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Review Article

A Review on Herbal Cosmetics

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ABSTRACT

Cosmetics are applied on skin to enhance the personality, beauty, colour, complexity, tone, texture etc. Maintaining a healthy skin is important for a healthy body. Skin is a protective covering and an attractive feature of the body for both men and women. It forms an important part of personal appearance. There are various cosmetic preparations available in the market like creams, lotions, oils, soaps, gels, moisturizers, etc. These cosmetic can be applied on the skin to enhance beauty and protect the skin from different skin disorders like acne, blackheads, age spots, skin rashes, skin allergy etc. There are also other preparations which include anti-ageing creams, skin whitening agents, gels etc. for protecting the skin from UV radiations, sunscreen lotions and moisturizing creams to protect the skin from different climatic conditions. In the present scenario most of the cosmetics products are adulterated. There are various other cosmetic preparations in the market which are of spurious quality which may produce some side effects like skin rashes, skin allergic reactions and may lead to skin diseases. In this paper we have reviewed different medicinal plants used as cosmetics and these preparations can be used safely without side effects on the skin. In this article a special emphasis has been given to herbal cosmetics because herbals are a part of our life and their uses are increasing day by day all over the world. Scientists are still working on the evaluation of new methods that could increase our knowledge and enable to find new applications for it.

INTRODUCTION

Among the category of medical, similarly cosmetic goods which were also utilized to improve or improve, taking care of one's face and physique is important, as is how they seem. In

addition to being used to making one look better, cosmetics must also be accustomed to caring for one's skin and body and to add fragrance. There are many different forms of cosmetics with distinct and important purposes, even though cosmetics are typically associated with skin and body care.

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In daily life, cosmetics are used by people of many different ethnicities and civilizations. The ability to express oneself creatively; the importance of self-identity are said to be the main drivers of cosmetics present popularity. The primary purpose of makeup is to provide the user with a fresh, presentable appearance. Despite the enormous popularity of the cosmetics business, many Western Nations still view cosmetics as little more than simple makeup. The US FDA plainly declared that cosmetics items that are primarily meant for use in the body of humans change appearance, encouraging beauty, cleanliness and either enhancing rather than endangering the building or functionality of the body" (Garg, 2018; Surya and Gunasekaran, 2021).

Bark, leaf, flowers, roots, fruits, and seeds are only a few of the plant's many components that contain bioactive substances. As a result, plants play an important role in cosmetology and are directly used by the majority of civilizations to treat a variety of illnesses. As they are less expensive, have fewer side effects, and are an excellent source for a safe future, plant-based goods are becoming more and more popular (Sharma and Alam, 2022). Plants have long been recognised as potential sources of a wide range of chemical molecules known as phytochemicals (Kumari et al., 2022). Herbs and spices are among the various useful foods that include a plethora of bio-functional molecules, and they are typically used as preservatives and flavoring enhancers (Balyan, 2022). The region of the Himalayas is the epicentre of several herbal plant species (Gurav et al., 2022). Natural pigments are very important economically since they are more advantageous and have important characteristics like anticancer and antioxidant. Plants produce phytochemicals to protect themselves from microbial invasions, and they can be used therapeutically in pharmaceutical and nutraceutical products (Pandhi et al., 2022).

1.1 History

There is a past to cosmetics. That stretches spanning over 7,000 years and has a presence in almost all historical civilizations. The use of cosmetics in body art is said to be the first known type of human ritual. Using red natural colorants and coloring books connected to the appearance of the Homo beings are in Africa regarded as definitive proof of the aforementioned claim. The Old Testament makes reference to cosmetics in 2 Kings 9:30, when Delilah painted her eyelids around 840 BC, and the book of Ester details a number of cosmetic procedures. These historical facts are mentioned in 2 Kings 9:30 of the Bible's Old Testament.

Although, cosmetics were not popular in Rome, certain wealthy Romans at the time did use them. It has been discovered that some Romans created cosmetics in the past. For example, eye lining was done with kohl.

An unnamed American made the cosmetic discovery of deodorant in 1888, and Mom became the brand name for the product. Also, after 1900 AD, people still did not accept cosmetics. Aerosol deodorant and roll-on deodorant first appeared on the market in 1952 and 1965, respectively.

At some time in 1910, both colored cosmetics and Russian ballet were first performed. It should be mentioned that modern cosmetic businesses began producing products somewhere in the early 1900s.

