HERBAL COSMETICS: REVIEW ARTICLE

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Abstract

Now days a new hot topic in the cosmetic industry is 'Cosmeceuticals', which is the fastest growing segment of the natural personal care industry. Cosmeceuticals are the future generation of skin care. They are the advances made within the world of dermatological products and the new backbone in skincare. All cosmeceuticals claim to contain functional ingredients with either therapeutic, disease-fighting or healing properties. The term Cosmeceutical was coined by Raymond Reed but the concept was further popularized by Dr. Albert Kligman in the late 1970’s. Herbs and spices have been used in maintaining and enhancing human beauty. Indian women have long used herbs such as Sandalwood and Turmeric for skin care, Henna to color the hair, palms and soles; and natural oils to perfume their bodies. Not too long ago, elaborate herbal beauty treatments were carried out in the royal palaces of India to heighten sensual appeal and maintain general hygiene. The herbal cosmetics manufactured and used commonly for daily purpose include herbal face wash, herbal conditioner, herbal soap, herbal shampoo etc.

Cosmeceuticals have medicinal benefits which affect the biological functioning of skin depending upon type of functional ingredients they contain. These are cosmetic products that are not just used for beautification but for different skin ailments. These products improve the functioning/texture of the skin by boosting collagen growth by eradicating harmful effects of free radicals, maintains keratin structure in good condition and making the skin healthier. There are numerous herbs available naturally having different uses in cosmetic preparations for skincare, hair care and as antioxidants.
Introduction

The word cosmetic was derived from the Greek word “kosm tikos” meaning having the power, arrange, skill in decorating [1]. The origin of cosmetics forms a continuous narrative throughout the history of man as they developed. The origin of cosmetics were associated with hunting, fighting, religion and superstition and later associated with medicine [2]. The knowledge finally dissociated from medicine and finally to pharmacy. The man from ancient time had the magic tip towards impressing others with their looks ; at the time there were no fairness creams or any cosmetics surgeries to modify the appearance. 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 there of for cleansing, beautifying, promoting attractiveness or altering the appearance. The cosmetic does not come under the preview of drug license [3]. The herbal cosmetics are the preparations containing phytochemical from a variety of botanical sources, which influences the functions of skin and provide nutrients necessary for the healthy skin or hair. The natural herbs and their products when used for their aromatic value in cosmetic preparation are termed as herbal cosmetics [3-5].

Cosmeceuticals are future generation of skin care. They are the advances made within the world of dermatological products and the new backbone in skincare. Cosmeceutical are typically cosmetic-pharmaceutical hybrids intended to enhance the health and beauty of skin. Some cosmeceuticals are naturally-derived while others are synthetic, but all contain functional ingredients with either therapeutic, disease-fighting or healing properties. Raymond Reed, Founder of U.S. Society of cosmetic chemist, created the concept of “cosmeceutical” was popularized by American dermatologist. Albert Kligman in the late 1970’s. The “Ebers” a medical papyrus wrote in 1600 BC, made frequent to several cosmeceutical-type products. A favorite formulation was using honey and milk that claimed to help cure skin diseases. For many medieval Arab physicians and their European counterparts, there were no distinctions among cosmetics, fragrance and herbal medicines. Their research and development work covered all these disciplines simultaneously. Separation of the cosmetic and toiletries, industry from medicines, and pharmacy was 19th century. This phenomenon occurred when the modern pharmaceutical industry was first developed and the first government statue regulation the sale of drugs was drafted. The concept of beautifying is not restricted to women alone, even men have become aware
about their look. Now day’s advertisements of many anti-wrinkle and fairness cream are aimed at men. Key cosmeceuticals used by men include hair growth products, anti-aging, antiperspirant, athlete’s foot and astringents. Cosmeceutical most commonly used by women include anti-wrinkles, anti-cellulite, hair removal, tanning skin whitening, antioxidants, and cell recovery products [6].

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”.

Beginning 1990’s cosmetic manufacturer adapted a term 'cosmeceuticals' to describe the OTC skin care products that claims therapeutic benefit by addition of plant based active ingredient such as alpha-hydroxy acid, retinoic acid, ascorbic acid and coenzyme Q10. These active ingredients serves many purposes viz. increase in skin elasticity, delay in skin aging by reducing the wrinkles, protection against UV radiation by antioxidant property and to check degradation of collagen respectively. 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 skin and hair beauty of individuals depends on the health, habits, routine job, climatic conditions and maintenance. The skin due to excessive exposure to heat will dehydrate during summer and causes wrinkle, freckles, blemishes, pigmentation and sunburns. The extreme winter cause damages to the skin in the form of cracks, cuts, maceration and infections. The skin diseases are common among all age groups and can be due to exposure towards microbes, chemical agents, biological toxin present in the environment, and also to some extend due to malnutrition.

