



---

## Herbal Hair Cosmetics - An Overview

Ashwini V. Jadhav<sup>1\*</sup>, Dipak Morale<sup>2</sup>, Abhijeet Daunderkar<sup>2</sup>, Nikhil Bhujbal<sup>1</sup>, Dr. Sandip Kshirsagar<sup>3</sup>

<sup>1</sup>Assistant Professor, Department of Pharmaceutics & <sup>3</sup>Associate Professor, Department of Pharmaceutical Chemistry & <sup>2</sup>Graduate Students, Kasturi shikshan Sansthas College of Pharmacy, Shikrapur, Pune, Maharashtra

*Received: 08-07-2018 / Revised Accepted: 26-08-2018 / Published: 29-08-2018*

---

### ABSTRACT

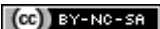
The herbal cosmetics are known as the preparation containing variety of botanical sources which influence the functions of skin and provide nutrients necessary for the healthy skin or hair. Hair cosmetics are used to increase patient's adhesion to alopecia & scalp treatment. Recently herbal cosmetics became popular among people. The herbs used in preparation of herbal hair cosmetics are used as like antioxidant, anti-inflammatory, antiseptic and antimicrobial. Herbal cosmetics have efficacy and intrinsic acceptability due to regular use in daily life and avoid the adverse side effects which are commonly seen in synthetic products. This review describes the different types & mechanism of action of hair cosmetics as shampoo, conditioner & hair oil etc. their use & application.

**Keywords:** Herbal drugs, cosmetics, hair cosmetics

---

**Address for Correspondence:** Ashwini V. Jadhav, Assistant Professor, Department of Pharmaceutics, Kasturi shikshan Sansthas College of Pharmacy, Shikrapur, Pune, Maharashtra; Email: [avj.ksscop@gmail.com](mailto:avj.ksscop@gmail.com)

**How to Cite this Article:** Ashwini V. Jadhav, Dipak Morale, Abhijeet Daunderkar, Nikhil Bhujbal<sup>1</sup>, Dr. Sandip Kshirsagar. Herbal Hair Cosmetics - An Overview. World J Pharm Sci 2018; 6(9): 144-152.

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License, which allows adapt, share and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms. 

## INTRODUCTION

Cosmetics are substances used to enhance the appearance or odor of the human body. Cosmetics include skin-care creams, lotions, powders, perfumes, lipsticks, fingernail and toe nail polish, eye and facial makeup, permanent waves, colored contact lenses, hair colors, hair sprays and gels, deodorants, baby products, bath oils, bubble baths, bath salts, butters and many other types of products. A subset of cosmetics is called "make-up," which refers primarily to colored products intended to alter the user's appearance. Many manufacturers distinguish between decorative cosmetics and care cosmetic in the last three-four decades the use of cosmetics has increased exponentially not only among females, but the male population also indulges in their use. Hair dyes, hair oil, creams are as popular with males as with females, Most countries now have laws to control, manufacturing, label, sale etc. of cosmetics in such a way that use of cosmetics harmful to health is prevented. The concept of beauty and cosmetics is as ancient as mankind and civilization. So, they use various beauty products that have herbs to look charming and young.

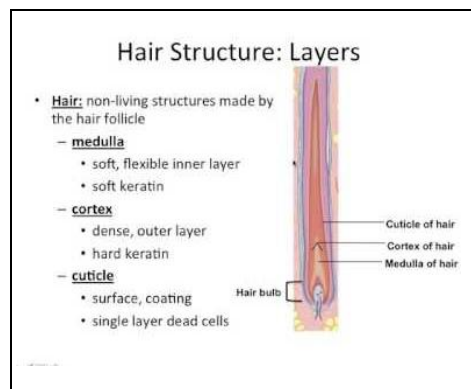
Herbal cosmetics were gaining tremendous demand in the world market. There is a wide range of herbal cosmetic products used as beauty regime to satisfy the purpose of beautification. Adding herbs in cosmetics is safer for our skin [1]

Herbal cosmetics are prepared by the association of bioactive ingredients and pharmaceutical products. The presence of number of phytochemical and botanicals in the herbal products have dual significance, one that they are used as cosmetics for body care and another that phytochemicals improve the biological functions of human body naturally results in healthy skin and hairs.[2] As the name suggests, the herbal extracts mean the extracts of herbs. It is an ancient methodology because its origin was discovered from the holy Vedas and in Unani scriptures. As the realization said that the chemical medicines are not always work as magic bullets and they may have side effects. The current trend moves toward the herbalism and use of natural products. Indian herbs are the richest source to be used in cosmetic industries. [3]

**Hair Fiber Structure:** The hair fiber, about 50–100  $\mu\text{m}$  in diameter, has both protective and cosmetic functions [4].

