



Illustrious Warrior: Herbs for Hair Care

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ABSTRACT-

Home grown hair care items are today's most vital subject of customer's choice. These beauty care products are related to common beauty care products. The audit highlights significance of home grown makeup, the herbs utilized in them. Hair makeup are utilized to progress patients hair related, scalp related issues. Due to utilize of hair cleanser, conditioner, cleansers, here oil not have any kind of side impact. It's utilized to make here Candescence and smooth. Appear home grown beauty care products are being well known among the individuals. Herbs that are utilized in makeup are utilized like antimicrobial, antioxidant and anti-inflammatory property. This article analyzes the essential data with respect to hair and made of activity of hair beauty care products such as cleanser, conditioner etc. This audit article emphasizes that right now individuals incline toward normal nourishment, home grown hair beauty care products home grown sedate detailing for a sound life. This is all approximately home grown hair beauty care products that imperative for sound life of hair which are incorporate in this survey article.

Key words- Hair Anatomy, Physiology, Herbal drugs, Growth promoters, Hair care, Essential oils.

Introduction –

A. Hair Anatomy and Physiology

Hair is one of our body parts that are derived from the skin ectoderm (1). The scalp of the hair having a thick layer formed by both skin and hair with high Hair follicular density (about 100000-150000 hairs in normal condition) and sebaceous gland attached (2). The hair fiber it may be divided into two main regions: Hair follicles and hair shafts. The hair follicle is now considered as a mini organ which having ability to regulate its growth phases, which consist of hair shaft. The lowest part of the follicle is the bulb, a region where most of the cellular activity occurs (3). The shape of the hair shaft is also found by the bulb in particular the degree of asymmetry of the hair matrix. The diameter of the hair is also determined by the hair follicle size, which is genetically determined and depends on the migration of specialized fibroblasts into the hair follicle. If the migration of the fibroblasts is more into the hair follicle then higher the final diameter of hair shaft (4). The illustrations of the hair follicle consist of hair shaft, epidermis, sebaceous gland, dermis, bulb, papilla and blood vessels. In general the skin scalp is coated with fatty acids that are provided from the sebum emulsification form the sebaceous gland that mixes with water from sweat gland. The sebaceous gland controls the transepidermal water loss from the skin and maintain the moisture in the stratum corneum (5). The constitutions of the hair fiber consist of lipid either as a structural or as a free lipids and are formed in the hair follicle. It is basically composed of fatty acids, glycolipids, ceramides and cholesterol which provide protection to the hair fiber (6). There are internal lipids such as ceramides, cholesterol fatty acid and cholesterol sulphate, which are not derived from the sebum. The excessive sebum production by the sebaceous gland promotes some processes such as exfoliation, irritation (7).

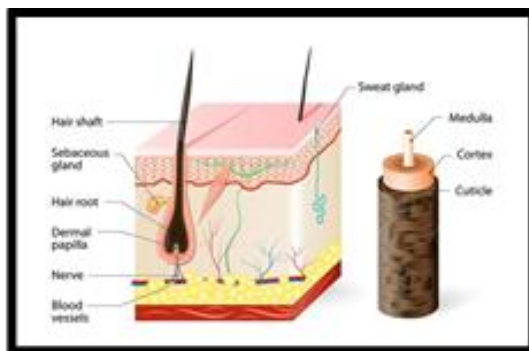


Fig. 1: Illustration of hair follicle

B. Herbal drugs for hair growth

There are most research plants for hair growth activities.

1) *Hibiscus rosa-sinensis* Linn.

The *Hibiscus rosa sinensis* Linn is a glabrous shrub. These shrub are widely cultivated in the tropics as an ornamental plants and having several forms with varying color of flowers. The leaves and flowers promote hair growth and aid in healing of ulcers. Extract of *Hibiscus rosa-sinensis* leaf increase hair length. (8). Formulation containing *Eclipta alba* Hassk, *Hibiscus rosa-sinensis* Linn, *Nardostachys*, *Jatamansi* have excellent hair growth promoting activity (9).



Figure No.(2)- *Hibiscus rosa-sinensis* Linn.

2) *Emblica officinalis* Linn

Emblica is used to promote growth of hair in traditional medicine. Emblica play a important role in iron metabolism. It is essential for normal hair growth and maintenances of health hair Iron involved in the oxygenation of our bodies red blood cells. So oxygen deficiency occurs due to the iron deficiency leads to Hair loss. These *Emblica officinalis* stimulate proliferation of dermal papilla cell having role in hair growth promotion. It is a herbal ointment and herbal hair oil having growth promoting activity (10).



Fig. 3: *Emblica officinalis*

3) *Polyporus umbellatus*

It is saprophytic mushroom that grows on beech and maple trees of roots. It having major active components like polysaccharides and steroidal compounds. A later study isolated three hair growth substances, Acetosyringone and polyporous sterone A and B (11).



