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A simple analysis on herbal cosmetics

D. Sripriya* and Sandhya Sri. D

Department of Biotechnology, School of Herbal Studies and Naturo Sciences, Dravidian University, Kuppam 517 426, A.P. India.

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Abstract

India is an emphasis for development of Ayurveda, Unani, Siddha, Homoeopathy and alternative natural herbs based health science (AYUSH). Ayush Pharmaceutical industry having great possible and contingency for saundarya prakasha category (herbal cosmetics) development in future. Natural beauty is blessing and cosmetics help in presenting and increasing the beauty and personality aspects of human beings. Saundarya prasada are the preparation, which represent cosmetic base associate with known Ayurveda, Siddha and Unani (ASU) drugs active ingredient (which reference are readily available in schedule 1st book of Drug and cosmetic act 1940 and rule 1945). In traditional era people were used to various lepa, Alepa, Pralepa, Udavartan, Prakshalan etc. for saundarya prasada karma. Nature has offered the way to keep up that parity. Herbs! Yes, herbs are one such means. An herb is a plant or plant extract, including leaves, bark, berries, roots, gums, seeds, stems and flowers which are favor with nourishing and healing elements. Cosmetics alone are not competent to take care of skin and others body parts, it requires association of active ingredients to check the fatality and ageing of the skin. Herbal cosmetics have improved much admiration among the population. Herbal cosmetics products appealed to have efficacy and essential suitability due to routine use in daily life and avoid the adverse effects which are commonly seen in synthetic products.

Keywords: Herbal extracts; Herbal drug; Cosmetics; Ayurveda; Siddha; Unani

1. Introduction

The word cosmetic was imitative from the Greek word "kosm tikos" meaning having the power, arrange, skill in beautifying. The origin of cosmetics forms a continuous narrative throughout the history of man as they established. The man in prehistoric times 3000 BC used colors for decoration to attract the animals that he wished to hunt and also the man survived attack from the enemy by coloring his skin and adorned his body for protection to incite fear in an enemy (whether man or animal). The origin of cosmetics was allied with hunting, fighting, religion and superstition and later associated with medicine.

The term Cosmeceuticals was first used by Raymond Reed founding member of US Society of Cosmetics Chemist in 1961. He actually used the word to brief the active and science based cosmetics. The above term was further used by Dr. Albert Kligman in the year 1984 to refer the substances that have both cosmetic and therapeutic benefits. Cosmeceuticals are cosmetic pharmaceutical mixtures intended to enhance health and beauty through ingredients that influence the skin's biological texture and function.

The only feature they had to trust on was the knowledge of nature compiled in the Ayurveda. The science of Ayurveda had utilized many herbs and floras to make cosmetics for beautification and protection from external affects. The natural content in the botanicals does not cause any side effects on the human body; instead enrich the body with nutrients and

* Corresponding author: D. Sripriya, Email: sripriyashok13@gmail.com

Department of Biotechnology, School of Herbal Studies and Naturo Sciences, Dravidian University, Kuppam – 517 426, A.P., India.

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other useful minerals. The cosmetics, according to the Drugs and Cosmetics Act is defined as articles intended to be rubbed, poured, sprinkled or sprayed on, introduced into or otherwise applied to the human body or any part for cleansing, beautifying, promoting attractiveness or altering the appearance. The cosmetic does not come under the preview of drug license. There is common belief that chemical based cosmetics are harmful to the skin and an increased awareness among consumers for herbal products triggered the demand for natural products and natural extracts in cosmetics preparations. The increased demand for the natural product has created new avenues in cosmeceutical market. The Drug and Cosmetics Act specify that herbs and essential oils used in cosmetics must not claim to penetrate beyond the surface layers of the skin nor should have any therapeutic effect.

Herbal cosmetics, here in after referred as products, are formulated, using various permissible cosmetic ingredients to form the base in which one or more herbal ingredients are used to provide defined cosmetic benefits only, shall be called as "Herbal Cosmetics". The history of the herbal cosmetics industry includes very dark chapters in European and Western countries from about six centuries back. Mixtures and pastes were then used to whiten the face, a practice which remained popular till over four hundred years later. The early mixtures that were used in Europe for this purpose were so potent that they often led to paralysis, strokes or death. In that era, the history of herbal cosmetics in the 1940s shows how the fashion or trend with respect to lipstick colors was changed annually, getting darker and closer to red every passing year.

There is an extensive variety of the herbal cosmetics that are produced and commonly used for daily purposes. Herbal cosmetics like herbal conditioner, herbal soaps, herbal face wash, herbal shampoo, and many more are exceptionally acclaimed by the masses. The best thing of the herbal cosmetics is that it is purely made by the herbs and shrubs. The natural content in the herbs does not have any reactions on the human body; rather enhance the body with, supplements and other helpful minerals. Herbal cosmetics are comprised of floras like saffron (kesar), ashwagandha, sandal (chandan) and numerous increasingly that is expanded with healthy nutrients and all the various essential components. It is evaluated that roughly 400 flavors are utilized far and wide, although only about 70 spices are officially recognized. Herbs have variety of function such as food flavorings, cosmetics and medicine in the forms of tea, tablet, capsule, tincture, cream, syrup and liquid.

The worldwide herbal industry is currently evaluated to be more than US\$10 billion dollars and expanding at a rate of three to four percent annually for reasons of increased consumption in processed foods and demand for ethnic foods, natural fragrances, and innovation in beverage products. The biggest markets, regarding of manufacturing and consumption are in Europe, followed by Asia.

Herbal medicines include herbs, herbal materials, herbal preparations and finished herbal products. In some countries herbal medicines may contain, by tradition, natural organic or inorganic active ingredients that are not of plant origin (e.g. animal and mineral materials).

