

Exploring Knowledge about Herbs used in Hair Care Products

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Abstract: *Plants act as a source of food and medicine from long times. A wide range of plant oils are used in cosmetics and toiletry preparations. Hair is an important part of body, reflect personality of person. There are many cosmetics available for hair care. From long time plant materials are used for hair care. In this review, Indian medicinal plants having hair care properties are summarized in terms of their biological source, active constituents and biological activity. Cosmetology is outlined because the science of alteration within the look. In India, the employment of herbals for the aim of change of state finds its occurrence within the ancient literature drugs like writing. Herbal cosmetics is one in every of the foremost potent and effective space of cosmetic technology. It's used for beautifying and overall enhancing the human temperament. Flavoring product square measure characterized by a far better tolerability compared with different artificial product. This study aimed at reviewing the importance of flavoring hair tonic for the treatment of common hair issues as depilation, alopecia, hair fall, gray hair, dryness, and most typical dandruff. Flavoring product gains quality over worldwide as a result of its lack of aspect effects as compared with synthetic product. The aim of victimization cosmetic preparations is to achieve worship and sensual enjoyment. From the centuries the flavoring extracts square measure used as whole or as a district for the ailments of hair, skin and overall look. Hair loss or depilation isn't a life threatening sickness however it ends up in emotional stress and traumatic expertise. For the treatment of such hair disorders the hair tonic is ready from herbs and flavoring extracts. But, still nobody flavoring hair tonic is sufficiently effective as 100%. The market survey shows the increase within the demand of flavoring product for the hair care preparations. This review deals with the big quantity of research, reports and patents obtainable in different aspects of the flavoring hair tonic for the treatment of hair disorders*

Keywords: hair care formulations, hair tonic, natural plants, hair cosmetics

I. INTRODUCTION

In Olden times herbal products were used for medicinal purposes, both internally as well as externally. Herbal drugs were used as juice, latex or in dried powder form. Now a day's 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. Appearance of hair makes an important impact on total body feature. Color, length and appearance of hair make a significant difference from person to person. Cosmetics that are used for hair care purpose applied orally and should not be used for therapeutic purpose. Basic feature of hair care cosmetics-

1. Should be easy to use
2. Should have local effect.
3. Should be harmful to hair skin and mucous membrane.
4. Should not be allergic to body.
5. Should be applied topically.

Cosmetics are substances accustomed enhance the looks or odor of the anatomy. Cosmetics embrace skin-care creams, lotions, powders, perfumes, lipsticks, nail and toe nail varnish, eye and facial makeup, permanent waves, colored contact lenses, hair colors, hair sprays and gels, deodorants, baby product, bath oils, bubble baths, bath salts, butters and many different kinds of product. A set of cosmetics is named "make-up," that refers primarily to colored product

supposed to change the user's look. Several makers distinguish between ornamental cosmetics and care cosmetics. Within the last three-four decades the use of cosmetics has magnified exponentially not solely among females however the male population conjointly indulges in their use.



Hair dyes, hair oil, creams are as fashionable males as with females. Most countries currently have laws to regulate, producing, label, sale etc. of cosmetics in such some way that use of cosmetics harmful to health is prevented. The thought of beauty and cosmetics is as ancient as humankind and civilization. So, they use numerous beauty product that have herbs to seem charming and young. Indian herbs and its significance ar well-liked worldwide 2. Flavored cosmetics have growing demand within the world market and are a useful gift of nature. There ar a large vary of flavored cosmetic products to satisfy beauty regime. Adding herbs in cosmetics is extremely safe for our skin3-5. Herbal hair oils are one among the foremost well recognized hair treatments. Flavored hair grease not solely moisturizes scalp however conjointly reverses dry scalp and dry hair condition. It provides various essential nutrients needed to take care of traditional functions of oil gland and promote natural hair growth. Keeping now in thought the current work was undertaken. India flavored medicines ar the principal kind of medicines. In Asian country around 6000 manufacturers for flavored medicines are offered. In keeping with World Health Organization around eightieth folks of the world uses flavored medicines. Though many artificial drug molecules mimic the natural occurring molecule and have structure that totally or part the same as natural molecule (Guide, Y. A. Y. G. 2002). Herbal treatments have growing demand in worldwide as they're lack of any adverse and effects as compare to artificial formulations. In cosmetic business hair oils ar generally used by the peoples. Flavored formulations gains a crucial role all told over the globe because it is completely created of natural sources derived from the plants. Pre-mature hair loss is one of the common sorts of medicine condition. The etiology of hair loss continues to be not completely understood and additionally its complete medical treatment isn't satisfactorily developed one in every of the foremost causes of hair loss is that the deficiency of iron (anemia) (Harrison, S., & Sinclair, R. 2003). As