Japan is the world's second-largest market for cosmetics, and the industry has reached a stable period. On the other hand, the market scenario is changing quickly. In the present era, anyone can quickly and easily get knowledge about numerous cosmetics for various purposes. This helps to create new work opportunities in the cosmetics business. The expansion of the cosmetics sector is,



however, somewhat erratic. 2010 had little change, but between 2004 and 2012, Russian perfumery saw the most growth, growing to a value of US\$13.5 billion (Surya and Gunasekaran, 2021; Marcia et al., 2019; Burlando et al., 2010; Reshetnikov et al., 2021).

Advantages of herbal cosmetics:

1. Herbal cosmetics are more popular than synthetic ones these days because they give the body nutrients, boost health are devoid of artificial chemicals, and have no negative side effects like synthetic cosmetics do.
2. Natural and free of any harmful artificial ingredients that can be harmful to the skin, herbal cosmetics are safe to use. Different plant part and plant extracts are utilized in herbal cosmetics in place of conventional artificial items.
3. Dermatologist have tested and proven that they are hypo allergenic and safe to use.
4. Natural cosmetics are inexpensive.
5. These have not undergone animal testing. [16-18]
6. They have no adverse side effect and do not cause allergic reaction.
7. They blend in seamlessly with skin and hair.
8. When compared with other cosmetics, these are much more effective.
9. Plant extracts reduce the bulk qualities of cosmetics and provide the necessary pharmacological effect.
10. Easily accessible and present in wide range of plants.

11 They have more stability, purity, efficacy, with their herbal ingredient.

12. Simple to produce.

13 Herbal cosmetics are easy to handle and store for longer period of time.

14. Cheap in price. [19-20]

Disadvantages of herbal cosmetics:

1. Herbal drugs have slower effects as compare to allopathic dosage form. Also, it requires long term therapy.
2. They are difficult to hide taste and odour.
3. Most of the herbal drugs are not easily available.
4. Manufacturing process is time consuming and complicated.
5. No pharmacopoeia defines any specific procedure or ingredients to be used in any of herbal cosmetics. [16-20]

Raw Materials Generally Used in Herbal Cosmetics.

Oils, Waxes, Gums, Hydrophilic Colloids, Colours, Perfumes, Protective Agents, Bleaching Agents, Preservatives, Antioxidants And Other Auxiliary Agents.

1. Oils: Oils are derived from vegetable and mineral sources, and are used in cosmetics. Examples of vegetable oils are almond oil, arches oil, castor oil, olive oil and coconut oil. Examples of mineral oils are light and heavy paraffin.

a) Almond Oil: It is a fixed oil obtained by expressing the seeds of *Prunes amygdalus*, Family Rosaceae. The oil is pale yellow in colour, with a characteristic odour. The active principles are



mainly the mixture of glycoside with oleic acid, linoleic acid, myristic and palmitic acid. It has an emollient action, so it is used in the preparation of creams and lotions.

b) Arachis Oil: This is also a fixed oil obtained from the seeds of the *Arachis hypogaea* belonging to the family Leguminosae. The oil is pale yellow in colour, with a faint nutty odour. Refined groundnut oil is colourless, with active principles like oleic. Linoleic acid and a small amount of other acids. At 3°C, it is cloudy, at a lower temperature, it solidifies. It is used in the preparation of hair oils and brilliantines.

c) Castor Oil: Oil is obtained from the seeds of *Ricinus communis* belonging to the family Euphorbiaceae. It has a slight odour, the oil is either yellow in colour or colourless. It consists of a mixture of glycosides, in which 80% of ricinoleic acid is the major constituent. At 0° C it forms a clear liquid. It is used as an emollient, in the preparation of lipsticks, hair oils, creams and lotions.

d) Olive Oil: This oil is obtained from the fruit of the *Olea europaea*, belonging to the family Oleaceae. The oil is either pale yellow or greenish yellow in colour, it has a slight odour. It consists of the glycerides of oleic acid, palmitic, linoleic, stearic and myristic acids. At a lower temperature, it is solid or partly solid. It has emollient, soothing properties. It is used in the manufacturing of creams, lotions and bath oils, [8]

e) Coconut Oil: This oil is obtained from the dried solid part of the endosperm of the coconut *Cocos nucifera*, family Palmae. It is a white or pearl-white unctuous mass in winter and colourless in summer.

f) Light liquid paraffin: It consists of a mixture of hydrocarbons in the form of an oily liquid which

has no colour or odour. Viscosity and weight per ml (0.83-0.87g) are both low in light liquid paraffin. It is used in the manufacture of bath oils, hair oils, brilliantines, lotions and creams, due to its better spreadability.

g) 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 creams, lotions, brilliantines, hair oils and bath oils. Heavy liquid paraffin is obtained from petroleum.