Herbs include crude plant material, such as leaves, flowers, fruit, seeds, stems, wood, bark, roots, rhizomes or other plant parts, which may be entire, fragmented or powdered.

Herbal materials include, in addition to herbs, fresh juices, gums, fixed oils, essential oils, resins and dry powders of herbs. In some countries, these materials may be processed by various local procedures, such as steaming, roasting or stir- baking with honey, alcoholic beverages or other materials.

Herbal preparations are the basis for finished herbal, products and may include comminute or powdered herbal materials, or extracts, tinctures and fatty oils of herbal materials. They are produced by extraction, fractionation, purification, concentration, or other physical or biological processes. They also include preparations made by steeping or heating herbal materials in alcoholic beverages and/or honey, or in other materials.

Finished herbal products consist of herbal preparations made from one or more herbs. If more than one herb is used, the term "mixture herbal product" can also be used. Finished herbal products and mixture herbal products may contain excipients in addition to the active ingredients.

However, finished products or mixture herbal products to which chemically defined active substances have been added, including synthetic compounds and/or isolated constituents from herbal materials, are not considered to be herbal.

2. Present Status

Herbalists today, believe to help people build their good health with the help of natural sources. Herbs are considered to be food rather than medicine because they're complete, all- natural and pure, as nature intended. When herbs are taken, the body starts to get cleansed, it gets purifying itself. Unlike chemically synthesized, highly concentrated drugs that may produce many side effects, herbs can effectively realign the body's defense. Herbs do not produce instant cures, but rather offer a way to put the body inproportune with nature for thousands of years, humans have used herbs. Herbs have been used in the following ways - In cooking for flavoring foods, as perfumes, as disinfectants, to protect us against germs, as medicines to heal when we are sick.

Advantages of Herbal Cosmetics over Synthetic: Herbal cosmetics are the modern trend in the field of beauty and fashion. These agents are gaining popularity as nowadays most women prefer natural products over chemicals for their personal care to enhance their beauty as these products supply the body with nutrients and enhance health and provide satisfaction as these are free from synthetic chemicals and have relatively less side-effects compared to the synthetic cosmetics.

Following are some of the advantages of using natural cosmetics which make them a better choice over the synthetic ones:

2.1. Natural Products

The name itself suggests that 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 these products, e.g. Aloe vera gel and coconut oil. They also consist of natural nutrients like Vitamin E that keeps skin healthy, glowing and beautiful. For example, Aloe vera is an herbal plant species belonging to Liliaceae family and is naturally and easily available. There are a rising number of consumers concerned about ingredients such as synthetic chemicals, mineral oils who demand more natural products with traceable and more natural ingredients, free from harmful chemicals and with an emphasis on the properties of botanicals.

2.2. Safe to Use

Compared to other beauty products, natural cosmetics are safe to use. They are hypo- allergenic and tested and proven by dermatologists to be safe to use anytime, anywhere. Since they are made of natural ingredients, people don't has to worry about getting skin rashes or experience skin itchiness. Example - BHA (Butylated Hydroxy- anisole) and BHT (Butylated Hydroxytoluene) are closely related synthetic antioxidants and are used as preservatives in lipsticks and moisturizers. BHA and BHT can induce allergic reactions in the skin. The international Agency for Research on Cancer classifies BHA as a possible human carcinogen. Herbal cosmetics contain natural antioxidants like Vitamin C.

2.3. Companionable with All Skin Types

Natural cosmetics are suitable for all skin types. No matter if you are dark or fair, you will find natural cosmetics like foundation, eye shadow, and lipstick which are appropriate irrespective of your skin tone. Women with oily or sensitive skin can also use them and never have to worry about degrading their skin condition.

Coal tar derived colors are used extensively in cosmetics; coal tar is recognized as a human carcinogen and the main concern with individual coal tar a color (whether produced from coal tar or synthetically) is they can cause cancer. But natural colors that are obtained from herbs are safer.

2.4. Wide Selection to choose from

Natural cosmetics may still be a new type in the beauty industry but they already offer a variety of beauty products for all make up crazy people out there to choose from. One will find a variety of foundation, eye shadow, lipstick, blush, mascara, concealer and many more which are all naturally formulated. Furthermore, one will find locally made natural cosmetics or those made by famous designers worldwide. There exist a large variety of herbal extracts, to name a few *Andrographis paniculata* (Kalmegh), *Asparagus racemosus* (Shatawari), *Boswellia serrata* (Salai Guggal), *Asphalt* (Shilajit) etc.

2.5. Outbursts Your Budget

Natural cosmetics are not that expensive. In fact, some of these products are more affordable than synthetic ones. They are offered at discounted prices and are sold for a cheap price during sales. Just need to survey enough to look for great

deals. An estimate of WHO demonstrates about 80 % of world population depends on natural products for their health care, because of side effects inflicted and rising cost of modern medicine. World Health Organization currently recommends and encourages traditional herbal cures in natural health care programs as these drugs are easily available at low cost and are comparatively safe.

2.6. Not Tested on Animals

Some cosmetics are initially tested on animals to ensure that they are safe and effective to use for human. However, natural cosmetics need not be tested on animals. These natural formulations are tested by experts in laboratories using state of the art equipment with no animals involved.

2.7. No Side Effects

The synthetic beauty products can irritate your skin, and cause pimples. They might block your pores and make your skin dry or oily. With natural cosmetics, one need not worry about these. The natural ingredients used assure no side effects; one can apply them anytime, anywhere. For example, herbal cosmetics are free from parabens that are the most widely used preservative in cosmetics and can penetrate the skin. And are suspected of interfering with hormone function (endocrine disruption).

2.8. Monitoring Status

The legal difference between a cosmetic and a drug is determined by a products intended use. Under present concept, the boundary at which a cosmetic product becomes drug is not well-defined and different laws and regulations apply to each type of product.