Hair care cosmeceuticals formulations mainly include shampoo, gel, lotion solution and oil.

INDIAN GOOSEBERRY

Otherwise known as Amla, this traditional Indian herb is rich in Vitamin C, tannins and minerals such as phosphorus, iron and calcium. A fixed oil is obtained from the Indian Gooseberry, which is used to strengthen and promote hair growth. The dried fruit, which improves hair hygiene, has long been used as an important ingredient of traditional shampoos and hair oils.

HIBISCUS

Hibiscus (*Hibiscus sassiness*) is a shrub widely cultivated in the tropics as an ornamental plant and has several forms with varying colors of flowers. We use the red variety in cosmetics (and medicine). Researchers have found that Hibiscus leaves and flowers are observed to be promoters of hair growth. Traditionally, Hibiscus leaves have also been used for their anti-greying properties.

ROSEMARY

Rosemary has been used in folk medicine to stimulate hair growth as a rinse for many centuries. The most important constituents of rosemary are thought to be caffeic acid and its derivatives such as rosmarinic acid; these compounds have antioxidant effects. Rosmarinic acid is used against hair loss, since it promotes blood circulation and consequent potential hair growth. This plant is used against various hair and scalp disorders, such as early baldness or dandruff and is frequently used as a component of shampoos and conditioners.

PEPPERMINT

Peppermint is a plant native to Europe and has been used in cosmetic formulations as a fragrance component and skin conditioning agent. It is also one of our amazing haircare herbs! Researchers have found that peppermint essential oil shows potential for hair growth effects, potentially leading to an increase in dermal thickness, follicle number and follicle depth.

SAFFLOWER

Safflower florets have been traditionally used for hair growth promotion. Researchers in one study (Junlatat & Sripanidkulchai, 2014) found that the Safflower extract significantly stimulated hair growth-promoting genes, including vascular endothelial growth factor and keratinocyte growth factor. The extract also suppressed the expression of a hair loss-related gene. The study concluded that safflower can be used as a potential hair growth-promoting agent.

Amla (*Emblica officinalis*)

Amla (*Emblica officinalis*, Family- Euphorbiaceae) is deciduous tree widely found in India at the height of 350 m. It is often cultivated at commercial level in Uttar Pradesh, Gujarat, Rajasthan and Maharashtra. Amla contains 5-6% of tannins such as gallic acid, ellagic acid and phyllembelin. It is commercialized in the form of shampoos and hair oil. Mainly its oil and aqueous extract is used in the hair care formulations.

Brahmi (*Centella asiatica*)

Brahmi (*Centella asiatica*, Family- Umbelliferae) is herbaceous creeping herb growing at the bank of river. In India, brahmi is found in wet damp and marshy places of north India. Brahmi contains essential oils, sterols, flavonol, glycoside and triterpenoid saponins. Brahmi oil and soft extract are two commercial preparation of brahmi used in hair care formulations. It is also categorized as rasayan in ayurveda and hence possesses the properties of delaying ageing signs in body like graying of hairs. Brahmi also helps in relieving mental fatigue and hence helps in maintain proper bodily environment that leads to healthy hairs.

Bhringraj (*Eclipta alba* Linn.)

Bhringraj (*Eclipta alba* Linn, Family- Asteraceae) is an annual or perennial plant found in moist places throughout India, ascending up to 600 fts. Bhringraj mainly contains coumestans (wedelolactone and dimethyl wedelolactone), alkaloid (ecliptine), glycosides (-amyrin), triterpenic acid and steroids (ecalbasaponins). Brahmi oil is very good hair tonic and used as a constituent in hair formulation for healthy, black and long hair.