The requirements for the basic skin care:

**Cleansing agent:** which remove the dust, dead cells and dirt that chokes the pores on the skin. Some of the common cleansers include vegetable oils like coconut, sesame and palm oil.

**Toners:** The toners help to tighten the skin and keep it from being exposed to many of the toxins that are floating in the air or other environmental polluters. Some of the herbs used as toners are witch hazel, geranium, sage, lemon, ivy burdock and essential oils.
Moisturizing: The moisturizing helps the skin to become soft and supple. Moisturizing shows a healthy glow and are less prone to aging 12. Some of the herbal moisturizers include vegetable glycerin, sorbitol, rose water, jojoba oil, aloe vera and iris 13.

Herbal Cosmetics Can Be Grouped Into Following Major Categories

- Cosmetics for enhancing the appearance of facial skin.
- Cosmetics for hair growth and care
- Cosmetics for skin care, especially in teenagers (acne, pimples and sustaining)
- Shampoos, soaps, powders and perfumery, etc.
- Miscellaneous products.

Indian Extracts for Herbal Cosmetics

Herbs play a significant role, especially in modern times, when the damaging effects of food processing and over-medication have assumed alarming proportions 16. They are now being increasingly cosmetics, foods and teas, as well as alternative medicines.

**Oat (Avena sativa):**

It is a species of cereal grain grown for its seed, which is known by the same name (usually in the plural, unlike other grains) 17. Oats are not only consumed for nutritional purposes, but are also recognized as possessing healing and soothing properties. Oat oil is rich in antioxidants, essential fatty acids and natural emollients 18. Oat oil is used in many lotions, creams, facial oils, salves and balms since its properties add unique benefits.

**Tulsi (Ocimum sanctum):** Holy basil, called Tulsi in India, is ubiquitous in Hindu tradition. Perhaps its role as a healing herb was instrumental in its "sacred" implication 20.

**Ghritkumar (Aloe vera):**

It 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 21. 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.

**Multani Mitts (Fullers Earth):** It is Mother Nature's own baby powder 22. 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 23.
Marigold (Calendula officinalis):
Calendula officinalis is a plant known as pot marigold. It should not be confused with other types of plants more commonly known as marigold, such as those in the genus Tagetes 24. A number of ingredients used in cosmetics and personal care products are made from Calendula officinalis, including an extract of the whole plant (Calendula officinalis Extract) the flowers, flower extract and flower oil (Calendula officinalis Flower Extract, Calendula officinalis Flower Oil) and the seed oil (Calendula officinalis Seed Oil) 25.

Chamomile (Matricaria chamomilla):
Matricaria chamomilla, known as scented mayweed or German chamomile (also spelled camomile), is an annual plant of the composite family Asteraceae 26. Chamomile is also used cosmetically, primarily to make a rinse for blonde hair and as a yellow dye for fabrics 27.

Wild Cherry Bark (Prunus serotina Bark):
Wild cherry bark is the bark of Prunus serotina28. Wild Cherry Bark has properties that makes the hair smooth, silky, and adds body to the hair.

Haldi (Turmeric):
It was used as a face pack along with usheer (vertiver) and also as an antiseptic 29.

Chandan and Vertiver (Usheer):
It was used as scrubs and face packs that were applied on face and whole body to remove dead cells, regenerate growth of new cells and give a young look 30.

The Benefits of Herbs May include the Following:
Enhance physical and mental well-being  Strengthen the immune system  Detoxification  Aid in sleeping, digestion  Increase stamina and reduce fatigue etc. Advantages of Herbal Medicine  Herbal medicine have long history of use and better patient tolerance as well as acceptance. Medicinal plants have a renewable source, which is our only hope for sustainable supplies of cheaper medicines for the world growing population. Availability of medicinal plants is not a problem especially in developing countries like India having rich agro-climatic, cultural and ethnic biodiversity. The cultivation and processing of medicinal herbs and herbal products is environmental friendly. Prolong and apparently uneventful use of herbal medicines may offer testimony of their safety and efficacy.

Herbs Used in Cosmetics/Cosmeceuticals:
There are numerous herbs available naturally having different uses in cosmetic preparations for skincare, hair care and as antioxidants, fragrant etc. Some of the important examples are as follows:
Skincare 

**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.

**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.

**Jojoba oil:** It is a mixture of long chain, linear liquid wax esters extracted from the seeds of the desert shrub simmondsia chinenesis, family simmondsiaceae. Jojoba oil is easily refined to remove any odor, color it is oxidatively stable, and is often used in cosmetics as a moisturizer and as a carrier oil for exotic fragrances.

