others.²³

2.16. Walnut

Walnut or *Juglans regia* L. (Juglandaceae), leaves are used in traditional medicine for external applications such as eczema, acne, loss of hair, scalp itching, peeling and dandruff; and as an adjunctive emollient and itch-relieving treatment in skin disorders; as a trophic protective agent for cracks, abrasions, frostbite, chaps and insect bites to treat sun burns and for nappy rashes. *Juglans nigra* refers to the Black walnut, whose bark is used for dandruff and other scalp problems.²⁴

2.17. Lavender

Lavender or *Lavandula angustifolia* this is small aromatic species is compact and bushy. Lavender belongs to family Lamiaceae. Commercial preparation are made from dried flowers, dried herb, and essential oil. Lavender promotes hair growth, it has calming effect so also used in headache and it gives divine fragrance.²⁵

2.18. *Ginkgobiloba*

Studies suggested that Ginkgo biloba leaf extract also promotes hair regrowth, through combined effects on proliferation and apoptosis of the cells in the hair follicle, thus suggesting potential as a hair tonic.²⁶

2.19. Gotukala

Gotu kala or *Centella asiatica*, belonging to family Umbelliferae. Distributed throughout the Wetareas of India, the whole plant is used for hair care. Gotu kala can be used several ways for hair such as oil, tea, as a powder. Gotu kala plays a hefty role in strengthening the hair follicles, it helps in getting proper blood circulation to the scalp to feed and nourish those starving hair follicles.²⁷

2.20. Neem

Neem or *Azadirachta indica* or also known as Indian lilac is a tree in the mahogany family Meliaceae. It is one of two species of *Azadirachta*, and is native to the Indian subcontinent. When high quality, wild-crafted Neem extract and in some cases cold pressed Neem oil from the kernels of the olive shaped fruit is added to health and beauty preparations, it provides many benefits. Problem scalp conditions including dandruff and psoriasis, scaling and even hair loss respond to treatment with Neem shampoo, conditioners, creams, tinctures and capsules. Listless, damaged and overly oily hair appears to “come alive” when treated regularly with this most amazing plant.²⁸

2.21. Ashwagandha

Ashwagandha or *Withania somnifera* is a short woody shrub belonging to the Solanaceae family. Uses of *Withania somnifera* for hair is it controls Hair Fall, Prevents Premature Greying, Promotes hair health also it fights against the dandruff and improves the blood circulation.²⁹

2.22. Fenugreek

Methi or fenugreek is a well-kept secret as a natural medicine for hair growth. Fenugreek or methi prevents hair fall, promotes hair growth, eliminates dandruff and soothe dry and itchy scalp. Methi contains protein, Vitamin C, iron, potassium and lecithin – all of which are good for strong hair

follicles, improves hair growth and makes the hair lustrous. Conscious Health's Hair Mask contains fenugreek seeds. Best to purchase organic, cold pressed and extra virgin coconut oil for hair, skin or cooking.³⁰

2.23. Flaxseed

Flax also known as common flax or linseed, is a flowering plant. Biological name is *Linum usitatissimum*, in the family *linaceae*. Flaxseed is full of fatty-acids and antioxidants which help to remove toxins and dead cells from the scalp. It can be applied to scalp and hair as a moisturizer that can help to stimulate growth and improve the strength of existing hair.³¹

2.24. Colous

Synonym of plant *Coleus Barbatous*, *Coleus Grandis*, *Coleus Penzigii*, *Coleus Vestitus*, Wild oregano, Makandi. It is a diterpene isolated from roots of *Coleus forskohii*, belonging to the family *Labiatae*. It has good antipityrosporum or antidandruff, antibacterial and anti-inflammatory properties. It can be used in various cosmetic such as lotions, soaps, shampoo and perfumes. It helps to treat dandruff and micro-organism associated with acne and other skin infection.³²

2.25. Curry leaves

In Ayurvedic medicine curry leaves infused oil is very popular for hair re growth (new hair growth) as well as promotes strong, shiny, thick and fast hair growth. It also reduces hair fall which makes it a wonder herb for thick and luscious hair. Curry leaves conditions the hair, reduces scalp infections, stops pre- mature greying and has antibacterial affect. High in antioxidants such as vitamin A, C, E, folic acid and minerals such as iron, curry leaves are truly nourishing for hair.³³

2.26. Bacopa monnieri

Brahmi or *Bacopa monnieri* is small herb with purple flowers. It grows in wet and sandy areas and near the streams in tropical regions. It is a creeping herb with numerous branches and small fleshy, oblong leaves. Flowers and fruits appear in summer. Whole Plant is used. It contains alkaloids thought to activate proteins responsible for hair growth and it reduce hair fall.³⁴

2.27. Shikakai

Shikakai has several benefits which are specifically targeted for hair health; therefore Shikakai (Indian word) literally means "fruit for the hair". Shikakai is used for cleansing the hair, promoting hair growth, preventing dandruff and strengthening hair follicles. Typically, dried and powdered Shikakai is mixed with water to make a paste and applied on the scalp and hair, to use as a conditioner. Shikakai has

a low pH level therefore when using it to cleanse the hair it does not damage the hair or strip the hair from its natural oils. Shikakai is also used as a detangler.³⁵

2.28. Castor oil

Castor oil is an old remedy to prevent hair loss or assist with hair regrowth. This is because castor oil has the ability to improve circulation and increase blood flow. It contains anti-inflammatory and anti- microbial properties. The anti-fungal properties in castor oil are Ricin and Resinoleic acid which nourishes the hair. Castor oil is one of the few natural ingredients that stimulates hair growth, combats spilt ends, moisturizes hair and scalp, adds luster and shine, prevents frequent hair fall or breakage, thickens hair, makes it grow longer fast and fights against dryness and dandruff.³⁶

2.29. Coconut oil

Coconut oil is best for Pitta dosh individuals as this is cooling oil that is also rich in vitamin E and K, lauric acid and minerals. Coconut oil contains anti- fungal, anti-viral and anti-bacterial properties and is rich in antioxidant. Coconut oil supports hair growth (length of hair), fights with dryness, dandruff, scalp infections and fungus, protects the hair from sun damage, as well as adds shine and luster.³⁶

2.30. Indiangosbery

Amla or Indiangosbery is one of the most popular herbs in Ayurveda is an amazing tonic for the hair. Amla can be juiced or dried Amla can be used in a hair mask. Amla oil is extremely popular in India or South East Asian countries as hair oil. Amla contains an array of vitamins (notably vitamin), minerals and antioxidants. Amla can prevent hair loss, greying hair, combats dry scalp, dandruff, strengthens hair follicles and increase circulation which promotes hair growth. Amla contain anti-inflammatory, anti- microbial properties and has a cooling effect (suitable for Pitta dosh). Amla oil relieves scalp irritation and infections. The high nutrient content in Amla increases shine and luster as well as conditions and nourishes the hair.³⁶

3. Conclusion

The knowledge of medicinal plants used by the people of seems to be well-known to its culture and tradition. Present paper focuses on different plants to cure dermatological disorders, hair care and as cosmetics. Some of the plants were found to have dual use, both as curative and cosmetic.

4. Source of Funding

None.

5. Conflict of Interest

None.

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