Hair protects the scalp from sunburn and mechanical abrasion, provides thermoregulation and social communication. The human hair scalp, eyebrows, and lashes are long, thick and pigmented terminal hair fibers. However, the body is covered

with hairs of 2–4 cm in length under 40  $\mu\text{m}$  in diameter, and often unpigmented, named vellus hairs [5]. Human hair fibers are divided into three main morphological constituents, also components of the hair follicle: cuticle, cortex and, in some cases, medulla.



**Fig; 1 -hair structure**

**Cuticle [6]:** The hair fiber is enclosed in the cuticle, a barrier protecting the underlying cortex from external environmental damage. It contains 6–10 layers of overlapping scales, in a way that only approximately one-sixth of each surface is exposed. The cuticle's proximal end is firmly attached to the cortex and the distal open end of the overlapping tiles points towards the tip of the fiber. Adjacent hairs grow and move outwards in relation to each other, facilitating the elevation of dirt and scales and assisting easy removal. The shape and orientation of the cuticle cells are responsible for limiting friction between hair fibers. The outermost layer of cuticle cells is the epicuticle, a lipid layer that includes 18-methyl eicosanoic acid (18-MEA) and free lipids, providing lubricity to the hair and consequently constituting the first line of defense against environmental assaults. Immediately below is the A-layer, with approximately 30% cysteine content, highly cross-linked, which confers structural strength and rigidity to the cuticle. The following layers gradually have less cysteine content and consequently less rigidity. The B-layer, or the exocuticle, is immediately below with approximately 15% cysteine content. The last layer corresponds to the endocuticle, which is mainly composed by remaining cell organelles, and consists of proteins with low cysteine content (3% cysteine content). Hence, this layer swells more in water than the layers richer in cysteine, and it is mechanically softer. Finally, the cellular membrane complex (CMC) is the intercellular cement that holds the cuticle cells together, primarily composed of non-keratinous protein with low cysteine content (2%) [7,8]. The CMC comprises the  $\delta$ -layer enclosed on both sides by 2-lipid endowed  $\beta$ -layers.

**Cortex:** The cuticle encircles the cortex, the major part of the hair mass. The cortex is composed of cortical cells and the CMC. The elongated cortical cells enclose melanosomes containing eumelanin (brown/black pigment) and/or pheomelanin (red pigment), responsible for the hair color. These cells are tightly packed and contain macrofibrils which are parallel and longitudinal oriented to the hair fiber axis. Each macrofibril is arranged in a spiral formation and comprises intermediate filaments proteins (IFPs), also called microfibrils, and keratin associated proteins (KAPs), also known as matrix protein. The matrix is formed by crystalline proteins of high cystine content (approximately 21%). The intermediate filaments, low in cysteine (~6%), contain sub filamentous units, protofilaments, incorporating short sections of  $\alpha$ -helical polypeptide chains in coiled coil formation. The cortex is responsible for the great hair tensile strength. Three types of cortical cells have been observed in the hair fiber with different ratio of intermediate filaments and matrix arrangements: orthocortical, paracortical and mesocortical cells. Orthocortical cells contain less matrix among the intermediate filaments composed of keratin and allow cystine content (~3%); paracortical cells have higher matrix content and more regular intermediate filaments, have smooth and rounded edges, are smaller in diameter and have a higher cystine content. Cortical cells contain an intermediate level of cysteine. The bilateral asymmetric structure of these fibers is one possible factor contributing to the shape of the hair. However, recent studies describe the orientation of the keratins in human hair and divide them into different cell types. They propose a different nomenclature not based on wool-cell types: ortho, meso and paracortical, since human hair macrofibril-cell type relationships are less clear. In these studies, the classifications of cortical cells are type A (small discrete high-intensity double-twist macro fibrils), type B (close-packed macro fibrils with a mixture of intensities) and type C (large distorted fused macrofibrils) [9].

