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An Overview of Herbs in Skin and Personal Care Cosmeceuticals



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ABSTRACT

Herbs in cosmeceuticals have been exploring segment in skin and personal care industry. Commonly used herbs in cosmeceuticals are Aloe vera, borage, calendula, chamomile, comfrey, cucumber, dandelion, elderflower, fennel, ivy, lady's mantle, lavender, lemon, marshmallow, orange flower, peppermint, rose, rosemary, sage, thyme and yarrow. They provide healing, softening, soothing, astringent and moisturizing effect. This review explored some important herbs i.e. saffron, amla, raw honey, banana, neem, aloe vera, palash, garlic and papaya which have been used for skin treatment in cosmetic industry. Macroscopically characters, chemical constituents, cultivation and collection, uses and benefits of these herbs have been detailed.



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INTRODUCTION

Cosmeceuticals are the collaboration among pharmaceutical active ingredient and the cosmetic. Nowadays, it has been considered to be the fastest emerging segment in skin and personal care industry due to change in lifestyle of people around the world. Dermaceuticals are specifically designed for use in skin care and are developed with the skills of pharmaceutical science. This term consists of two words dermatological and pharmaceutical. Herbal creams maintain the skin healthy and protect facial tissues from direct sunlight, dust and pollution. These contain natural herbs extracts which restore natural oils and nourishes the skin well. They provide physical as well as chemical barrier to act as sunscreens. Herbal creams provide cleansing, emollient, cooling and soothing effects. In addition, allows the skin to breathe and sweat naturally. The herbal approach to appropriate skin care is predominantly based on essential fundamentals of cleansing, nourishing and moisturizing. The stress and skins natural process of cell degradation decay as well as constant deleterious effect of environment cause aging of skin. Remedies include exfoliation to remove dead skin cells, epidermal stimulation for new cell growth, antioxidant properties for cellular rejuvenation and repair, improve capillary blood flow and penetrating moisture and nutrients to replenish various layers of skin(1).

COMMONLY USED HERBS IN COSMECEUTICALS (2, 3)

Aloe vera sap is soothing and healing.

Avocado is high in oils and nutrients, making an excellent skin food.

Borage is good for dry, sensitive skin.

Calendula is healing, especially for rough or damaged skin.

Chamomile is gentle and soothing and softens, as well as whitens, skin.

Comfrey is healing and soothing, containing allantoin, a protein which speeds up cellular renewal.

Cucumber is a good cleansing agent and toner, as well as being soothing and healing.

Dandelion contains a rich emollient useful in cleansing creams for dry, mature, and sallow skin.

Elderflower is a good overall tonic for all skin types. It also softens, smoothes wrinkles, fades freckles, and soothes sunburn.

Fennel is cleansing and soothing. Crushed seeds can be added to face packs.

Ivy relieves sunburn and helps to disperse trapped fluids and toxins in the fight against cellulite.

Lady's Mantle is healing and soothing for sensitive or rough hands and makes a good astringent for large pores.

Lavender is healing and a gentle cleanser and tonic for all skin types.

Lemon is an astringent that restores the skin's natural acid balance.

Linden blossoms soothe and soften and are good for deep cleansing.

Marshmallow is a healing softener for dry, chapped hands and for sunburn.

Orange flower is an excellent skin tonic, helping to restore the skin's acid balance. It is also good for dry skin and broken capillaries and stimulates cell replacement.

Parsley is a good conditioner for dry, sensitive, and troubled skin.

Peppermint is a stimulating astringent that clears the complexion.

Rose has a soothing, gentle, cleansing action that refines and softens the skin.

Rosemary is an invigorating tonic and antiseptic which boosts circulation and deep skin cleansing.

Sage is a cleansing, stimulating astringent which tightens large pores.

Thyme is a gentle stimulating and antiseptic cleanser.

Violet is a gentle, soothing astringent.

Watercress, as an expressed juice, can help clear blemishes.

Witch Hazel is soothing and astringent. Distilled witch hazel contains 15% alcohol.