The drugs and cosmetic Act 1940 defines a drug and a cosmetic as; Drug- "All medicines for internal or external use of human beings or animals and all substances intended to be used for; or in the diagnosis, treatment, mitigation or prevention of any disease or disorder in humans or animals".

Cosmetic- "Any article intended to be rubbed, poured, sprinkled or sprayed on or introduced into or applied to any part of the human body for cleansing, beautifying, promoting attractiveness or altering the appearance and includes any article intended for use as a component of cosmetic".

Some products meet the definitions of both cosmetics and drugs. This may happen when a product has more than one intended uses. For example, a shampoo is a cosmetic because its intended use is to clean the hair. An anti-dandruff shampoo is a drug because its intended use is to treat dandruff. Among the cosmetic/drug combinations are toothpastes that contain fluoride, deodorants that are antiperspirants and moisturizers with sun-protection claims. The claims made about drugs are subject to detailed analysis by the Food and Drug Administration (FDA) review and approval process, but cosmetics are not subject to mandatory FDA review. Although there is no legal category called cosmeceuticals, the term has found application to designate the products at the border line between cosmetics and pharmaceuticals.

Federal Food, Drug and Cosmetic Act do not recognize the term itself. It is also often difficult for consumers to determine whether „claims" about the actions or efficiency of cosmeceuticals are valid unless the product has been approved by the FDA or equivalent agency. Some countries have the classes of products that fall between the two categories of cosmetics and drugs: for example, Japan has „Quasi-drugs"; Thailand has „controlled cosmetics" and Hong Kong has „cosmetic-type drugs". The regulations of cosmeceuticals have not been harmonized between the USA, European, Asian and other countries.

2.9. Indian Extracts for Herbal Cosmetics

Herbs play a significant role, especially in modern times, when the damaging effects of food processing and overmedication have assumed alarming proportions. They are now being increasingly used in cosmetics, foods and teas, as well as alternative medicines. The growing interest in herbs is a part of the movement towards change in life-styles. This movement is based on the belief that the plants have a vast potential for their use as a curative medicine.

2.9.1. Aloe vera

Is a most ingenious mixture of an antibiotic, an astringent coagulating agent, a pain inhibitor and a growth stimulator (also called a "wound hormone"), whose function is to accelerate the healing of injured surfaces. It is used for pain relief and healing of 'hemorrhoids, applied externally and internally it's also used for sunburn, scratch and a cleansing purge for the body or skin. It is an aid to growing new tissue and alleviating the advance of skin cancer caused by the sun.

2.9.2. Amla (*Emblica officinalis*)

Amla is the name given to the fruit of a small leafy tree (*Emblica officinalis*), which grows throughout India and bears an edible fruit. This fruit is highly prized both for its high Vitamin C content and for the precious oil, which is extracted from its seeds and pulp and used as a treatment for hair and scalp problems. It is used in eye syndromes, hair loss and children ailments etc.

2.9.3. Brahmi (*Bacopa monnoria*)

Reetha powder is prepared from dried fruit of Reetha. It can be used as a face pack to improve facial complexion. It is used as a hair application to make hair shiny and their beautification. It also removes dandruff and lice in hair. It can also be used to clean jewelry and washing woolen clothes. It is used in Ayurvedic preparations and Herbal Shampoos.

2.9.4. Multani Mitts (*Fullers Earth*)

It is Mother Nature's own baby powder. Clay was one of the earliest substances to be used as a beauty mask to draw oils from the skin, natural moisturizers for hairs, teeth, gums and hair. To remove pimple marks, treating sunburn, helps unclog pores, to cleanse the skin of flakes and dirt.

2.9.5. Neem (*Azadirachata indica*)

"Sarva Roga Nivarini: the curer of all ailments" Neem's role as a wonder drug is stressed as far back as 4500 years ago. Some of its health restoring benefits Effective in skin infection, rashes and pimples, immunity booster, anti-obesity, blood purifier for beautiful and healthy skin, anti-diabetic, anti-viral, dispels intestinal worms and parasites, malaria, piles, hair disorder and oral disorders.

2.9.6. Shikaka (*Acasia concinna*)

Acasia concinna is a small shrub-like tree, which grows in the warm, dry plains of central India. For centuries the people who have had access to this tree have used its pod- like fruit to clean their hair. It,s considered a superior cleanser for "lustrous long hair" and has been reported as "promoting hair growth and preventing dandruff. It also helps in removing dandruff and lice and very effective in removing oil and dirt from hair.

3. Herbal Medicines for Treatment of Innumerable Complaints

3.1. Dry Skin Treatment

3.1.1. Aloe vera

A native of southern Africa, the Aloe vera plant has fleshy spiny-toothed leaves and red or yellow flowers. It is an ingredient in many cosmetics because it heals moisturizes, and softens skin. Simply cut one of the Aloe vera leaves to easily extract the soothing gel. Aloe vera contains amino acids like leucine, isoleucine, saponins glycosides that provide cleansing action, Vitamins A, C, E, B, choline, B12 and folic acid and provide antioxidant activity.

3.1.2. Coconut Oil

It is produced by crushing copra, the dried kernel, which contains about 60 - 65 % of the oil. Coconut oil contains a high amount of glycerides of lower chain fatty acids. Coconut oil is derived from the fruit or seed of the coconut palm tree *Cocos nucifera*, family *Arecaceae*. The melting point of coconut oil is 24 to 25 °C (75 - 76 °F) and thus can be used easily in liquid or solid forms and is often used in cooking and baking. Coconut oil is excellent as a skin moisturizer and softener.

