



(REVIEW ARTICLE)



## Herbs as cosmetics for natural care: A review

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### Abstract

Herbal plants have been used in medicines and cosmetics from centuries. Their potential to treat various skin diseases, to soothe and improve the skin appearance is well-known. The beginning of the 21st century has seen significant progress in the herbal industry. Herbal ingredients are preferred over chemical substances because of their easy availability and lesser side effects. Natural beauty is a boon and cosmetics help present and enhance the aesthetic and personality aspects of human beings. Cosmetics alone are not capable of taking care of skin and other body parts; it requires the association of active ingredients to check skin damage and ageing. Herbal cosmetics have gained great popularity among the population. Herbal cosmetics products claimed to have efficacy and intrinsic acceptability due to regular use in daily life and avoid the adverse effects that are commonly seen in synthetic products. Continuous use of synthetic compounds on the skin leads many adverse effects such as skin irritation, allergy, discoloration, rashes along with skin cancer. Whereas; the herbs used in preparation of these Skin cosmetics have multi-functionality like antioxidant, anti-inflammatory, antiseptic and antimicrobial. The purpose of this review article is to explore herbs for various skincare needs. There are many types of herbs present in nature. They gently improve and clarify skin gently in an extreme way.

**Keywords:** Herbal Cosmetics; Herbs; Herbal Extract Skin Cosmetics; Antioxidant; Anti-Inflammatory; Ant-Aging

### 1. Introduction

The word cosmetic was derived from the Greek word “kosmtikos” which means power, arrangement, skill in decorating [1]. The origins of cosmetics form a continuous narrative as they evolve throughout the history of man. The man in prehistoric times 3000BC used colors for decoration to attract the animals that he wanted to hunt as well as the man survived the enemy attack by painting his skin and the enemy (be it man or animal). The origins of cosmetics were linked to hunting, fighting, religion and superstition and later to medicine [2]. The use of natural herbs ingredients in personal and health care products has been brought to the fore for its enhanced experiences. Recent researchers have proven that herbs are more effective as well as mild and soothing. Powerful synthetic preparation and chemicals, although effective, are a toxic burden to the human body. Herbal Cosmetics, referred as Products formulated by various natural herbal ingredients are used in as base in preparation of effective herbal cosmetic. Herbs do not produce instant cures. They offer a way to put the body in proper tune with nature [3]. The demand of herbal medicines is increasing rapidly due to their skin compatibility and lack of side effects. The best thing about herbal cosmetics is that it is purely made by the herbs and shrubs and thus is side-effects free. The natural ingredients in the herbs have no side effects on the human body; instead provide the body with nutrients and other useful minerals [4].

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## 2. Methods

The literature was studied to get information about the important role of herbs play in skin care and its various complications. The search was done on Google scholar, MEDSCAPE, BMC, Science Direct, MEDLINE database, SCOPMED and other relevant databases, using keywords like herbs, skin, phytoconstituents, care *etc.*

### 2.1. Herbal Cosmetics

In a quest to find effective topical photo-protective agents, plant-derived products have been researched for their antioxidant activity, so the use of natural antioxidants in commercial skin care products is increasing. Today, we look at the chemical composition of herbal remedies to find out what it is chemically and pharmacologically that may be responsible for these effects.