Yarrow is a healing and cleansing astringent.

HERBS USED FOR SKIN TREATMENT

Biological sources of some important herbs used for skin treatment have been listed in Table 1.

Table 1 Biological sources of some important herbs used for skin treatment(2, 3)

Drug	Biological source
Saffron	Saffron is dried stigma and style tops of <i>Crocus sativus</i> Linn. Family: Iridaceae
Amla	Consists of dried and fresh fruits of <i>Emblica officinalis</i> Family: Euphorbiaceae
Raw honey	It is obtained from honeycomb of bees <i>Apis mellifera</i> . Family: Apidae
Banana	<i>Musa</i> ; Family: Musaceae
Neem	Neem consists of fresh or dried leaves of <i>Azadirachta indica</i> . Family: Meliaceae
Aloe Vera	Aloe is the dried latex of leaves of various species of <i>Aloe barbadensis</i> , Family: Liliaceae
Palash	Palash consists of dried seed, fruit, leaves and flowers of <i>Butea monosperma</i> Lam. Family: Papilionaceae.
Garlic	It consists of fresh compound bulb of <i>Allium sativum</i> Linn, Family: Liliaceae
Papaya	<i>Carica papaya</i> ; Family: Caricaceae
Coconut oil	<i>Coco's nucifera</i> ; Family: Palmaceae
Almond oil	<i>Prunus Amygdalus</i> Variety <i>dulcis</i> (sweet almonds) or <i>Prunus Amygdalus</i> Variety <i>amara</i> (bitter almonds), Family: Rosaceae
Sandal-wood	It is obtained from dried wood of <i>santalum album</i> . Family: Santalaceae
Tulsi	Tulsi consists of fresh and dried leaves of <i>Ocimum sanctum</i> L. and <i>Ocimum basilicum</i> L.; Family: Labiatae

SAFFRON

Synonyms: *Crocus*, Spanish saffron, French saffron

Cultivation and collection: Saffron thrives well in cold regions with warm or subtropical climate. It requires rich, well-drained, sandy or loamy soil. The plant is propagated by bulbs. No manure is applied or irrigation is given once the plants are established. The bulbs continue to live for 10-15 years, new bulbs being produced annually and the old ones rotting away. Styles and stigmas are separated and dried in the sun or over low heat on sieves in earthen pots. The tripartite stigmas plucked from freshly collected flowers and dried in the sun constitute saffron of the best quality. The plants flower in October-December; heavy rains during this period are harmful(2, 3).

Macroscopically characters:

Color: Reddish- brown with some yellowish pieces of tops styles.

Odor: Strong peculiar and aromatic.

Taste: Aromatic and bitter.

Chemical constituents: (2, 3)

It contains number of carotenoids colored compounds such as ester of crocin (color glycoside), picrocrocin (colorless bitter glycoside), crocetin, gentiobiose, α and γ -carotene, crocin-II, lycopene and zeaxanthin and safranal.

Uses & benefits of saffron:

It is used for glowing & brightening the skin and also used to remove the tan & tone the skin (Figure 1). By using saffron we can get rid of acne (4).