**Medulla:** Fine hair fibers are composed only by cuticle and cortex. With an increase in the hair fiber diameter, a third region, the medulla, may be found in the core of the hair fiber. Cells from medulla are spherical hollow vacuoles, which are loosely packed along the fiber, being bound together by a CMC-type framework. These cells only constitute a small percentage of the mass of keratin fibers. Medulla may be continuous, discontinuous or even entirely absent in the hair fiber [10]. Medulla is believed to contribute negligibly to the mechanical properties of hair fibers.

## HAIR COSMATICS:

**Herbal Shampoo:** Herbal shampoo is a widely used product all over the world. It has been used from many years. Today market filled with a chemical [11]. Chemical Shampoo prepared with several chemicals which can cure hair problem but also responsible for damage of hair. Some international research said that the chemical shampoos are also responsible for cancer [12]. Herbal is defined as a preparation of a surfactant (surface active material) in when used under the conditions specified debris from the hair shaft and scalp without affecting adversely the hair, scalp or health of the user. Herbal shampoo has so many types are powder, liquid, lotion, cream, jelly, aerosol, specialized herbal shampoo (Conditioning, Anti-dandruff, Baby, Two Layers). But the future of herbal shampoo is going to be herbal Shampoo [13]. It contains all the natural ingredients with herb extract. It helps hairs to improve their quality of moisture, shine, growth, thickening, strength of hair roots. The most advantage thing of herbal shampoo is that it has no any side effects. Herbal shampoo contains Amla, Reetha, Shikakai, Brahmi, Bhringaraj, Nagarmotha, Aloe vera, etc. Shampoos are of various types, like powder shampoo, clear liquid shampoo, liquid shampoo, lotion shampoo, solid gel shampoo, medicated shampoo, liquid herbal shampoo etc. As far as herbal shampoos are concerned in stability criteria. Depending upon the nature of the ingredients they may be simple or plain shampoo, antiseptic or antidandruff shampoo and nutritional shampoo containing vitamin, amino acids, proteins hydrolysate [14].

**Surfactants:** Surfactants are cleaning agents that substituted soap. They act through the weakening of the physicochemical adherence forces that bind impurities and residues to the hair. Surfactants dissolve these impurities, preventing them from binding to the shaft or the scalp. The cleansing ability of a shampoo depends on how well it removes grease as well as the type and number of surfactants used. [15,16] Residues are non-soluble fats (sebum) that do not dissolve with water. In order to be removed from the hair shaft, surfactants present a hydrophobic molecular portion, and another hydrophilic. The former will chemically bond with the fat, while the latter will bond with the water. The surfactants are generally composed of a chain of fatty hydrocarbons (tail) and a polar head. The polar extremity is capable of giving this portion of the molecule hydrophilic traits that allow it to dissolve in water and wash away the residues. The surfactants in contact with the water attain the structural formation of a micelle. Their structure becomes spherical with a hydrophilic exterior, which can be rinsed with water, and a hydrophobic interior where the fats and residue are bound.

When enough shampoo molecules have embedded their hydrocarbon ends in the particle, the surrounding water molecules attract the ionic ends of the surfactant. The particle then becomes emulsified, or suspended in water. In this form, it can be rinsed away.[17,18,19,20] Depending upon the electric charge of the polar extremity, the surfactants are classified in four groups: Anionic, cationic, amphoteric and nonionic. The main cleansing agents are anionic. The soap, which is also an anionic detergent, in contact with water, leaves an alkaline residue that is very harmful to the hair and skin and that precipitates in the form of calcium salts which accumulate in the hair strands, leaving them opaque and tangled. Such effects do not happen with the new anionic surfactants that are derived from the sulfating of fatty acids and analogue polioxiethylenes(alquil, sulfates, alquil ether sulfates) which are smooth cleansers and cosmetically superior. The current expression "sulfateless shampoo" refers to a preparation without the anionic surfactant. Theoretically the sulfate less shampoo creates a minimum electrical net, but there is no published analysis about effectiveness of these products regarding either cleansing power or hair shaft aggression[21,22,23] Cationic, amphoteric and nonionic surfactants are added to some shampoo formulas to reduce the static electricity generating effects caused by the anionic surfactants. Since they carry a positive charge, cationic surfactants bond quickly to the strands negatively charged due to the use of anionic surfactants and reduce the frizz effect. Besides, they optimize the formation of foam and the viscosity of the final product. The static electricity verified after the use of shampoo is exactly the result of a balancing out between the electric charges during the removal of sebum and residue. Negative charge of the hair fiber repels the also negative charge of the micelle. The repulsion of charges allows rinsing with water. However, the result is an increase of the preexisting negativity of the strands and the formation of stable complexes that bond with the keratin, creating repulsion between the strands due to excessive static electricity. Although the cationic agents try to neutralize this effect, there is the interference of the shampoo pH, which can increase the static electricity and reduce charge neutralization.