3.1.3. Jojoba Oil

It is a mixture of long chain, linear liquid wax esters extracted from the seeds of the desert shrub *Simmondsia chinensis*, family *Simmondsiaceae*. Jojoba oil is easily refined to remove any odour, colour it is oxidatively stable, and is often used in cosmetics as a moisturizer and as carrier oil for exotic fragrances. Human sebum and jojoba oil are virtually identical. Sebum protects and moisturizes the skin and hair but is stripped away by chemicals, pollutants, sun and the aging process, resulting in dry skin and hair. Jojoba oil replenishes what skin and hair loss and restores them to their natural pH balance.

3.1.4. Olive Oil

This oil is a fixed oil extracted from the fruits of *Olea europaea*, family oleaceae. The major constituents are triolein, tripalmitin, trilinolein, tristearate, monosterate, triarachidin, squalene, β -sitosterol and tocopherol. It is used as skin and hair conditioner in cosmetics like lotions, shampoos etc. It is a potent fatty acid penetration enhancer.

3.1.5. Sunflower Oil

It is the non-volatile oil extracted from sunflower seeds obtained from *Helianthus annuus*, family Asteraceae. Sunflower oil contains lecithin, tocopherols, carotenoids and waxes. It has smoothing properties and is considered non-comedogenic.

Simple yet cost-effective oil, well tried and tested for generations in a wide variety of emulsions formulated for face and body products.

3.2. Skin Protection

3.2.1. Green tea

The tea plant has been cultivated in Asia for thousands of years³⁴. Green tea is tea made solely with the leaves of *Camellia sinensis* belonging to family Theaceae³⁵. The 4 major polyphenolic catechins present in green tea leaves are (2)-epicatechin (EC), EGC, (2)-EC-3-gallate, and EGCG, which is the most abundant.

It was found that green tea extracts or an individual green tea polyphenol (GTPP), especially epigallocatechin (EGC)-3-gallate (EGCG), inhibited two-stage chemical carcinogenesis (e.g, induced by 7,12-di-methylbenz(a)anthracene [DMBA] and 12-O-tetra decanoylphorbol 13-acetate [TPA]) and photo-carcinogenesis (induced by UVB)³⁸. It is a premiere skin protectant. It protects against direct damage to the cell and moderate's inflammation. The catechins in green tea are some 20 times stronger in their antioxidant powers than even Vitamin E.

3.2.2. Calendula

Calendula officinalis is reported to have a remarkable antioxidant activity, anti-inflammatory activity and wound healing activity. The essential oil of *Calendula* consists mainly of α -thujene, α -pinene, 1,8-Cineole, dihydrotagetone and T-muurolol. *Calendula* in suspension or in tincture is used topically to treat acne, reducing inflammation, controlling bleeding and soothing irritated tissue. There is "limited evidence" that calendula cream or ointment is effective in treating radiation dermatitis.

3.2.3. Turmeric

Turmeric is used in many celebrations of Hindus. Especially in Hindu wedding brides would rub with turmeric on their bodies for glowing look. New born babies also rubbed with turmeric on their forehead for good luck. Traditionally women rub turmeric on their cheeks to produce a natural golden glow. It is a deep yellow-to-orange powder that comes reduce the number of Ultraviolet B (UVB)-induced sunburn cells in mice.

3.3. Anti-aging Cure

3.3.1. Carrot

It is obtained from the plant *Daucus carota* belonging to family Apiaceae. It is a valuable herb since ages as due to its richness in Vitamin A along with other essential Vitamins. Carrot seed oil is used as anti-aging, revitalizing and rejuvenating agent. The carrot gets its characteristic and bright orange color from β -carotene, and lesser amounts of α -carotene and γ -carotene. α and β -carotenes are partly metabolized into Vitamin A in humans.

3.3.2. Ginkgo

It comes from the ginkgo tree, *Ginkgo biloba* belongs to family Ginkgoaceae. It is best known, as a circulatory tonic, in particular for strengthening the tiny little capillaries to all the organs, but especially to the brain. The capillaries become more flexible and as a result more oxygen is delivered to the brain and eyes (to protect against degenerative eye diseases like macular degeneration), as important as we age.

In China and Japan, the leaves and nuts of the *Ginkgo biloba* (*G. biloba*) tree have been used for thousands of years to treat various medical conditions, including poor blood circulation; hypertension; poor memory, and depression, particularly among the elderly; male impotence. In addition, it is gaining a similar reputation as an antioxidant and anti-

inflammatory agent 45. The *G. biloba* extract EGb 761, prepared from the tree's leaves, is a natural mixture containing flavone glycosides (33%), mostly quercetin and kaempferol derivatives, and terpenes (6%), which has exhibited the capacity to isolated from the leaves of *Lawsonia inermis* has shown significant antifungal antibiotic effect.

3.3.3. *Rhodiola rosea*

It is commonly known as golden root, roseroot, Aaron's rod, arctic root, king's crown, Lignum rhodium, orpin rose. It is a plant in the Crassulaceae family that habitats in cold regions of the world. It grows mainly in dry sandy ground at high altitudes in the arctic areas of Europe and Asia, traditional folk medicine used *R. rosea* to increase physical endurance, work productivity, longevity, resistance to high altitude sickness, and to treat fatigue, depression, anemia, impotence, gastrointestinal ailments, infections, and nervous system disorders. *R. rosea* is rich in phenolic compounds, known to have strong antioxidant properties.

3.4. Dandruff Treatment

Ayurveda has numerous natural medications wherein the most common herbs include neem, kapoor (naphthalene) and henna, hirda, behada and amalaki, magic nut, bringaraj, rosary pea, sweet flag, cashmere tree and mandor.

3.4.1. Henna

Henna comes from the plant *Lawsonia inermis* family Lythraceae, which contain a dye molecule called lawsone, which when processed produces Henna powder. Besides lawsone other constituents present are gallic acid, glucose, mannitol, fats, resin (2%), mucilage and traces of an alkaloid. Leaves yield hennatannic acid and an olive oil green resin, soluble in ether and alcohol. Lawsone edible fruit. It is highly praised both for its high Vitamin C content and for the precious oil, which is extracted from its seeds and pulp and used as a treatment for hair and scalp problems. It is used in eye syndromes, hair loss, and children ailments etc.