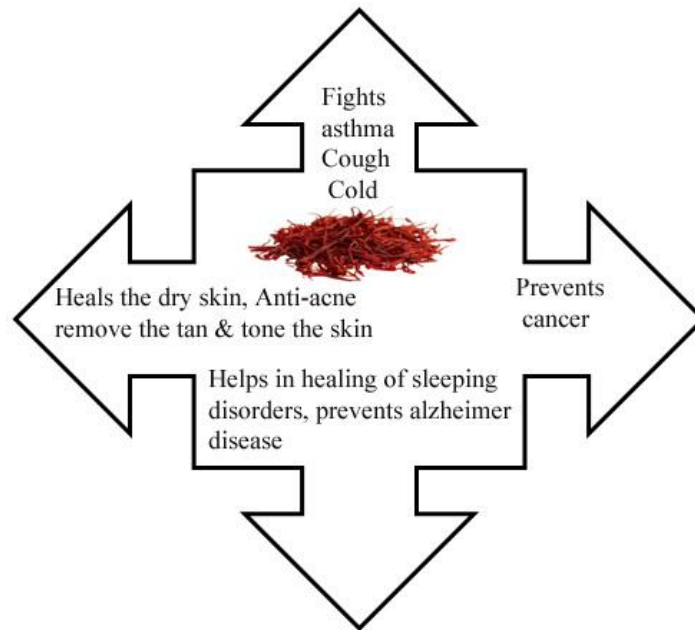


Figure 1: Uses and benefits of saffron

AMLA

Geographical sources: Amla is a small or medium tree that grows in deciduous forests of India, Sri Lanka and Myanmar.

Chemical constituents:(2, 3)

Amla constitutes of chemicals like natural vitamin C, fat, phyllembilin, pectin and tannins. It also contains minerals like iron, calcium and phosphorous.

Uses & benefits of Amla: (5, 6)

As laxative, have anti-aging, antioxidants help in reviving the skin texture and makes the skin smooth (Figure 2).

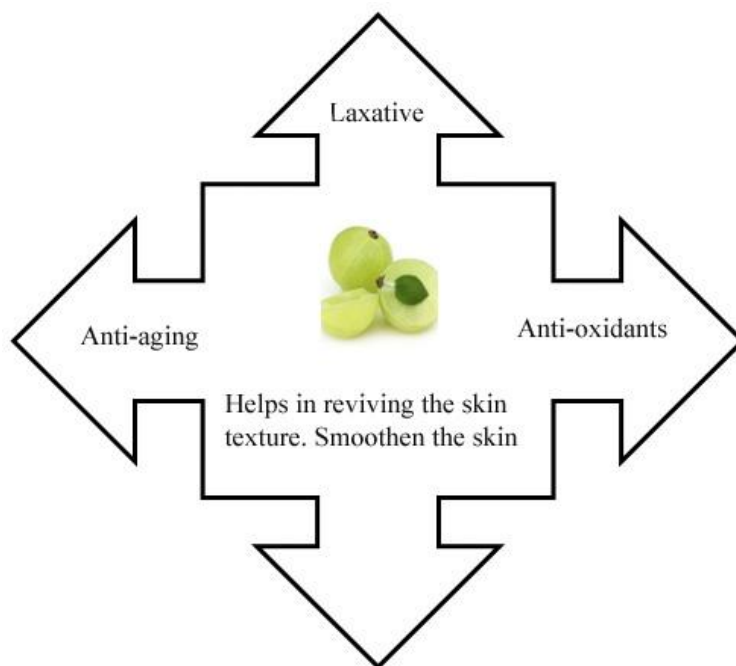


Figure 2: Uses & benefits of Amla

RAW HONEY

Synonyms: Beeswax; Cera-flava

Geographical sources: It is prepared in California, Africa, France, Italy, West Africa and India.

Preparation: Combs and capping of honeycomb are kept in boiling water, for melting. The water-soluble impurities are dissolved and other impurities sinks in the water. On cooling, the melted wax gets solidity and floats on the water surface. Wax is removed and process is repeated several times to get pure yellow beeswax. This is bleached with charcoal, potassium per-magnate, chlorine, ozone, chromic acid or hydrogen peroxide to obtained white beeswax. Natural bleaching is done by exposing thin layer of yellow beeswax to sunlight.

Description: (Figure 3)

Color: white or yellow

Odor: honey like

Taste: waxy

Fracture: brittle & granular

Solubility: Soluble in ether, chloroform, essential & fatty oils and insoluble in water.

Chemical constituents:

It consists of lipids like wax- myricyl palmitate (80%); wax-acid such as cerotic acid (15%); cholesterol ester, lignoceric acid, myristolactone, myricyl alcohol and ceryl alcohol, aromatic substances e.g. cerolein(2, 3).