**Anionic surfactants:** Anionic surfactants are characterized by a negatively-charged hydrophilic polar group. Examples of anionic surfactants are ammonium lauryl sulfate, sodium lauryl sulfate, sodium lauryl sarcosinate, sodium myreth sulfate, sodium pareth sulfate, sodium lauryl sulfatealpha-olefin sulfonate, ammonium lauryl sulfate. Although very good in removing sebum and dirt, anionic surfactants are strong cleaners and may cause an increase on electrical negative charges on

the hair surface and increase frizz and friction. In order to minimize damage, other surfactants called secondary surfactants such as nonionic and amphoteric surfactants are added to the formulation. [24,25]

**Cationic surfactants:** Cationic surfactants have a positively charged hydrophilic end. Typical examples are trimethylalkylammonium chlorides, and the chlorides or bromides of benzalkonium and alkylpyridinium ions. All are examples of quaternary ammonium ion. They tend to neutralize the negatively charged net of the hair surface and minimize frizz. They are often used as shampoo's softeners.

**Amphoteric surfactants:** For the amphoteric surfactants, the charge of the hydrophilic part is controlled by the pH of the solution. This means that they can act as anionic surfactant in an alkali solution or as a cationic surfactant in an acidic solution. They are very mild and have excellent dermatological properties. There are two types of amphoteric compounds: Alkyl aminopropionates and (amino) betaines.[26]

**Nonionic surfactants:** Nonionic surfactants have no electric charge. They do not ionize in aqueous solutions because their hydrophilic group is of a no dissociable. Many long chain alcohols exhibit some surfactant properties. Prominent among these are the fatty alcohols, ethyl alcohol, stearyl alcohol, and ketostearyl alcohol (consisting predominantly of ethyl and stearyl alcohols), and oleyl alcohol[27]

## HAIR CONDITIONERS

Conditioners are used to decrease friction, detangle the hair, minimize frizz and improve compatibility. Conditioners act by neutralizing the electrical negative charge of the hair fiber by adding positive charges and by lubricating the cuticle that reduces fiber hydrophilicity. They contain anti-static and lubricating substances that are divided into 5 main groups: Polymers, oils, waxes, hydrolyzed aminoacids and cationic molecules. The most active and used conditioner agent is a silicone.[28] There are different types of silicones with different deposition, adherence and wash out capacity which will lead to different performances of the conditioner.[29] The ideal conditioner is capable of restore the hydrophobicity of the fiber and neutralize the static electricity. Depending on the capacity of entering the fiber, the conditioner may reach the cuticle surface or the inner part of the cortex. Smaller molecules can reach the cortex. Larger one act on the cuticle. Low molecular weight polypeptides (<10.000 Da) can diffuse into hair. Bigger molecules (500.000 Da) can diffuse

into the cuticle, especially on bleached hair. The preferred route is intercellular diffusion or diffusion through the non-keratin regions, although intracellular diffusion may also occur. Higher molecule weight polymers (<600.000 Da) may sorption on the surface of the hair shaft. Cationic ingredients such as cationic polymers are very popular in hair products. They can be so substantive to the hair that they can be difficult to remove. They are highly substantive to hair because of the hair's low isoelectric point (pH - 3.67). Any cosmetic with higher pH bears a net negative charge on the hair surface, and therefore cationic charges (positive) are attracted to it. Also, Van der Waals forces and entropy are necessary to bind the molecule to the fiber, and they must be resistant to rinsing with water. [30] Examples of such polymers are: Benzyl dimethyl ammonium chloride and distearyldaimonium chloride. The good correlation between silicone oil droplets stability, deposition on hair and resultant friction of hair support that droplet size and uniformity are important factors for controlling the stability and deposition property of emulsion-based products such as shampoo and conditioner.