Effective botanical antioxidant compounds are widely used in traditional medicine and include tocopherols, flavonoids, phenolic acids, nitrogen-containing compounds (indoles, alkaloids, amines, and amino acids), and monoterpenes. As the topical supplementation of antioxidants has been shown to affect antioxidant network in the skin, applying aromatherapy formulations that are rich in antioxidants offers interesting avenues for future research [5]. In most cases, these cosmetic applications are adequately supported by efficacy and safety data documented in scientific literature. Among the more popular functional natural ingredients, many antioxidants used in cosmetics are scientifically proven to provide additional benefits in supporting skin texture, appearance and tone. Whereas in traditional cultures, plant materials were crushed or dried and powdered form, their incorporation into existing cosmetic formulations presents unique challenges. Highly colored or gritty plant extracts need to be blended seamlessly into “milky” or clear creams, lotions and gels [6,7]. This is where a judicious blend of art and science comes in practice. Plant extracts are gaining popularity as ingredients in cosmetic formulations, primarily because of the poor image of animal derived extracts acquired during the past few years. Historically, plants were the main source of cosmetic ingredients until methods for synthesizing substance with similar properties were discovered. Even though natural molecules derived from plant extract are currently the constituents of many commercial cosmetic products and offer a particularly exciting avenue for further research. In the modern age color, odor, elegance and efficacy of herbal cosmetics are maintained in effective manner with following benefits [8,9].

### 2.2. 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 nutrients to the body and enhance health and provide satisfaction. Because they are free of synthetic chemicals and have relatively few side effects compared to synthetic cosmetics [10].

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

#### 2.2.1. 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 a herbal plant species belonging to Liliaceae family and is naturally and easily available [11]. An increase number of consumers concerned about ingredients such as synthetic chemicals, mineral oils, demand more natural products free of harmful chemicals and with an emphasis on the properties of botanicals [12].

#### 2.2.2. Safe to use

Compared to other beauty products, natural cosmetics are safe to use. They are hypo-allergenic and have been tested and proven by dermatologists to be safe to use anytime, anywhere. Since they are made from natural ingredients, people do not need to worry about skin rashes or itchy skin. For example; BHA (Butylated Hydroxyanisole) and BHT (Butylated Hydroxytoluene) are closely related synthetic antioxidants and are used as preservatives in lipsticks and moisturizers [13]. BHA and BHT can induce allergic reactions in the skin [14]. The international Agency for Research on Cancer classifies BHA as a possible human carcinogen [15]. Herbal cosmetics contain natural antioxidants like vitamin C [16].

### 2.2.3. Compatible 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 that are suitable regardless of your skin tone. Women with oily or sensitive skin can also use these and should never worry about their skin condition worsening. Coal tar-derived dyes are widely used in cosmetics, with coal tar being recognized as a human carcinogen and the main concern with individual coal tar being a color (whether produced from coal tar or synthetically) is that they can cause cancer [17]. But natural dyes derived from herbs are safer.

### 2.2.4. Wide selection to choose from

Natural cosmetics may still be a new type in the beauty industry, but they already offer a crazy variety of beauty products to choose from. One will find a variety of foundations, eye shadows, lipsticks, blushes, mascaras, concealers and much more that are all naturally formulated. Also, one will find locally made natural cosmetics or cosmetics made by renowned designers from all over the world. There exist a large variety of herbal extracts, to name a few *Andrographis Paniculata* (Kalmegh), *Asparagus Racemosus* (Shatawari), *Boswellia Serrata* (SalaiGuggal), Asphalt (Shilajit) etc [18].

### 2.2.5. Fits your budget

Natural cosmetics are not that expensive. In fact, some of these products are more affordable than synthetic products. They are offered at discounted prices and are sold at a cheap price during the sale. One just needs to do enough surveys to find 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 [19].

### 2.2.6. Not tested on animals

Some cosmetics are initially tested on animals to ensure they are safe and effective for humans. However, there is no need to test natural cosmetics on animals. These natural formulations are tested by experts in laboratories using state of the art equipment with no animals involved [10].

### 2.2.7. No side effects

Synthetic beauty products can irritate your skin and cause pimples. They can clog your pores and make your skin dry or oily. With natural cosmetics, one need not worry about these. The natural ingredients used are assured of no side effects; anyone 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 [20]. And are suspected of interfering with hormone function (endocrine disruption) [13].