Coconut (*Cocos nucifera* Linn.)

Coconut (*Cocos nucifera* Linn, Family-Palmae) tree is tall rising to a height of 30 meters, grow near the sea side. Oil of coconut fruit is used in different hair formulations such as shampoos and hair oil. Coconut oil has good saponification value so used in shampoos for

Henna (*Lawsonia inermis*)

Henna (*Lawsonia inermis*, Family- Lythraceae) grows wild and cultivated as garden plant throughout India. Henna leaves are the part of plant that is used in hair formulations. Leaves mainly contain lawsone (quinone) dissolve in basic pH to give dark intense orange color. Henna leaves have been used from ancient time as a hair colour due to the chemical interaction of lawsone (thiol group) to the keratin.

Neem (*Azadirachta indica*)

Neem (*Azadirachta indica*, Family- Melliaceae) is indigenous to all plains in Indian subcontinent. It also grows widely in the sub-Himalayan track at altitude of 700–10, 000 m above sea level. Neem leaves contain flavonoids, steroids, terpenoids, sterols and nimbolide. Neem seed and seed oil contain different bitter limonoids including nimbin, nimbibin, salanin etc. many commercial shampoos contain neem oil for the control of ticks, fleas and lice. In European countries neem oil also used in different herbal hair oil, hair tonic and conditioners.

Jatamansi

It is a useful hair tonic and is commonly used in hair oils, promoting hair growth and luster. It promotes hair growth and imparts black color to the hair.

Fenugreek (*Trigonella foenum graecum*)

Fenugreek (*Trigonella foenum graecum*, Family- Leguminoseae) plant is a quick growing annual leguminous herb about 2 feet in height. In India Fenugreek (*Trigonella foenum graecum*, Family- Leguminoseae) is often cultivated as a cover crop in citrus-fruit groves to take advantage of their leguminous nature. The major producers of Indian fenugreek are Rajasthan, Gujarat, Uttar Pradesh and Tamilnadu. Generally seed is used to prepare hair care formulations. Seed contain alkaloids (Neurin, Trigonelline, Choline, Gentianine), amino acids (Isoleucine, 4-Hydroxyisoleucine, Histidine, Leucine, lysine), Saponins (Graecunins, fenugrin B, fenugreekine, trigofenosides A-G), lipids, vitamins and fibers. Traditionally fresh Fenugreek leaves paste applied over the scalp regularly before bath helps hair grow, preserves natural color, keeps hair silky and also cures dandruff.

Cedar wood oil (*Juniperus virginiana*)

Cedar wood oil extracted from the woods (*Juniperus virginiana*, Family-) for hair loss and dandruff. The chief components of cedar wood essential oil are alpha cedrene, beta cedrene, cedrol, widdrol, thujopsene and a group of sesquiterpenes, which contribute to its medicinal values. Cedarwood oil is used for hair care formulations, especially for dry hair, and to induce hair growth along with other essential oils. Even people having the problem of dandruff can too benefit from using cedarwood oil.

Rosemary oil (*Rosmarinus officinale*)

Rosemary (*Rosmarinus officinale* Linn, Family- Labiatae) is cultivated in Indian gardens. It contains volatile oil, resin, ursolic acid etc. Commercially rosemary oil is used in hair lotions and hair gels to promote hair growth and shining.

Shikakai (*Acacia concinna*)

Shikakai (*Acacia concinna*, Family-Mimosaceae) is a shrub widely found in plains of central and south India. Shikakai literally means fruit of hairs. It is an excellent natural hair cleanser and astringent and also acts as detangle. It is used in soaps and shampoos for hair wash, promotes hair growth, removes dandruff and strengthens hair.

Almond oil (*Prunus dulcis*)

Almond oil (*Prunus dulcis*, Family- Rosaceae) is obtained from ripe seeds of *Prunus dulcis* by cold expression technique. It is commercially cultivated in north part of India.