It is common to use cationic ingredients in many shampoos' formulations with anionic surfactants in order to result in charge neutralization forming a cationic-anionic complex, a neutral hydrophobic ingredient. Therefore, we can understand that the interaction between the ingredients is more important than the ingredient alone, as we are led to believe by the media. It is very common to think that a new release product that contains a certain ingredient has the magic ability to transform dull hair into shiny and smooth hair. Most of the time, the major ingredients do not change, and sometimes the capacity of the ingredients to interact inside the shampoo's or conditioner's chassis or system is what makes the product acts better. Bleached and chemical treated hair have a higher affinity to conditioning ingredients because they have a low isoelectric point (higher concentration of negative sites) and are more porous than virgin hair.

### HERBAL HAIR OIL

Hair is the one of the vital parts of our body and it influences the overall appearance of the person. Hair care products are defined as those formulations which are used for cleansing, modifying the texture of hair, changing of the color, giving life to the stressed hair, providing nourishment to the hair and giving the healthy appearance to the hair [31] There are two categories of hair care products these are hair tonics and second is hair grooming aids. Hair oil those contains herbal drugs are called as hair tonics.

These are formulated by herbal extracts in an oil base. 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. [32], 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 moisturize 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[33] Herbal hair oils were serving the purpose of hair treatment, there are two categories of hair care products. They are hair tonics and hair grooming aids. Hair oil those contains herbal drugs are called as hair tonics. These are formulated by herbal extracts in an oil base. Hair oils are the hair care formulations applied for treatment of hair disorders such as baldness, graying of hairs, hair falling, and dryness of hairs.

### COMMON HERBS USED IN HAIR COSMETIC ARE AS FOLLOW [34,35] BRAHMI

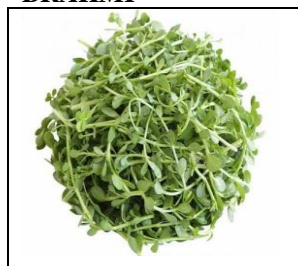


Fig :2 Brahmi

Brahmi is used in Ayurveda for nourishment and to prevent hair loss. Head massaging using Brahmi oil increases blood circulation in the scalp and makes the roots of the hair stronger. Brahmi oil is used to treat dry, flaky scalp and dandruff. Brahmi used as a powder in a mask or oil can reduce pre-mature greying, hair loss, promotes hair density, shine and treats scalp irritation.

### CASTOR OIL



Fig:3 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 split 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. Castor oils contain omega 9 essential fatty acids, vitamin E, oleic acid, enzymes and minerals which makes it an amazing herbal remedy. Using cold-pressed, unrefined and extra virgin castor oil is best for hair health.

#### COCONUT OIL:



Fig :4 Coconut oil

I have growth up using coconut oil for my hair! My mother always said, "Oils are food for hair." 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.

#### FALSE DAISY (BHRINGRAJ):



Fig :5-false daisy

Another Ayurvedic herb for hair is Bhringraj used in many popular hair oils. It is an amazing remedy for pre-mature greying. Bhringraj is used for controlling hair loss, encouraging new hair growth, strengthening the hair follicles, fights dandruff,

improve hair color and texture. It also improves sleep and it fights against skin allergies. Bhringraj can be used as hair oil or powdered Bhringraj can be used in hair masks.

#### FENUGREEK (METHI):



Fig :6 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.

#### HIBISCUS FLOWER:



Fig :7 hibiscus flower

This is one amazing flower for hair health whether used fresh or dried. 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). Note that both flower and leaves can be used to make a paste for a hair mask but flower may contain a little more nutrient. Add fenugreek (methi) or yogurt in the same paste for a health hair mask to combat dandruff. Hibiscus is also known to stop premature greying hair.

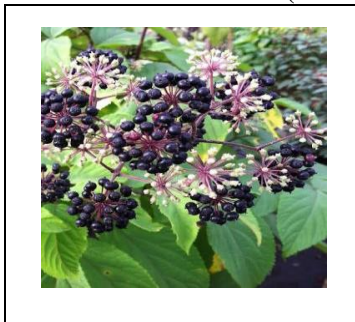
### INDIAN GOOSEBERRY (AMLA):



**Fig:8-indiangosbery**

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.