**Olive oil:** This oil is a fixed oil extracted from the fruits of olea europaea, family oleaceae. It is used as skin and hair conditioner in cosmetics like lotions, shampoos etc. It is a potent fatty acid penetration enhancer.

**Antiaging**

**Rhodiola rosea:** It is commonly known as golden root, rosroot, 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.

**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.

**Gingko:** 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.

**Neem:** Neem or Margosa is a botanical relative of mahogany. It belongs to the family Meliaceae. The Latinized name of Neem- Azadirachta indica-is derived from the Persian. Azad=Free, dirakht=Tree, i-Hind=of Indian Origin. The common
treatment for the dandruff is Neem as it produces antifungal, antibacterial, pain-relieving, and anti-inflammatory compounds that would treat dandruff.

Dandruff treatment:
Ayurveda has numerous natural medications wherein the most common herbs include Neem, Kapoor (naphthalene), and Henna, Hrida, Behada, and Amalaki, Magic nut, Bringaraj, Rosary Pea, Sweet Flag, Cashmere tree and Mandor.

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. 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.

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.

Classification of Cosmeceuticals:
The term Cosmeceuticals can be used with different terms. For all the terms the definition remains the same i.e. Cosmeceuticals formulations which are neither pure cosmetics, like lipsticks, nor pure drug, like corticosteroids. It is a hybrid category of products lying on the spectrum between drugs and cosmetics. The various terms by which Cosmeceuticals can be substituted are active cosmetics, nutricosmetics, performance cosmetics, functional cosmetics, and dermaceuticals. Cosmeceuticals basically can be classified into following categories:

1) Skin cosmeceutical product- Antiaging creams, Moisturizers, Facial products and Lotions.

2) Hair cosmeceutical product- Gel and creams, Hair colorants and Dyes, Shampoos, Growth Stimulators and Conditioners.

3) Others- Lipstick, Nail polish, Toothpaste and Powders.

Formulation and evaluation: In formulating cosmetic preparation non herbal ingredients are commonly used, but now herbal ingredients are gaining more acceptances among consumers. The usage of herbal ingredients should be based on experience, so that the properties of the formulation are not altered. The formulation of herbal cosmetics follows the same procedures as that of the cosmetic preparation prepared with synthetic origin. The formulations are based on the
selection of proper emulsifying agents, composition of the appropriate ingredients and modified methodology to get the required product [37-40]. The herbal cosmetics retain the bioactivity of botanicals during excessive processing and should ascertain their availability after application on the skin. The manufacturers should ensure the quality of the raw materials and the finished products by quality control testing. The other parameters tested include organoleptic characteristics, pH, viscosity, refrigeration and stability towards light. The major drawback with herbal ingredient is the attack of microbes rendering them unfit for human use [41-43]. So care must be taken to prevent the bacterial attack completely. The evaluation of herbal cosmetics is very essential and there is no hard and fast code of practice, which can be laid down for all products or even product types. The evaluations of cosmetics are performed to ensure the efficiency, storage, processing operation and stability requirements. The evaluation of herbal cosmetics is essentially the same as that for the other common cosmetics products which are available in market. The ingredients used in cosmetics should be of the highest quality so as to minimize the irritancy and sensitivity reaction. The physical evaluation parameters used for herbal cosmetics include the colour, odour, form of physical state, pH, and net content. The other evaluations done for herbal cosmetics are sensitivity test, irritation test and grittiness. The irritancy and sensitivity test can be performed by either diagnostic testing or by the prophetic or predictive testing [44-51].