## 2.3. Herbal Plants for Treatment of Various Ailments

### 2.3.1. Tulsi

The botanical name of Tulsi is *Ocimum tenuiflorum*, commonly known as holy basil, *tulsi* or *tulasi*, is an aromatic perennial plant in the family Lamiaceae and native to the Indian subcontinent and widespread as a cultivated plant throughout the Southeast Asian tropics. Tulsi has been used for thousands of years as a prime herbs in ayurvedic treatment for its diverse healing properties .it is mentioned by charaka in the charaka samhita , the central teaching of ayurvedic medicine. Tulsi is considered to be an adaptogen, balancing different processes in the body and helpful for adapting to stress. Marked by its strong aroma and astringent taste it is regarded in ayurveda as kind of "elixir" of life and believed to promote longevity. Tulsi extracts are used in ayurvedic remedies for common cold, headache, stomach, disorder, inflammation, heart disease, various forms of poisoning and malaria. Traditionally, Tulsi is taken in many forms as herbal tea dried powder, fresh leaf or mixed with ghee, essential oil extracted from kapoor. Tulsi is mostly used for medicinal purposes and in herbal cosmetics .widely used in skin preparation for its anti bacterial activity for centuries the dried leaves of Tulsi have been mixed with stored grains to repel insects

Recent studies suggest that Tulsi may be a COX-2 inhibitors, like many modern painkiller due to its significance amount of eugenol (1-hydroxy-2-methoxy -4-allyl benzene) . Studies have also shown Tulsi to effective for diabetes by reducing blood glucose levels the same study showed significant reduction in total cholesterol level with Tulsi. Another study showed that Tulsi has beneficial effects on blood glucose level are due to its antioxidant properties. Tulsi also showed some promise for protection from radiation poisoning and cataracts.

### 2.3.2. Turmeric

Turmeric (*Curcuma longa*) is a rhizomatous herbaceous perennial plant of the ginger family zingiberaceae which is native to tropical South Asia. Turmeric is currently used in the formulation of some sunscreen, turmeric paste is used by some Indian women to keep them free of superfluous hair, turmeric paste is applied to brides and grooms before marriage in some places of India. Bangladesh and Pakistan where it is believed turmeric give glow to skin and keep some harmful bacteria away from the body. The government of Thailand is funding a project to extract and isolate tetra-hydrocurcuminoids (THC) from turmeric THCs (not to be confused with tetra hydrocannabinol also known as THC are colorless compound that might have antioxidant and skin lightening properties and might be used to treat skin treatment making these compound useful in cosmetics formulations. They are used in anti-inflammatory wound healing, anticancer and antibacterial activity. Skin conditions such as acne, alopecia, atopic dermatitis, facial photoaging, pruritus and psoriasis. Antioxidants in turmeric protect the skin cells from free radical damage and quickly recover all kinds of wounds due to its antiseptic qualities [21,22,23].

### 2.3.3. Sandalwood

*Sanatlum album L.* is a species of woody flowering plant, the most well-known and commercially valued, of which the Indian sandalwood tree is a member of *S. album* trees or shrubs. Most are root parasites that synthesize their own food but tap roots of other species for water and inorganic nutrients. Several species especially *S. album* produce highly aromatic wood, which is used for fragrance and perfume and herbal medicine. It is also used as a flavoring agent in Ayurvedic medicine to manage the inflammatory reactions that initiate various skin disorders [24, 25]. In addition, it has been used as an astringent. It is used as face pack, mask etc.[26 - 29].

### 2.3.4. Henna

Henna or Hina (*Lawsonia inermis*, syn *L. Alba*) is a flowering plant the only species in the genus *Lawsonia inermis* of the family Lythraceae. It is native to tropical and subtropical regions of Africa, southern Asia, and northern Australia in semi-arid regions. The dye molecules, lawsone, are mainly concentrated in leaves and are in the highest level in petioles of leaf petioles. Products sold as black henna or neutral henna is not made from henna but may be obtained from indigo (in the plant *Indigofera tinctoria*) or *Cassia obovata* and may contain unlisted dyes and chemicals. Henna has been used for body art and hair coloring since the Bronze Age. Henna has recently had a renaissance in body art, as the cultivation, processing and use of areas of traditional henna improved the diaspora of people. Henna has many traditional and commercial uses the most common being as dye for hair skin and fin nail as dye and preservative for leather and cloth and as anti fungal henna flowers have been used to create perfume since ancient time and henna perfume is experiencing resurgence on internet. Henna was used as hair dye in India court records around 400CE, time during the Roman Empire and Spain during convenience it was listed in the medical text of the Ebers papyrus (16<sup>th</sup> BCE Egypt) and by IBN Qayyim al jawziyya (14<sup>th</sup> BCE (Syria and Egypt) as a medicinal herb [30].