Fig. 4: *Polyporus umbellatus*

4) *Allium cepa* L.

Allium cepa also known as onion. It mainly contains protein(Albumin) , Allicin, Daily sulphide, Alliin. Onion is beneficial for patchy baldness. It also contains some mineral like potassium, zinc , calcium, magnesium. Zinc secrete on the scalp with as much needed oil and avoid dandruff that may cause hair loss (12).

Fig. 5: *Allium cepa*5) *Capsicum annum* Linn.

Capsicum is a crop which is widely cultivated because of its spicy nature and nutritional value. It has large portion of vitamin A and C in many Nigerian diets. It mainly contains capsaicin and isoflavon. The effect of capsaicin and isoflavon might be mediated by sensory neuron activation in the skin. Capsaicin activates vanilloid receptor-1 and increase in the level of calcitonin (13).

Figure 6- *Capsicum annum* Linn.6) *Camellia sinesis* (L.) Kuntze

Green tea is made with the leaves of *Camellia sinesis*. Green tea is the popular beverage worldwide. It having potential beneficial effect such as it's anti-cancer and anti oxidant properties are thought to be mediated by Epigallocatechin -3 – gallet (EGCG), a major polyphenol in green tea (14). It having a effect on hair loss among rodents, anti inflammatory and stress inhibitory effects of these naturally substances might influence hair regrowth among mice (15).

Figure 7: *Camellia sinesis* (L). Kuntze

C. Hair growth promoting factor

Biological source	Parts used	Family	Type of extract	Type of animal
<i>Allium cepa</i> L.	Bulb	Liliaceae	Juice	Human
Aloe Vera L.	Leaves	Liliaceae	Gel	In vitro culture ethod
Asiasari radix F.	Roots, Rhizome	Aristolochiaceae	Ethanolic extract	C57BL/6 C3H

<i>Abrus precariosus</i> L	Seed	Fabaceae	Petroleum ether extract, Ethanolic extract	Male albino rat
<i>Aconitum ciliare</i>	Tuber	Ranunculaceae	Aqueous extract	Mice
<i>Boehmeria nipoonivea</i> K.	Aerial parts	Utriceae	Acetone extract	Mice
<i>Buxus wallichiana</i> Linn.	Wood	Buxaceae	Methanolic extract	Albino rats
Boxthorn (<i>Lycium</i> Linn.)	Leaves	Solanaceae	Aqueous extract	Mice
<i>Prunus dulcis</i> Mill.	Seed	Rosaceae	Petroleum ether extract	Albino rat
<i>Polyporus umbellatus</i> (Pers.) Fr.	Fruiting body	Polyporaceae	Ethanolic extract	C3H/He mice
<i>Psidium guajava</i> Linn.	Leaves	Myrtaceae	Hydro alcoholic extract	Albino mice
<i>Pygeum africanum</i> Hook .f.	Dried bark	Rosaceae	Chloroform extract	Mice
<i>Rosamarinus officinalis</i> Linn.	Leaves, Flower	Labiates	Essential oils	Human
<i>Seneroa repens</i> Bartram	Berries	Arecaceae	Petroleum ether extract	Mice
<i>Tamarindus indica</i> Linn.	Seed coat	Leguminosae	Ethanolic extract	Mice
<i>Tectona grandis</i> Linn.	Seed	Lamiaceae	Petroleum ether extract	Albino mice
<i>Zizyphus jujuba</i> Linn.	Seed	Rhamnaceae	Essential oils	Mice
<i>Urtica dioica</i> Linn.	Roots , leaves	Utriceae	Water, alcoholic extract	Mice
<i>Tridax procumbens</i> Linn.	Aerial parts	Compositae	Oil	Mice
<i>Thuja orientalis</i>	Leaves	Cupressaceae	Ethanolic, aqueous extract	Albino rats
<i>Ocimum gratissum</i> Linn.	Leaves	Lamiaceae	Volatile oils	Albino rats

Table 1: Hair growth promoting factors.

D. Hair care

Hair is an integrated system with peculiar chemical and physical behaviour. It is a complex structure of several morphological components that act as a unit. The hair shaft of mammals divided into three main regions. Cuticle, Cortex and medulla (16). The use of hair cosmetics may restore

hair cuticle damage and prevent hair breakage by reducing friction and water pickup (17). For caring of hair various components are used like shampoos, conditioners, surfactants, hair dye, silicones and other substances.

1. Shampoo

Shampoo is a hair care product. It is not only a scalp cleaner but undoubtedly acts as preventing the hair shaft damage. Shampoos are typically composed of 10 to 30 ingredients.