3.4.2. Neem

The herb, *Azadirachta indica*, family Meliaceae has been found to have the properties of a Blood purifier, beauty enhancer. The common treatment for the dandruff. Neem as it produces antifungal, antibacterial, pain-relieving, and anti- compounds that would treat dandruff.

3.4.3. Shikakai

Acacia concinna Linn. (Leguminosae) is a medicinal plant that grows in tropical rainforests of Southern Asia. The fruits of this plant are used for washing hair, for improving hair growth, as an expectorant, emetic, and purgative. The powder of *Acacia concinna* Linn. shows the presence of saponins, alkaloid, sugar, tannin, flavanoids, anthraquinones glycosides.

3.5. Hair Care

Various oils derived from vegetable and mineral sources, and are used in cosmetics. Examples of vegetables oils are almond oil, arachis oil, castor oil, olive oil, and coconut oil. Examples of mineral oils are Light and Heavy paraffin.

3.5.1. Amla

Amla is obtained from the plant *Emblica officinalis*, Family Euphorbiaceae. Amla is rich in Vitamin C, tannins and minerals such as phosphorus, iron and calcium which provides nutrition to hair and also causes darkening of hair. Hibiscus consists of calcium, phosphorus, iron, Vitamin B1, Riboflavin, Niacin and Vitamin C, used to stimulate thicker hair growth and prevents premature graying of hair.

3.5.2. Coconut Oil

This oil obtained from the dried solid part of the endospasm of the coconut- *Cocos nucifera*, family Palmae. It is white or pearl- white unctuous mass in winter and colourless in summer.

3.5.3. Almond Oil

The almond oil is obtained from *Prunus dulcis*. It proves to be very nourishing, and softens and strengthens the hair. The almond oil also proves to be a very good cleansing agent.

3.5.4. *Arachis Oil*

This is also a fixed oil obtained from the seeds of the *Arachis hypogea* belonging to the family Leguminosae. The oil is pale yellow in colour, with a faint nutty odour. It is used in the preparation of hair oils and „Brilliantines“.

3.5.5. *Castor Oil*

This oil is obtained from the seeds of *Ricinus communis* belonging to the family, Euphorbiaceae. It is used as an emollient, in the preparation of lipstick, hair oils, creams and lotions.

3.5.6. *Eucalyptus Oil*

Eucalyptus oil is the generic name for distilled oil from the leaf of Eucalyptus, a genus of the Plant family Myrtaceae. Eucalyptus oil can help to get rid of dandruff, which in turn can help to promote healthy growth of hair.

3.5.7. *Rose Oil*

The well-known essential oil is probably rose oil, produced from the petals of *Rosa damascena* and *Rosa centifolia*, family Rosaceae. Steam-distilled rose oil is known as "rose otto" while the solvent extracted product is known as "rose absolute". It is used more commonly in perfumery. The key flavour compounds that contribute to the distinctive scent of rose oil are beta-damascenone, beta-damascone, beta-ionone, and oxide.

3.5.8. *Citronella Oil*

It is one of the essential oils obtained from the leaves and stems of different species of Cymbopogon family Cardiopteridaceae. The crisp, rich citrus or lemon like aroma of this oil drives away body odour and is used deodorants and body sprays, although in very small quantities, since in heavy doses it may give skin irritations. It can also be mixed with the bathing water to have a refreshing, body odour ending bath.

3.5.9. *Olive Oil*

This oil is a fixed oil extracted from the fruits of *Olea europaea*, family oleaceae. The major constituents are triolein, tripalmitin, trilinolein, tristearate, monosterate, triarachidin, squalene, β - sitosterol and tocopherol. It is used as skin and hair conditioner in cosmetics like lotions, shampoos etc. It is a potent fatty acid penetration enhancer.

3.5.10. *Sunflower Oil*

It is the non-volatile oil extracted from sunflower seeds obtained from *Helianthus annuus*, family Asteraceae. Sunflower oil contains lecithin, tocopherols, carotenoids and waxes. It has smoothing properties and is considered non-comedogenic. A simple yet cost-effective oil, well tried and tested for generations in a wide variety of emulsions formulated for face and body Products.

3.5.11. *Light Liquid Paraffin*

It consists of a mixture of hydrocarbons in the form of an oily liquid which has no colour or odour. It is used in the manufacture of bath oils, hair oils, lotions and creams, due to its better spreadibility.

3.5.12. *Heavy Liquid Paraffin*

It is composed of a mixture of hydrocarbons in the form of a colourless and odourless oily liquid. Due to its soothing effect on the skin, it is used in the creams, lotions and in hair oil.

3.5.13. *Waxes*

They are the esters resulting from the condensation of high molecular straight chain fatty acids with high molecular straight chain mono- hydric alcohol of the methanol series. They are used in cosmetics as a base, along with oils and fats. Examples: lipstick.

3.5.14. *Beeswax*

It is a purified wax separated from the honeycomb of bees, *Apis mellifera* which belong to the family, Apidae. Beeswax is composed of 70% ester lyrical palmitate. Beeswax helps in the incorporation of water to form an emulsion.

3.6. Antioxidants

Antioxidants either synthetic or natural can be effective in preventing free radical formation by scavenging them or promoting their decomposition and suppressing such disorders. Currently, there is a growing interest toward natural antioxidants of herbal resources.

3.6.1. Tamarind

Tamarind or *Tamarindus indica* L. of the Fabaceae, subfamily Caesalpinioideae consists of amino acids, fatty acids and minerals of tamarind plant parts. The most distinguished characteristic of tamarind is its sweet acidic taste due to tartaric acid. Besides being a rich source of sugars, tamarind fruit is also an excellent source of Vitamin B and contain minerals, exhibit high antioxidant capacity that appear to be associated with a high phenolic content, and thus can be an important food source.