### 2.3.5. Arnica Montana

*Arnica montana* (also known as leopard Bane, wolf Bane, mountain tobacco and mountain arnica) is a European flowering plants with large yellow capitula distribution and habitat. *Arnica montana* is sometime grown in herbs gardens and has long been used medicinally. it contains the toxin helenalin which can be poisonous if large amount of the plant are eaten contact with the plant can also cause skin irritation .the roots contain derivatives of thymol which are used as fungicide and preservative and may have some anti inflammation effects. When used topically in gel, arnica was found to have the same effect as the use of NSAIDs (ibuprofen) in treating the symptoms of hand osteoarthritis. A study found that the application of tropical arnica had no better effect than a placebo in treatment of skin bruises.

Arnica is currently used in liniment and ointment preparation used for strain sprains and bruises. Commercial arnica preparation is frequently used by professional athletes. The thymol derivatives concentrated in the plant roots have been clinically shown to be effective vasodilator of subcutaneous blood capillaries. Arnica preparation used topically have been demonstrated to act as anti-inflammatory and assist normal healing processes by facilitating transport of blood and fluid accumulation through dilating action of subcutaneous blood capillaries. If ingested internally, the toxin helenalin produces severe gastroenteritis and internal bleeding of digestive tract if enough material is ingested.

### 2.3.6. Amla

Indian gooseberry (*Embllica Officinalis*) is a tree native to India and the Middle East. In Ayurveda, dried and fresh fruits of the plant are used as a common ingredient. Popularly used in inks, shampoos and hair oils, the high tannin content of Indian gooseberry fruit act as a mordant for fix dyes in fabrics and is believed to nourish the hair and scalp and prevent premature grey hair. Amla fruit is eaten raw or cooked into various dishes, such as *dal* (a lentil preparation) and amla

murabbah, a sweet dish made by soaking the berries in sugar syrup until they turn into candy. Be gone it is traditionally consumed after a meals. In the Batak region of Sumatra, Indonesia, the inner bark is used to impart an astringent, bitter taste to the broth of a traditional fish soup known as *holat* [31].

### 2.3.7. *Aloe vera*

*Aloe vera* is a species of succulent plant of the genus *Aloe*. With about 500 species, aloe is widely distributed, and is considered an invasive species in many world regions. *Aloe vera* is used in traditional medicine as a skin treatment. Early records of its use appear from the fourth millennium BCE [32]. It is also mentioned in the Juliana Anicia Codex of 512 CE. However, for cosmetic or medicinal purposes there is little scientific evidence about the effectiveness or safety of *Aloe vera* extracts, and the positive evidence that is available is often contradicted by other studies. Despite these limitations, there is some preliminary evidence that *Aloe vera* extracts may be useful in the treatment of diabetes and elevated blood count in humans. Scientific evidence for the cosmetic and therapeutic effectiveness of *Aloe vera* is limited and when present is typically contradictory. Despite this, the cosmetic and alternative medicine industries regularly makes claims regarding the soothing, moisturizing and healing properties of *Aloe vera* especially via Internet advertising. As a food, *Aloe vera* is very bitter and unpalatable. *Aloe vera* gel, however, is used as an ingredient in commercially available yogurt, beverages and some desserts. It is common practice for cosmetic companies to add sap or their derivatives from *Aloe vera* to products such as makeup, tissues, moisturizers, soaps, sunscreens, incense, razors and shampoos. It has also been suggested that bio-fuels could be obtained from *Aloe vera* seeds. Other uses for extracts of *Aloe vera* include the dilution of semen the artificial fertilization of sheep, use as fresh food preservative, and use in water conservation in small farms [32].