- 1) Cleansing agent.
- 2) Conditioning agent, to impart softness and gloss.
- 3) Additives, to get stability
- 4) Foam builders.
- 5) Preservatives, formaldehyde, methyl paraben (18).

2. Surfactants

Surfactant lowers the surface tension. It acts as a cleaning agent. Surfactants dissolve the impurities preventing them from the binding to the shaft or to the scalp (19). Depending upon the electric charge of the polar extremity. The surfactants are classified into four groups.

- 1) Anionic
- 2) Cationic
- 3) Amphoteric
- 4) Non ionic

Cationic, amphoteric and non ionic surfactants are added to some shampoo formulas to reduce the static electricity generating effect caused by the anionic surfactants (20).

3. Conditioners

Conditioners are used to reduce friction and minimize frizzing of hair. It contains anti static and lubricating substances like

1. polymers
2. Oils
3. Waxes.
4. hydrolysed amino acids
5. Cationic molecules

The ideal conditioner is capable of restoring the hydrophobicity of the fiber and neutralizes the static electricity.

Functions of conditioners

1. Restore hydrophobicity
2. Seal the cuticle
3. Minimize frizz
4. Enhance shine
5. Increase smoothness

4) Silicones

Silicones are the rubber like polymers. They are hybrid and inert heat resistant derived from crystalline quartz. Dimethicone is the most widely used silicone in the hair industry. It is the main ingredient of the two in one shampoos.

Others are – Aminosilicones

Siloxysilicates

Anionic silicones and others (21).

5) Essential oil

Essential oils are the volatile oils, are the by-products of plant metabolism. They are extracted from the various parts of the plants such as flower, grass, fruit, herbs, leaves, Rhizome, bark. Essential oils are the lipid-like substances having strong fragrance and they contain a variety of chemical classes (22). They are generally low molecular weight compounds with limited solubility in water. They include chemical classes mainly Terpenes like sesquiterpenes and di-terpenes as well as oxygenated compounds. Essential oils also differ in physical properties due to the changes in their structure like acyclic, bicyclic or monocyclic (23).

1. *Mentha piperita* L. (Peppermint oil)

Mentha piperita L. that is peppermint oil contains main chemical constituents like menthol (30-50%), menthone, Neomenthol, iso-menthone. Menthol is an organic compound having anesthetic properties. It increases the sensitivity of cutaneous cold receptors. This oil has antiviral, antimicrobial, anti-inflammatory properties also has antioxidant activity and antitumor actions also it is widely used in cosmetics (24).

2. *Eucalyptus globulus* (eucalyptus oil)

These oils having anti-inflammatory properties and beneficial in the respiratory system. It has antibacterial activity against gram-positive and gram-negative bacteria resistant to antimicrobial agents and used as a preservative. It contains main chemical constituents like 1-8 cineole, camphor, limonene, alpha-pinene, beta-pinene (25).

3. *Lavandula angustifolia* (lavender oil)

It contains numerous monoterpenes, coumarins, organic acids, tannins responsible for the lavender pharmacological activity. It is used as an antiseptic agent, sedative, carminative and relaxant. It also has anti-inflammatory, antioxidant, analgesic property to relieve pain. The main chemical constituents of lavender essential oil are linalyl acetate and linalool (26).

4. *Rosmarinus officinalis* (rosemary oil)

Rosemary oil is important in aromatic areas. It has efficacy to reduce microbial contamination. It is used as a vasodilator, anti-bacterial, anti-oxidant, cytotoxic, antimutagenic action and used in cosmetic products. The main chemical constituents of these oils are 1-8 cineole, camphor, borneol, verbenone, alpha-pinene. The important thing about these oils is that they should not be used during pregnancy due to their abortifacient effect (27).

5. *Matricaria chamomilla* L. (Chamomile oil)

These oils having antioxidant action. And also it contains sesquiterpenes called as chamazulene it can reduce the inflammation due to the presence of flavonoids. These oils having anti-inflammatory, anti-erythema, anti-pruritic, anti-calming effect. The main chemical constituents of these oils are farnesene, alpha-bisabolol and oxygenated sesquiterpenes (28).

Discussion-

The name itself suggests that the herbal cosmetics are natural and free from all the harmful synthetic chemicals which otherwise may prove to be toxic to the skin. Instead of traditional synthetic products different plant parts and plant extracts are used in hair products. Eg. Aloe vera gel, Coconut oil.

The hair cosmetic hydrates the scalp while also reversing the effects of dry scalp and hair. The use of phytochemicals from a variety of botanicals has dual function.

1) They serve as cosmetics for the care of hair and its parts and

2) The botanical ingredients present influence biological functions of hair and provide nutrients necessary for the healthy hair.

There is wide scope in the profession of herbal cosmetology in India.

The main purpose of this review article is healthy life of hair.

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