Uses & benefits of raw honey:

As a pharmaceutical aid, moisturizer, skin softener, skin healer, anti-inflammatory, antibacterial. It is vitamin A rich source (7).



Figure 3: Important herbs in cosmeceuticals

BANANA

Scientific name: Musa

Chemical constituents:(6)

The banana contains plenty of water and carbohydrates. About 1% consists of fiber, protein and fat. The whole plant is rich in tannins, phenolics, biogenic amines and nucleosides.

Polysaccharides: 20% of starch in the fresh fruit.

Ascorbic acid: 10 to 20 mg/100 g in fresh fruit.

Amines: serotonin, tyramine, dopamine and noradrenalin

Acids: citric acid and malic acid.

Aromatics substances: isopentenyl acetate as main flavor

Uses & benefits of Banana:

Used as skin moisturizer, oil controls, anti-aging, anti-acne and lightens dark spots.

NEEM

Geographical source: It is found in India, Pakistan, Sri Lanka, Malaya, Indonesia, Japan, Tropical region of Australia and Africa. In India, it is found in Uttar Pradesh, Maharashtra, Tamil Nadu, Rajasthan, and M.P.

Macroscopically characters:(2, 3)

Leaves: Imparipinnate, alternate, exstipulate, 3-6 cm long on long slender petioles; leaflets 7-17; alternate or opposite, very shortly stalked, 1-1.5 cm long. Apex: ovate-lanceolate, attenuate; base: unequal; color: smooth and dark green; odor: typical; taste: bitter.

Fruits: Shape: ovoid, bluntly pointed, smooth drupe; color: green (young and unripe); yellow to brown (mature and ripe); very scanty pulp and hard bony endocarp; solitary with a thick testa and embryo with foliaceous cotyledons in the axis of scanty endocarp.

Seed oil: Color: yellow to brown; taste: bitter; odor: garlic.

Chemical Constituents: (2, 3)

Leaves: Nimbin, 6- desacetylnimbinene, nimbinene, nimbandiol, nimbolide, quercetin, β -sitosterol, ascorbic acid, n-hexacosanol, nonacosane and amino acid, nimbin and nimbidinin

Fruits: Gedunin, 7-deacetoxy-7 α - hydroxygedunin, Azadiredione, azadirone, nimbiol and 17-epiazadiradione.

Seeds: Tetranortriterpenoids; 1, 2-diepoxyazadiradione, 7-acetylneotrichilenone, 7-desacetyl-7-benzoylgedunin, Azadirachtin.

Oils: Fatty acid: Myristic acid, palmitic acid, stearic acid, oleic acid and linoleic acid; Glycerides: Oleopalmitostearin, oleodistearin, odiolein and linoleodiolein; Bitter principle: nimbidin, nimbidinin, nimbin, nimbinin and nimbidol.

Uses & benefits of Neem(8-11)

Leaves: Poultice, applied to boils; in worm, jaundice and in skin disease; ulceration of cow-pox; insect-repellent; antiviral and antifungal.

Oils: stimulant, antiseptic; rheumatism and skin disease; antiviral activity; for soap making and spermicidal.

ALOE VERA

Description: Aloe Vera is a stemless or very short-stemmed plant, growing. Approximately 80-100 cm tall, spreading by offsets and root sprouts. The leaves are lanceolate, thick and fleshy, green to grey-green, with a serrated margin(2, 3).

Chemical constituents: Vitamins, minerals, enzymes, sugars and anthraquinones. Carboxypeptidase is an important enzyme, which produces an anti-inflammatory effect, after rendering bradykinins inactive. Phenolic compounds e.g. Isobarbaloin, Anthrone-C-glycosides and Barbaloin. Various essential amino acids and antioxidant vitamins A, C and F are derived from this plant (8, 10, 12).

Uses & benefits of Aloe Vera: (5)

Aloe Vera is useful for treating X-ray burns, dermatitis, cutaneous and disorders of skin.

Aloe Vera gel has the remarkable ability to heal wounds, ulcer and burns.