3.6.2. Vitamin C

Vitamin C is necessary for the hydroxylation of proline, procollagen, and lysine. Vitamin C improves the changes caused by photo damage. Vitamin C has been used effectively to stimulate collagen repair, thus removing some of the effects of photo-aging on skin.

3.6.3. Vitamin E

(Alpha-tocopherol) is the major lipophilic antioxidant in plasma membranes and tissues. The term Vitamin E collectively refers to 30 naturally occurring molecules (4 tocopherols and 4 tocotrienols), all of which exhibit Vitamin E activity.

Its major role is generally considered to be the arrest of chain propagation and lipid peroxidation by scavenging lipid peroxy radicals, hence protecting the cell membrane from destruction.

Table 1 List of plant used for skin care

Sr.No.	Common name	Plant name / Family	Chemical constituent	Uses
1	Mamidi	<i>Mangifera ndica</i> Anacardiaceae	Mangiferin, isomangiferin, tannins, gallic acid, rotocatechic acid, catechin, mangiferin, alanine, glycine, γ -aminobutyric acid, kinic acid, shikimic acid.	Plant extract possesses anti-oxidant properties
2	Amla	<i>Phyllanthus emblica</i> Euphorbiaceae	Ellagitannins, emblicanin A, emblicanin B, punigluconin, pedunculagin, punicafolin, phyllanemblin A, phyllanemblin, ellagic acid, gallic acid	Fruit extract possesses anti-oxidant properties
3	Aswagandha	<i>Withania somnifera</i> Solanaceae	Withanolides, (-)- sominolide, mindabeolide-1, withanolide-R, flabelline, corydaldine, Oxyhydrastine, fumaritine, protopine, fumariline, juziphine, tetrahydropalmatine, N-feruloyltyramine, (+)- bicucline, (-) corlumine	Whole plant extract is used in skin cleansing formulations and possesses antioxidant properties
4	Nelavemu	<i>Andrographis paniculata</i> Gentianaceae	Triterpene swertanone, seco-hopene lactones, swertiamarin, swertia lactone – C, swertain – D	Bark powder extract controls skin affections; possesses antioxidant properties
5	Bavanchalu	<i>Psoralea corylifolia</i> Fabaceae	Corylinin, isopsoralen, psoralen, sophoracoumestan A, neobavaisoflavone, daidzin, uracil	Seeds extract possesses potential to control skin diseases 70.

6	Gaddi Chamanthi	<i>Matricaria chamomilla</i> Asteraceae	Herniarin, umbelliferone, chlorogenic acid, caffeic acid, apigenin, luteolin, luteolin-7-O-glucoside, quercetin, rutin, naringenin	Leaves extract is applied in anti-acne cream
7	Badham	<i>Prunus amygdalus</i> Rosaceae	3-O-methylquercetin 3-O-β-d-glucopyranoside, naringenin 7-O-β-d-glucopyranoside, catechin, protocatechuic acid, vanillic acid, p-hydroxybenzoic acid	Kernel extract is used in sun creams and other formulations to make the skin fair and beautification creams
8	Sogasula Chettu	<i>Lagerstroemia speciosa</i> Lythraceae	Banaba Leaf Botanical Extract is rich in calcium, magnesium and zinc	it is reputed to improve the suppleness of the skin and to reduce the signs of aging. It is a great addition in formulations of gels and lotions
9	Seema Daanimma	<i>Cydonia oblonga</i> Rosaceae	3-O-caffeoylquinic, vicenin-2, stellarin-2, schaftoside, chrysoeriol, citric, ascorbic, malic, quinic, shikimic and fumaric acids	Seed extract is used for beautification and protection of skin
10	Adivimalle	<i>Jasminum grandiflorum</i> Oleaceae	Secoiridoid glucosides, 2''-epifraxamoside, demethyl-2''-epifraxamoside, secoiridoid, jasminaldehyde	flowers is used in skin creams and lotions to control skin diseases. Essential oil extracted from plant is used in creams for the protection from sunburn
11	Chandanam	<i>Santalum album</i> Santalaceae	Alpha- and beta-santalol, cedrol, esters, aldehydes, phytosterols, squalene	Paste of hardwood is used in face pack; essential oil used in preparation of creams, ointments and lotions for skin beautification and protection from sunburn; possesses anti-oxidant properties
12	Chia Ginjalu	<i>Salvia hispanica</i> Lamiaceae	It is an excellent source of Omega 3 and also contains the perfect 3-to-1 ratio of Omega-3 to Omega-6 essential fatty acids	It helps to minimize the look of fine lines, wrinkles and enlarged pores, while making the skin look radiant
13	Reddy vari nanabalu	<i>Euphorbia thymifolia</i> Euphorbiaceae	Afzelin, quercitrin, myricitrin, rutin, quercetin, euphorbin-A, euphorbin-B, euphorbin-C, euphorbin-D	Plant extract is useful to control ringworm and skin infections.
14	Keera Dosa	<i>Cucumis sativus</i> Cucurbitaceae	It is a rich source of vitamins and minerals essential for a healthy looking skin	Calm and cooling, Cucumber Peel extract makes a wonderful addition to skin care products for its toning and skin tightening properties.
15	Garlic	<i>Allium sativum</i> Alliaceae	Llicin, phytoncidea, alliin, ajoene, isoalliin, methiin, alliin.	Garlic oil is useful to control sores, pimples and