### 2.3.8. *Neem*

*Azadirachta Indica*, commonly known as neem, nintree or Indian lilac, is a tree in the mahogany family Meliaceae. In India, the tree is known as the "divine tree," "heal all," "nature's drugstore," village pharmacy, and "panacea for all ailments." Products made from neem include anti-helminthic, It has proven medicinal properties as being antifungal, anti-diabetic, antibacterial, antiviral, anti-infertility and sedative. It is considered a major ingredient in Ayurvedic medicine and is especially prescribed for skin diseases. Neem as Herbal cosmetic Neem oil is used for preparing cosmetics (soap, shampoo, balms and creams), and is useful for skin care such as acne treatment, and keeping skin elasticity. Its uses in traditional Indian medicine In addition, the neem tree is of great importance for its anti-desertification properties and possibly as a good carbon dioxide sinks. Practitioners of traditional Indian medicine recommend to patients suffering from Chicken pox sleep on neem leaves. The seed and leaf oils are used in a large number of skin products, body lotions, beauty care facial packs. The formulation is being used in combination with other natural ingredients. As the herbal cosmetic industry is in a boom phase, it is an open invitation for neem oil manufacturers worldwide to produce high quality neem oil for use in the cosmetic industry [32].

### 2.3.9. *Coconut oil*

It is produced by crushing copra, the dried kernel, which contains about 60-65% of the oil. Coconut oil contains high amounts of glycerides of lower chain fatty acids. Coconut oil is obtained 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 [33]

### 2.3.10. *Joboba 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 odor, color 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 almost identical. Sebum protects and moisturizes the skin and hair but is stripped away by chemicals, pollutants, the sun and the aging process, resulting in dry skin and hair. Jojoba oil replenishes what skin and hair lose and restores them to their natural pH balance [34]

### 2.3.11. *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 [33]. Carrots get their characteristic bright orange color from  $\beta$ -carotene, and smaller amounts of  $\alpha$ -carotene and -carotene.  $\alpha$  and  $\beta$ -carotene are partially metabolized into vitamin A in humans [35].

### 2.3.12. *Rhodiola Rosea*

It is commonly known as golden root, roseroot, Aaron's rod, arctic root, king's crown, *lignum rhodium*, orpin rose. It grows mainly in dry sandy plains at high altitudes in arctic regions of Europe and Asia, has been used in traditional folk medicine for physical stamina, work productivity, longevity, resistance to high altitude sickness, and for the treatment of fatigue, depression, anemia, impotence, gastrointestinal diseases, infections and nervous system disorders [36]. *Rhodiola Rosea* is rich in phenolic compounds, which are known to have strong antioxidant properties [37].

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## 3. Conclusion

Herbal cosmetics are formulated using permissive cosmetic ingredients to form a base in which one or more herbal ingredients are used to treat and beautify various skin diseases. The chemical formulation of all these cosmetic products includes various natural additives such as waxes, oils, natural colors, natural fragrances and plant parts such as leaves, etc. Cosmeceuticals are agents that lie somewhere between pure cosmetics (lipstick and rouge) and pure medicine (antibiotics, corticosteroids) methods. Cosmetic products are the best option for reducing skin problems like hyper-pigmentation, skin wrinkling, skin aging and rough skin texture etc. The demand for herbal cosmetic is increasing rapidly. The benefits of herbal cosmetics are low cost, side effect free, eco-friendly, safe to use etc. The future ahead looks great compared to synthetic cosmetics. Proper regulation and standardization of these herbs will lead to tremendous and significant growth in the herbal cosmetics sector.

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## Compliance with ethical standards

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The authors report no conflicts of interest. The authors alone are responsible for the content and writing of this article.

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