It is used to make antiseptic, which can kill mold, bacteria, funguses and viruses.

Aloe Vera is known to be highly beneficial for skin. It prevents the growth of acnes and is used as a beauty product to enhance skin growth.

Both oral intake and topical dressings of Aloe Vera encourage healing of any kind of wound on the skin, burn or scald. It also speeds up the convalescing period after recovery.

Aloe Vera can be tried on blisters, insect bites, rashes, sores, herpes, urticaria, athlete's foot, fungus, vaginal infections, conjunctivitis, sties, allergic reactions, and dry skin.

Topical used of this plant includes sunburn, frostbite, shingles, screening out x-ray radiation, psoriasis, preventing scarring, rosacea, warts, wrinkles from aging, and eczema.

PALASH

Geographical source: It is found in greater parts of India, Burma and Sri Lanka.

Macroscopical characters:

Seeds: Shape: flat and uniform; size: 25-38 mm long, 16-25 mm wide, 1.5- 2.1 mm thick and color: dark reddish brown. Thin, glossy, veined and wrinkled enclosing two large yellowish leafy cotyledous. The hilum is conspicuous and situated near the middle of the concave edge of the seed.

Leaves: 3-foliolate, leaflets coraceous, obtuse, glabrous above when old, finely silky and conspicuously reticulately veined beneath.

Flowers: Bright orange red and large

Chemical constituents:

Seed: Fixed oil (fatty acid: linoleic acid, oleic acid, linolenic acid; palmitic acid, stearic acid, arachidic acid, behinic acid and linoceric acid); alkaloid (monospermine) and palasonin and palasonin-N- phenyl imide.

Flowers: Butrin, butein, Flavonoids, steroids, Coreopsin, Isocoreopsin, Sulphurein Monospermoside and isospermoside, chakones and auronones (bright color).

Root: Glycine, glucoside and aromatic compound.

Uses and benefits of Palash:(13)

Leaves: Astringent, anti-inflammatory, useful in pimples, boils and inflammation.

Flowers: Useful in leprosy, skin diseases, swellings and burning sensation.

Seeds: Rubefacient, useful in herpes, skin diseases, ringworm, roundworm.

GARLIC

Geographical source: Garlic is cultivated in India, Russia, USA, Italy and Southern Europe.

Macroscopical characters: Type: Sub-globular compound bulb with several cloves, enclosed in a silky white or pinkish papery envelope of the skin. The cloves are attached to a flat, circular, hard axis with numerous thin wiry roots from its underside and short sub-cylindrical outgrowths from the upper surface. Each clove is ovoid, surrounded by two papery scale leaves, the outer one whitish and loose, the inner one pink and adherent, but easily separable from the solid portion of clove; the papery scale leaves enclosed two whitish, fleshy scale, inner one thinner and small than the outer. The foliage leaves present in the center are yellowish green (2, 3).

Chemical constituents:

Essential oil: Alliin, a sulfur-containing amino acid, Allicin-allyl sulfide, Polysulphide responsible for the unpleasant smell of the oil. Amino acid: Leucine, methionine, S-methyl cysteine, S-allyl cysteine, allyl propyl disulfide, Vitamins: A, B, C and D, fatty acid, mucilage and albumin, Minerals: calcium, iron and zinc.

Uses and benefits of Garlic:(14)

Oil of garlic is used as an insecticide and antibacterial. Useful to control sores acne and pimples. Used in skin lotions and creams.

PAPAYA

Description: (3)

Papaya is small, unbranched tree, with a single stem growing to 5-10 m tall, with the spirally arranged leaves. The lower trunk is conspicuously scarred with the leaf. The leaves are large, 50-70 cm diameter and deeply palmate lobed, with seven lobes. The fruit of the plant is cultivated by tropical people, as a breakfast fruit. The plant is native to the tropics of the Americas. In Mexico, it was cultivated many centuries before the emergence of the Mesoamerican classic cultures. In India, papaya is cultivated throughout the country and is known for its medicinal properties.