				acne. It may be used in skin lotions and creams.
16	Manchi Kalabandha	<i>Aloe vera</i> Liliaceae	Hydroxyanthroquinone – barbaloin, γ -hydroxyaloin isomers, aloe emodin, chrysofhanol, loins, Barbaloin, Iso-barbaloin, Aloin	Leaves juice, its pulp or extracted material is applied on skin for smoothness, healing controlling skin burn, sun burn and injury Used in moisturizers, lotions, creams, hair tonic, shaving creams, etc
17	Grape Seed	Genus Vitis Vitaceae	reported that the major constituents in <i>V. vinifera</i> (Tintal del pais) grape seeds were (+)-catechin (11%) followed by (-)-epicatechin (10%), (-)-epicatechin-3-O-gallate (9%), epicatechin 3-O-gallate-(4 β →8)-catechin (B1-3-O-gallate) (7%), and epicatechin-(4 β →8)-epicatechin (dimer B2) (6%).	Grape Seed extract contain compounds that may be beneficial to protect the skin's elasticity so the texture looks soft and smooth. Grape Seed aids in maintaining skin's supple look and is used in many facial creams
18	Pasupu	<i>Curcuma longa</i> Zingiberaceae	Curcumin, turmerone and zingiberene; cineole and p- tolylmehyl carbinol α -phellantrene, terpinolene, 1,8-cincole, undecanol and p-cymene	Rhizome powder possesses anti-inflammatory and antioxidant properties; used in facial, face creams and ointments
19	Thummi	<i>Leucas aspera</i> Lamiaceae	Triterpenoids, oleanolic acid, ursolic acid, b- sitosterol, nicotine, sterols, glucoside, diterpenes	Juice of leaves is applied to control scabies, skin psoriasis, chronic skin, skin eruption and eczema
20	Kakara Kaya	<i>Momordica charantia</i> Cucurbitaceae	Momordicin I, momordicin II, cucurbitacin B, momordin, charantin, charantosides, momordicinin, momordicilin, momordenol, momordol momorcharin, momordin	Plant extract possesses antioxidant properties
21	Dosa Kaya	<i>Cucumis sativus</i> Cucurbitaceae	24-ethylcholesta-7, 25- trienol, 25-dienol, avenasterol, spinasterol, karounidiol and isokarounidiol	Water extract of fruits and seeds protect skin from sunburn
22	Rose Flower	<i>Rosa damascena</i> Rosaceae	Citronellol, Citronellyl acetate, Citronellyl formate, eugenol, Farnesol, Geraniol, Nerol, Geranyl acetate, Geranyl formate, Linalool, Methyl isoeugenol, Rose oxide, Alpha- Terpeneol, 4- Terpinenol, Methyl heptenone, Humulene, Hexanol, Guaiene, Eudesmol, Guaiene, Humulene.	Essential oil extracted from flowers is used in skin creams, lotions and ointment for beautification, smoothness and protection from sunburns
23	Lavender	<i>Lavandula vera</i> Lamiaceae	Resinous matter, tannic acid	Essential oil is used in skin anti-acne

24	Vepa	<i>Azadirachta indica</i> Meliaceae	Di-n-propyl disulfide, cinnamoylmelianolone, Isonimolicinolide, nimolicinoic acid	1-	Bark, seed, fruits and leaves contain diterpenes and highly oxidized tetraner warmer parts triterpenoids including azadirachtin; antiseptic agent; useful in curing wounds, skin diseases, leprosy, ulcers etc
25	Nimma	<i>Citrus limon</i> Rutaceae	Limonene, β -myrcene and decanal		Potential source of vitamin C; oil is used in various preparation to reduce skin itching and skin nourishment, pulp left after extraction of juice is useful as a facial ingredients
26	Kobbari Kaya	<i>Cocos nucifera</i> Arecaceae	Sugars, vitamins, minerals, amino acids and phytohormones		Coconut oil is useful for skin itching and rashes
27	Papaya	<i>Carica papaya</i> Caricaceae	Papain, chymopapain, carpain, carpasemine, benzyl isothiocyanate		Milky juice of unripe fruit is a good ingredient for facial and face cream; fruit pulps make skin soft and remove blemishes
28	Tagirisa	<i>Cassia tora</i> Caesalpiniaceae	Anthraquinone, naphthopyrone glucoside		Leaves and seed extract are useful for skin infection, ringworm, eruption, etc
29	Tulsi	<i>Ocimum sanctum</i> Lamiaceae	Eugenol, epi- α -cadinol, α - bergamotene, γ -cadinene		Leaves extract is useful to control skin infection and rejuvenation
30	Nuvvulu	<i>Sesamum indicum</i> Pedaliaceae	Latifonin, momor- cerebroside, soya- cerebroside II, beta- sitosterol, daucosterol, D- galacititol		Seed extract is useful for skin protection and rejuvenation

Table 2 List of plant used for hair care

Sr.no.	Common name	Botanical name / Family	Chemical constituent	Uses
1	Manchi Kalabandha	<i>Aloe vera</i> Liliaceae	Aloe contains salicylic acid	Enzymes in <i>Aloe vera</i> dissolve dead skin cells and excess sebum which can block hair follicles
2	Usiri	<i>Phyllanthus emblica</i> Euphorbiaceae	Gallic acid, ellagic acid, 1- O-galloyl- beta-D-glucose, 3,6-di-O-galloyl-D- glucose, chebulinic acid, quercetin, chebulagic acid, corilagin, 3- ethylgallic acid (3-ethoxy-4,5-dihydroxy-benzoic acid, isostrictiniin, 1,6-di-O-	Fruit extract is used in oils for promotion of hair growth