Sandalwood oil (*Santalum album*)

Sandalwood oil (*Santalum album*, Family- Santalaceae) is from the heartwood of obtained from *Santalum album* an evergreen tree 8-12 meter in height by steam distillation method. It is indigenous to South India, and grows in the Western Ghats and a few other mountains. The Sandalwood oil contains 90-97% of sesquiterpenes alcohol (Santalol), hydrocarbons, acids, aldehydes and ketones. Sandalwood oil is employed as hair care products.[9–11]

Sesame oil (*Sesamum indicum*)

Sesame oil (*Sesamum indicum*, Family- Pedaliaceae) is obtained from ripe seeds of *Sesamum indicum*, an annual herb by expression technique. Sesame is produced commercially in Gujarat, West Bengal, Rajasthan, Tamilnadu, Orissa,

Madhya Pradesh, Andhra Pradesh, Maharashtra, Uttar Pradesh, Punjab, and Karnataka in India. Sesame oil contains palmitic acid, oleic acid, linoleic acid, linolenic acid, stearic acid, arachidic acid, behenic acid, and gandoic acid. Sesame oil is used commercially for hair tonic formulations.

Senna (*Cassia angustifolia*/*Cassia acutifolia*)

Senna (*Cassia angustifolia*/*Cassia acutifolia*, Family Leguminosae/Fabaceae) is obtained as senna leaf from dried leaflets of *Cassia angustifolia* (Indian senna) & *Cassia acutifolia* (Alexandrian senna). The senna (*Cassia angustifolia*) is most commercially obtained from south India and some from the north part of India. The senna leaves contain rhein, chrysophanol, emodin, aloemodin, mono and diglucosides, kaempferol, palmidin, myricyl alcohol and mucilage. The leaves are commercially employed as hair black dye.[7–9]

Lemon oil (*Citrus limonum*)

Lemon oil (*Citrus limonum*, Family Rutaceae) is obtained from peels *Citrus limonum* by cold extraction technique. The lemon is commercially grown in northwest region of India. The lemon oil contains α -pinene, camphene, β -pinene, sabinene, myrcene, α -terpinene, linalool, β -bisabolene, limonene, trans- α -bergamotene, nerol and neral. Lemon oil is used as hair cleaning agent.[9–12]

Rose Oil (*Rosa Damascena*)

Rose oil (*Rosa Damascena*, Family Rosaceae) is obtained from fresh petals of *Rosa Damascena* by hydro-steam distillation technique. Rose is grown in almost all the parts of India. Rose oil contains citronellol, geraniol, linalool, farnesol, steareptene, camphene, eugenol and pinene. Rose oil is employed as Hair care products.[3, 7, 11]

Sage oil (*Salvia officinalis* Linn)

Sage oil (*Salvia officinalis* Linn, Family Labiatae) is obtained from dried leaves of *Salvia officinalis* Linn by steam distillation technique. The Sage is shrubby perennial plant cultivated in India. The Sage oil contains α -pinene, cineole, linalyl acetate, thujone (44 to 45%), borneol, bornyl acetate, farnesol, and camphor. The sage oil is employed as anti dandruff agent.[5–13]

II. CONCLUSION

India has the well-recognized and well knowledge on traditional herbs and their formulations. This review was an attempt to describe that many plants of medicinally importance can be used for the treatment of various kinds of common hair problems. Herbal products are of greatest popularity because they are purely made up of herbs and shrubs. Today's generation both men and women, suffers normal hair problems as there is more polluted environment which leads to hair disorders such as pigmentation problems (Fading), dandruff and falling of hair (Shedding). The use of bioactive ingredients from the herbal formulation stimulates the biology of skin and hair for natural growth that provides healthy hair and skin. Generally herbal formulation provides many vitamins, antioxidants, various oils, proteins, terpenoids and many essential oils. This article is an endeavor to describe the advantage and application of herbs as natural cosmetics for the purpose of natural hair growth.

REFERENCES

- [1]. Guide, Y. A. Y. G. (2002). Harper Collins Australia. Australia. Retrieved from <https://Yates-GardenGuide/dp/0207198209>.
- [2]. McDonagh AJ, Messenger AG. The pathogenesis of alopecia areata. *Dermatologic Clinics*, 1996;14:661-70.
- [3]. Harrison, S., & Sinclair, R. (2003). Optimal management of hair loss (alopecia) in children. *American journal of clinical Dermatology*, 4(11), 757-770
- [4]. Sinclair RD. Healthy hair: What is it? *J Invest Dermatol Symp Proc* 2007;12:2-5. Wolfram, L. J. (2003). Human hair: a unique physicochemical composite. *Journal of the American Academy of Dermatology*, 48(6), S106-S114.