The evaluations based on analytical methods are used to support the commercial development and application of new ingredients to ensure that specifications are met to confirm the quality of manufactured products and to satisfy that the process are operating correctly. The analytical methods are regularly employed by enforcement and regulatory authorities to ensure that the products confirm to legal standards and are safe and accurately described. The analytical chemist continues to have a major role in selecting the most appropriate method, managing the data, interpreting the results. His skin evaluation can be performed visually or by super facial sampling of the skin with image analysis of the cells. The free radical scavenger properties in cosmetics which can counteract the effect of pollution and UV light on skin can be evaluated by fluoroscan II system to determine the concentration of the cutaneous peroxides. The free radical scavenging properties can also be evaluated by inhibition of UVB induced skin erythema by skin reflectance spectrophotometry [51-52]. The skin tanning agents used for producing a healthy skin without risking the acute and chronic ill effects of prolonged UV exposure can be evaluated by inspection or instrumentally using Minolta Chromameter or Dia- stron Erythema/Melanin Meter [49]. The evaluation of hair care products is done by assessing nine
basic cosmetic parameters related to physical or mechanical properties of the hair. The parameters include comb-out on wet hair, comb-out on dry hair, shine, silkiness, absence of static electricity, individualization, bounce, spring back and body. The hair greasiness evaluation can be quantitatively analyzed by means of sensory assessment. The parameters like gloss and individualization are measured by instrumental method utilizing light reflection [53-54]. The hair strength can be evaluated by measuring the force required to stretch and break individual hair fibres by Instron Tester, Dia-stron Miniature Tensile Tester and Automatic Carousel arrangement. The hair fiber cross-sectional area which contributes the tensile strength can be measure by microscopy or by weighing standard lengths of hair fiber. The instrumental method for analyzing the cross-sectional area can be done by Dia-strom Fiber Dimensional Analysis System. The instrumental method of analysis of hair properties and their affect by hair-care products include curl retention, friction, resin adhesiveness and drying properties. The antidandruff evaluations are generally carried out during autumn and early spring. The heaviest load of dandruff is seen in the month of winter. The stability testing of cosmetic products during storage is done on the content of the formulated product and container in which the product is packed. The content can be subdivided to physical character like viscosity, texture, colour, odour, pH, and loss of volatile constituent, uptake of water, oxygen or carbon dioxide. The chemical characteristic can be further divided into degradation of active constituent, interaction between constituents and loss of constituent by sorption by container. In microbiological characteristics are divided into efficacy of antimicrobial preservative and microbial spoilage. The containers used for packing cosmetics are tested for leakage, corrosion and stress cracking. The mechanical properties of the skin include measurement of skin friction to evaluate the degree of smoothness or greasiness of the skin. The measurement of skin elasticity is to evaluate the suppleness or fairness of the skin and the point of indentation are used to measure the skin softness. The evaluations of antidandruff mainly focus on the antimicrobial activity, solubility in sebum, penetrability of the hair follicles and cytostatic effect [55].

**Cosmetic Vs Drug**

There are multiple slightly variable definitions of both ‘drugs’ and ‘cosmetics’, but some commonalities do exist explained in. The term cosmetic refers to a preparation designed to enhance the body superficially to hide a real comprehended deficiency or flaw, by direct application. This application is considered to be decorative, lacking in depth.
or significance, as opposed to a response to a medical requirement. Individual governments regulate the availability or drugs to the public.

1. Over-the-counter (OTC) medication is available from pharmacies.

2. Behind-the-counter medication (BTC) medication must be dispensed by pharmacist, but does not require the authority of a doctor, and finally

3. Prescription-only medicine (POM) can only be prescribed by a licensed medical professional.

There are also numerous bodies that regulate the drugs present in the market: a) The Medicines and Healthcare products Regulatory Agency (MHRA) - is a government agency responsible for ensuring that medicines and medical devices work and are acceptably safe. They are responsible for public information as well the investigation and handling of complaints and patient feedback. b) The National Biological Standards Board (NBSB) - is a non-departmental public body, established in 1975 by Act of Parliament. The board takes responsibility for safe-guarding and advancing public health by assuring the following.

Conclusion

Herbal cosmetics are prepared, using permissible cosmetic ingredients to form the base in which one or more herbal ingredients are used to treat different skin ailments and for the beautification. 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 somewhere between pure cosmetics (lipstick and rouge) and pure drug (antibiotics, corticosteroids) methods. The usage of cosmeceuticals has drastically hiked in recent years, which in turn has increased the spectrum of the physician to broaden their range of products to enhance the comeliness of the patients associated with dermal problems. However, at times, where generations are keenly worried for their beauty, lots of manufacturing companies are competing and working hard to provide convincing results to meet requirements of the patients. Claims of effectiveness lack convincing evidence, thus the industry is challenged to provide evidence on the effectiveness of these compounds. Cosmeceuticals like vitamins, sunscreens, hydroxyl acids & many more have proved their efficacy in treating skin diseases thus enhancing the skin texture. Clinical trials of cosmeceuticals are important to know the interaction between skin and cosmeceuticals which could even be influenced by environmental fact. The global trend in the cosmetic industry towards developing ‘medicinally’ active cosmetics, and in the
pharmaceutical industry towards ‘cosmetically’ oriented medicinal products as. The global trend in the cosmetic industry towards developing ‘medicinally’ active cosmetics, and in the pharmaceutical industry towards ‘cosmetically’ oriented medicinal products as. Also has a great future ahead as compared to the synthetic cosmetics. Proper regulation of these herbs and standardization will lead to tremendous and significant growth in herbal cosmetics field.

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