			galloyl-beta-D-glucose	
3	Wall Nut	<i>Juglans regia</i> Juglandaceae	Oleic acid, macadamia, linoleic acid, linolenic acid, methionine, cysteine, tryptophan, threonine	Leaves and hull of fruits is used for hair dyeing
4	Arnica Chemanthi	<i>Arnica montana</i> Asteraceae	Helenalin, 11 α , 13- dihydrohelenalin	Flowers extract is used in hair oil as a tonic material. It stimulates the hair follicles
5	Tulasi akulu	<i>Ocimum basilicum</i> Lamiaceae	Basil is rich in magnesium, an often overlooked mineral that is essential for hundreds of chemical processes within the human body	When applied to hair and scalp as an herbal rinse, basil acts as an anti-inflammatory, strengthens hair against breakage, and improves circulation in the hair follicles which helps to stimulate growth
6	Vaamu	<i>Thymus serpyllum</i> Lamiaceae	Thymol and carvacrol, linalool, p- cymene, γ - terpinene, borneol, terpinen- 4-ol and 1, 8- cineole	Whole herb extract is useful for preparing hair tonics
7	Gunta Galagara	<i>Eclipta alba</i> Asteraceae	Wedelolactone[1.6%], Desmethylwedelolactone, Desmethylwedelolactone-7-glucoside, stigmasterol.	Ayurvedic herb considered to be one of the most helpful natural means for encouraging hair growth
8	Atti or Medi	<i>Ficus racemosa</i> Moraceae	B-sitosterol, p-amyrin, lupiol acetate	Aerial root powder is mixed with coconut oil for massage to check falling hairs
9	Tanikaya	<i>Terminalia bellirica</i> Combretaceae	Tryptophan, threonine, phenylalanine, tyrosine, termilignan, thannilignan, together with 7-hydroxy- 3,,4,- (methylenedioxy) flavan, anolignan B	Seed extract and oil is good for hair dyeing preparation
10	Karakkaya	<i>Terminalia chebula</i> Combretaceae	Arjunolic acid; terminolic acid; chebuloside I, II; triterpenoids; triterpenoid glycosides	Seed extract is used in hair care formulations
11	Saraswathi aaku	<i>Centella asiatica</i> Apiaceae	Centella contains pentacyclic triterpenoids, including asiaticoside, brahmoside, asiatic acid, and brahmic acid (madecassic acid). Other constituents include centellose, centelloside, and madecassoside.	Mix brahmi extract with olive oil and massage into the scalp to improve circulation and promote stronger hair growth
12	Gorintaku	<i>Lawsonia inermis</i> Lythraceae	Lalioside, lawsoniaside, uteolin-7-O- β - d-glucopyranoside, lawsonicin, vomifoliol	Leaves paste is used for hair dyeing and nourishment
13	Aavalu	<i>Brassica nigra</i> . Brassicaceae	Quercetin, predominate, kaempferol, luteolin, apigenin indole-3-carbinol	Seed oil is used as hair oil and useful for hair nourishment
14	Pudhina Aaku	<i>Mentha piperita</i>	menthol (47.0%) and its derivatives: menthone (23.1%), menthyl acetate	peppermint oil as a healing scalp treatment

		Lamiaceae	(5.2%), menthofurane (3.7%) and neomenthol (3.6%).	
15	Kunkudu kayalu	<i>Sapindus mukorossi</i> Sapindaceae	Saponins, sugars and mucilages	Extract of fruit coat works as natural shampoo: used in herbal shampoo as hair cleanser
16	Safflower	<i>Carthamus tinctorius</i> Asteracea	Benzyl-O- β -D- glucopyranoside, syringarenol, lirioretinol- A, β - sitosterol, stigmasterol	Alcoholic extract is used in hair tonics
17	Nuvvulu	<i>Sesamum indicum</i> Pedaliaceae	Latifonin, momor- cerebroside, soya- cerebroside II, benzyl alcohol-O-(2'-O- beta-D- xylopyranosyl, 3'-O-beta- D- glucopyranoside)-beta- D- glucopyranoside, beta- sitosterol, daucosterol, D- galactitol	Seed oil is one of the major sources of hair oils, which is used as such or a base for preparing specific hair oils
18	Adiyalu	<i>Nasturtium officinale</i> Brassicaceae	watercress is richly packed with Vitamins and minerals	It has proven benefits for skin health and stronger hair growth
19	Kobbari kaya	<i>Cocos nucifera</i> Arecaceae	Minerals, Vitamins, dietary fibres, sugars, organic acids, fatty acid and amino acid, α -Tocopherol, citric, malic acids	Kernel oil is well-established hair oil, which is used as such or as a basic raw material for preparing hair oils and tonics
20	Ginger	<i>Zingiber officinale</i> Zingiberaceae	In fresh ginger, gingerols are the major polyphenols, such as 6-gingerol, 8-gingerol, and 10-gingerol.	Ginger root oil increases circulation in hair follicles, promoting stronger and faster growth

4. Conclusion

In India more than 70 % of the inhabitants use herbal cosmetics for their health care. A present time herbal cosmetic has been marked up in personal care system and there is a great requirement for the herbal cosmetics in daily life. Healthy teeth, shiny hair and glowing skin are significant for the good looking of the human body. Herbal cosmetics are prepared, using cosmetic ingredients to form the base in which one and another herbal ingredient are used to treat different skin complaints and for the enhancement. The chemical 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 Cosmeceuticals are agents that lie elsewhere between pure cosmetics (lipstick and rouge) and pure drug (antibiotics, corticosteroids) methods. Corrective formulation based natural beauty preparation, which has cosmetic value or safe additive properties in replacing synthetic ingredient. There is need to do more R and D in the field of herbal cosmetic to prove effectiveness and established herbal cosmetic in safety profile. It is needed to conduct adequate safety testing as per existing regulatory rule and present requirement. The ability to desire the right cosmetics for you depends on accurate ingredient knowledge, body nature assessment, personal needs, customer perception about product, benchmark product. Quality control for ability and safety of herbal cosmetic products is of predominant importance. So quality control test must be carried out for herbal cosmetics. It is assumed to be safe for longer periods of time.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of Interest.

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