Chemical constituents :(3)

It contains protein; carbohydrate, fiber, ash, Ca, P, Fe, Na, K, beta-carotene equivalent, thiamine, riboflavin, niacin, ascorbic acid and vitamin E. Leaves contain glycoside, (carposide) and alkaloid (carpaine).

Fresh leaf latex contains water, caoutchouc-like substances, pectineous matter and salts, malic acid, papain, fat, and resin.

The seeds are reported to contain protein, fatty oil, carbohydrate, crude fiber, ash, volatile oil, glycoside, caricin, and the enzyme, myrosin. The fatty oil of the seeds contains saturated acids (palmitic, stearic, and arachidic) and unsaturated acids (oleic and linoleic).

Uses and benefits of Papaya:(6)

It has been used for treating digestive problems, intestinal worms, warts, corns, sinuses, and chronic forms of scaly eczema and cutaneous tubercles.

The latex is also used in curing psoriasis, local antiseptic and ringworm.

Papaya latex is also used as dyspepsia cure.

It is applied to burns and scalds externally.

Milky juice of unripe fruit is a good ingredient for facial and face cream.

Fruit pulp makes skin soft and removes blemishes.

REFERENCES

1. Saraf, S., Chhabra, S. K., Kaur, C. D., Saraf, S. Development of photo chemoprotective herbs containing cosmetic formulations for improving skin properties. *J Cosmetic Sci.* 2012, 63, 119-131.
2. Kokate, C. K., Purohit, A. P., Gokhale, S. B. *Pharmacognosy.* NiraliPrakashan, 42th ed., 2008.
3. www.wikipedia.com
4. Sasidharan, S., Joseph, P., Junise. Formulation and evaluation of fairness serum using polyherbal extracts. *Int. J Pharm.* 2014, 4(3), 105-112.
5. Pereira, A., Mallya, R. Formulation and evaluation of a photoprotectant cream containing Phyllanthusemblicaextract phospholipid complex. *J. PharmacognosyPhytochem.* 2015, 4(2), 232-240.
6. Himaja, N., Kumar, A. A, Kumar, B. B. Preparation and evaluation of polyherbal fruit face mask. *J. Res. Pharm. Sci.* 2015, 2(11), 7-13.
7. Burlando, B., Cornara, L. Honey in dermatology and skin care: a review. *J. CosmetDermatol.* 2013, 12(4), 306-313.
8. Chandu, A. N., Santhosh Kumar S. C., Debnath, S., Bhattacharjee, C., Nagarani, B. A. Review: herbs used as moisturizing cream for skin treatment. *Indo American J Pharm Res.* 2011, 1(1), 8-17.
9. Sawant, S. E., Tajane, M. D. Formulation and evaluation of herbal ointment containing Neem and Turmeric extract. *J Scientific Innovative Res.* 2016, 5(4), 149-151.
10. Azubuike, C. P., Ejimba, S. E., Idowu, A. O., Adeleke, I. Formulation and evaluation of antimicrobial activities of herbal cream containing ethanolic extracts of Azadirachta indica leaves and Aloe Vera gel. *Journal Pharm Nutrition Sci.* 2015, 5, 137-142.
11. Mali, A. S., Karekar, P., Yadav, A. V. Formulation and evaluation of multipurpose herbal cream. *Int. J Sci. Res.* 2015, 4(11), 1495-1498.
12. Aswal, A., Kalra, M., Rout, A. Preparation and evaluation of polyherbal cosmetic cream. *Der Pharmacia Lettre.* 2013, 5(1), 83-88.
13. Panchal, C., Sapkal, E., Parekh, P., Mahto, S. Formulation and evaluation of herbal lip jelly using pigments of Buteamonosperma flower. *Int. J Inst. Pharm Life Sci.* 2015, 5(1), 21-25.
14. Chandrasekar, R., Sivagami, B., Swapna, D. Herbal cosmetics: an overview. *Int. J. Pharma Res Review,* 2016, 5(12), 1-20.