- [5]. Kizawa, K., Troxler, H., Kleinert, P., Inoue, T., Toyoda, M., Morohashi, M., & Heizmann, C. W. (2002). Characterization of the cysteine-rich calcium-binding S100A3 protein from human hair cuticles. *Biochemical and biophysical research communications*, 299(5), 857-862.
- [6]. Horvath, A. L. (2009). Solubility of structurally complicated materials: 3. Hair. *TheScientificWorldJOURNAL*, 9, 255271. Dawber R. Cosmetic and medical causes of hair weathering. *J Cosmet Dermatol* 2002;1:196-201.
- [7]. Trüeb, R. M., Rezende, H. D., & Dias, M. F. R. G. (2018). A comment on the science of hair aging. *International Journal of Trichology*, 10(6), 245. Piérard-Franchimont C, Piérard GE. Hair weathering and hair capacitance mapping: A pilot study. *J Cosmet Dermatol* 2012;11:179-82.
- [8]. Hofbauer, G. F., Tsambaos, D., Spycher, M. A., & Trüeb, R. M. (2001). Acquired hair fragility in pili anulati: Causal Relationship with androgenetic alopecia. *Dermatology*, 203(1), 60-62.
- [9]. Draelos ZD. Essentials of hair care often neglected: Hair Cleansing. *Int J Trichology* 2010;2:24-9. Zavar, V. P., & Mhaskar, S. T. (2003). Matting of hair following use of a new herbal shampoo. *Journal of Cosmetic Dermatology*, 2(1), 42-44.
- [10]. India, M. (2003). Effect of mineral oil, sunflower oil, and coconut oil on prevention of hair damage. *J. Cosmet. Sci*, 54, 175-192.
- [11]. Stoll, D., & King, L. E. (1980). Disulfiram-alcohol skin reaction to beer-containing shampoo. *Jama*, 244(18), 2045-2045.
- [12]. Han, H., Chen, W., Li, T. S., & Liu, Q. S. (2012). Fetal death associated with ingestion of shampoo and development of Hypotension and lactic acidosis. *Clinical Toxicology*, 50(8), 793-793.
- [13]. Quertermous, J., & Fowler Jr, J. F. (2010). Allergic contact dermatitis from carvone in hair Conditioners. *Dermatitis*, 21(2), 116-117.
- [14]. Schalock, P. C., Storrs, F. J., & Morrison, L. (2000). Contact urticaria from panthenol in hair conditioner. *Contact Dermatitis*, 43(4), 223. Niinimäki, A., Niinimäki, M., Mäkinen Kiljunen, S., & Hannuksela, M. (1998). Contact urticaria from protein hydrolysates in hair conditioners. *Allergy*, 53(11), 1078-1082.
- [15]. Langan, S. M. (2009). Flares in childhood eczema. *Skin Ther. Lett*, 14(8)
- [16]. Corbett, J. F. (1976). Hair dyes—their chemistry and toxicology. *Cosmet Toilet*, 91, 21-28.
- [17]. Madnani, N., & Khan, K. (2013). Hair cosmetics. *Indian Journal of Dermatology, Venereology and Leprology*, 79(5), 654.
- [18]. Handa, S., Mahajan, R., & De, D. (2012). Contact dermatitis to hair dye: an update. *Indian Journal of Dermatology, Venereology and Leprology*, 78(5), 583.
- [19]. Koley, S., Sarkar, J., Choudhary, S., Dhara, S., & Choudhury, M. (2012). Erythema multiforme following application of hair dye. *Indian journal of dermatology*, 57(3), 230.
- [20]. Almeida, P. J., Borrego, L., Pulido Melián, E., & González Díaz, O. (2012). Quantification of p-phenylenediamine and 2-hydroxy-1,4-naphthoquinone in henna tattoos. *Contact dermatitis*, 66(1), 33-37.