### INDIAN SPIKENARD (JATAMANSI):



**Fig:9-indian spikenard**

Jatamansi is an Ayurvedic herb that has the ability to calm the nerves and the mind which is required for strong hair follicles and preventing hair loss. Add Jatamansi in powdered form for hair masks. Jatamansi also promotes relaxing and blissful sleep. Jatamansi is also known to prevent pre-mature greying. Jatamansi oil is available in Ayurvedic stores in almond oil base which makes it a great product for hair care.

### CURRY LEAVES:



**Fig :10-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 anti-bacterial affect. High in antioxidants such as vitamin A, C, E, folic acid and minerals such as iron, curry leaves are truly nourishing for hair.

### RITHA OR REETHA:



**Fig :11 Reetha**

South East Asians use Reetha as a natural shampoo, cleanser and conditioner. Reetha helps prevent hair fall, adds volume and shine. Reetha also fights against dandruff and dried scalp. Using Reetha is like using a chemical free shampoo. Reetha contains anti-bacterial, anti-microbial and anti-fungal properties which help to fight against head lice. Reetha is available dry or powdered. Reetha with Amla and Shikakai (100 gram of each of the herb) can be boiled in two liters of water. Boil until half the water is remained. Strain and this water can be used as shampoo. For dark hair, make a paste with water and equal parts of henna and Reetha

### SHIKAKAI



**Fig:12-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.

#### NEEM:



**Fig 13-neem**

Best used as oil, neem oil is the best remedy to combat dandruff, dryness and lice (anti-microbial properties). Neem oil prevents hair loss and promotes hair growth. Add powdered neem, Tulsi and Amla to combat dry hair and eliminate dandruff problems.

#### APPLICATIONS OF HERBAL COSMETICS: [34]

1. They do not provoke allergic reaction & do not have negative side effect

2. Compared to other beauty products, natural cosmetics are safe to use
3. Herbal cosmetics are suitable for all skin types i.e. compatible with all type of skin.
4. Herbal cosmetics are not that expensive
2. They are easily incorporated with skin and hair
3. With small quantity they are very effective as compared to synthetic cosmetics.
4. Easily available & found in large variety and quantity.

#### CONCLUSION

Herbal hair cosmetics are formulated using various herbal ingredients are used to treat the skin and hair for the beautification. The formulation of all these cosmetic products includes addition of various natural additives like waxes, oils natural color, natural fragrances and parts of plants like leaves, etc. The demand of herbal cosmetic is increases day to day due to their skin and hair friendliness and lack of side effects. The best thing of the herbal cosmetics is that it is purely made by the herbs and shrubs and have less side-effects. The natural content in the herbs does not have any side effects on the human body; instead provide the body with nutrients and other useful minerals. So in future herbal hair cosmetic is promising approach to herbal cosmetics industry.

#### REFERENCES

1. Mithal B, Shah R. A Hand Book of Cosmetics. 1st ed. New Delhi: VallabhPrakashan:2000. 141-2.
2. Saraf S. Herbal hair oil cosmetics Advancements and recent findings. World J Pharm Res 2014; 3:3278-94.
3. Dwivedi S. Formulation and evaluation of herbal hair oil. Int J Chem Sci 2012; 10:349-53.
4. Robbins, C.R. Chemical and Physical Behavior of Human Hair: 4th ed, Springer-Verlag ,Heidelberg, Germany, 2012.
5. Wolfram, L.J. Human hair: A unique physicochemical composite. J. Am. Acad. Dermatol. 2003, 48, 106–114
6. Seshadri, I.P.; Bhushan, B. Effect of ethnicity and treatments on in situ tensile response and morphological changes of human hair characterized by atomic force microscopy. Acta Mater. 2008, 56, 3585–3597.
7. Bhushan, B. Nanoscale characterization of human hair and hair conditioners. Prog. Mater. Sci. 2008, 53,585–710.
8. Bryson, W.G.et al. K. Cortical cell types and intermediate filament arrangements correlate with fiber curvature in Japanese human hair. J. Struct. Biol. 2009, 166, 46–58.
9. Harland, D.P et al, Three-dimensional architecture of macro fibrils in the human scalp hair cortex. J. Struct. Biol. 2014, 185, 397–404.
10. Dawber R Hair: Its Structure and Response to Cosmetic Preparations. Clin. Dermatol. 1996, 14, 105–112
11. Khaloul Al Badi, Shah A. Khan, Formulation evaluation and comparison of the herbal shampoo with commercial shampoo, BeniSuef University journal of Basic and applied science vol pp.301-305, 2014.
12. Thitilertdecha N, et al N. Identification of major phenolic compounds from NepheliumlappaceumL. Andthere and their antioxidant activities. Molecules Thitilertdecha N, Teerawutgulrag A, Kilburn 2010;15:1453–65.
13. MahendranSekar,Haleeda,Aqeela.MericanFormulation And Evaluation Of Herbal Shampoo Containing Rambutan Leaves Extract Int J Pharm Bio Sci 2016 146 – 151.
14. Dawber R. Hair: Its structure and response to cosmetic preparations. Clin Dermatol. 1996; 14:105–12.
15. Robbins CR. Chemical and Physical Behavior of Human Hair. 4th ed. New York: Springer; 2013.
16. Madnani N, Khan K. Hair cosmetics. Indian J DermatolVenereLeprol. 2013; 79:654–67.
17. Shapiro J, Maddin S. Medicated shampoos. Clin Dermatol. 1996; 14:123–8.



18. Diksha, Malviya R, Sharma PK. Advancement in shampoo (a dermal care product): Preparation methods, patents and commercial utility. *Recent Pat Inflamm Allergy Drug Discovery*. 2014; 8:48–58.
19. Draelos ZD. *Hair Care-an Illustrated Dermatologic Hand Book*. 1st ed. United Kingdom: Taylor and Francis; 2005.
20. Draelos ZD. Essentials of Hair Care often Neglected: Hair Cleansing. *Int J Trichology*. 2010; 2:24–9.
21. Tribe RM. Shampoo. *Ther Umsch*. 2002; 59:256–61
22. Tribe RM. Shampoos: Composition and clinical applications. *Hautarzt*. 1998; 49:895–901.
23. Draelos ZD. Shampoos, conditioners, and camouflage techniques. *Dermatol Clin*. 2013; 31:173–8.
24. Abraham LS, Moreira AM, Moura LH, Dias MF. Hair care: A medical overview: Part 1. *Surg Cosmetic Dermatol*. 2009; 1:130–6.
25. Abraham LS, Moreira AM, Moura LH, Dias MF. Hair care: A medical overview: Part 2. *Surg cosmetic Dermatol*. 2009; 1:178–85.
26. Hsiung DY. Hair straightening. In: De Navarre MG, editor. *The Chemistry and Manufacture of Cosmetics*. 2nd ed. Vol. 4. Wheaton: Allured Publishing Corporation; 1993. pp. 1155–65.
27. OLenick T. Anionic/cationic complexes in hair care. *J cosmetic Sci*. 2011; 62:209–28.
28. La Torre C, Bhushan B. Nanotribological effects of silicone type, silicone deposition level, and surfactant type on human hair using atomic force microscopy. *J cosmetic Sci*. 2006; 57:37–56.
29. Nazir H et al Uniform-sized silicone oil microemulsion Preparation, investigation of stability and deposition on hair surface. *J Colloid Interface Sci*. 2011; 364:56–64.
30. Nazir H, et al. Multilayered silicone oil droplets of narrow size distribution: Preparation and improved deposition on hair. *Colloids Surf B Biointerfaces*. 2012; 100:42–9.
31. Pande SD et al. Formulation and Development of a Liposome Based Hair Revitalizer. *Research Journal of Topical and Cosmetic Science*, 2011; 2(1): 14-17
32. Nema RK et al. Preparation, evaluation and hair growth stimulating activity of herbal hair oil. *Journal of chemical and pharmaceutical research*, 2009; 1(1): 261-267.
33. Gautam S. et al Formulation and evaluation of herbal hair oil. *Int. J. Chem. Sci.*, 2012; 10(1): 349-353.
34. *Salvia officinalis*. [http:// in. Wikipedia .org /wiki/salviaofficinalis](http://in.Wikipedia.org/wiki/salviaofficinalis).