2. Waxes: Waxes are the esters resulting from the condensation of high molecular straight chain fatty acids with high molecular straight chain monohydric alcohol of the methanol series. They are used in cosmetics as a base, along with oils and fats. Example: lipsticks. Commonly used waxes are briefly discussed below.

a) 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 myricylpalmitate. It is yellowish brown in colour, solid, with a honey-like odour. Under cold conditions it becomes brittle; when bleached, it becomes yellowish-white solid with a faint characteristic odour. The melting point of beeswax is 62°C-65°C. Beeswax helps in the incorporation of water to form an emulsion.

b) Carnauba Wax: This is obtained from the leaves of the Brazilian wax palm, *Copernicia cerifera*, which belongs to the Palmae family. Carnauba wax is available in various grades. The highest grade is light-brown to pale-yellow in colour. It is in the form of moderately coarse powder or flakes, with a characteristic bland odour. The melting range of this wax is 81°C -86°C. It is a hard wax and is used in the manufacture of candles, wax varnishes, leather and furniture polishes.



c) Paraffin Wax: It is derived by the distillation of petroleum. It is a mixture of solid hydrocarbons consisting mainly of n-paraffins and, to some extent, their isomers. So, it is also called hard paraffin wax. Physically, the paraffin wax is colourless, odourless or a white, translucent, wax-like solid, which is slightly greasy to touch. Paraffin wax melts at 50°C-57°C.

d) Spermaceti: It is a solid wax obtained from the head, blubber and ear case of the sperm whale. *Physeter colodon*, which belongs to the *Physeteridae* family. It consists mainly of cetyl palmitate and cetyl myristate spermaceti in a solid wax, which is a translucent crystalline, pearly-white, unctuous mass with little odour and taste. It melts at a specific gravity of about 0.94. Spermaceti is also available synthetically and is composed of a mixture of esters of saturated fatty alcohols and saturated fatty acids. Synthetic spermaceti is available as white to off-white translucent flakes with a crystalline structure and a pearly lustre. The melting range of synthetic spermaceti is 43°C-47°C.

3. Colours: Colours have been used in cosmetics, since time immemorial, by human beings. Basically, the desire to buy a cosmetic product is controlled by three senses, namely, sight, touch and smell. So color is one of the most important ingredients of cosmetic formulations. Color is a visual sensation which can be caused by a definite wavelength or a group of wavelengths by an object through one or more of the following phenomena: emission, reflection, refraction or transmission. Natural colours such as cochineal, saffron and chlorophyll are discussed in brief here.

a) Cochineal: Cochineal is a red dyestuff derived from the dried female insect *Dactylopius coccus*, which belongs to the *Coccidae* family. Carminic acid is the main colouring constituent in cochineal. On crystallization, carminic acid forms red needles

and at 130°C, the needles darken and also carbonize at 250°C.

For the preparation of carmine, the cochineal is extracted with water. Alum is added to this solution to precipitate the red aluminium salt called carmine lake.

b) Saffron: It consists of the stigmas and tops of the styles of the plant, *Crocus sativa*, which belongs to the *Iridaceae* family. It is a perennial plant grown in Jammu and Kashmir in India. Saffron powder is yellowish and is easily soluble in water, so it is used as a flavouring and colouring agent in food preparations. Saffron contains a number of carotenoids; crocin is an important natural saffron carotenoid. Picrocrocin is a colorless bitter glycoside responsible for saffron's characteristic odour.

c) Chlorophyll: It is the natural green pigment, found abundantly in nature. It is the component that is responsible for photosynthesis.

d) Rose: It is obtained by the steam distillation process from the flower petals of *Rosmarina officinalis*, which belongs to the *Labiatae* family. For obtaining rose oil, the blossoms are collected before they open, a little before sunrise.

e) Jasmine Essential Oil: Obtained from the flowers of *Jasminum grandiflorum*, which belongs to the *Oleaceae* family, the oil is obtained by the solvent extraction method and its essence is used in the perfumery industry.

f) Lavender: It is obtained from the flowers and stalk of *Lavandula officinalis*, which belongs to the *Labiatae* family.

g) Tuberose: The nickname of the tuberose is "mistress of the night". The oil is a brown, viscous liquid with a sweet, heavy and sensuous scent.



h) Geranium: This oil is obtained from the flowers, leaves and stalks of the *Pelargonium graveolens*, which belongs to the Geraniaceae family. Its essence is obtained by the distillation process, from the flowers and stems of the plant. The geranium is known as geranium bourbon.

i) Champa: It is obtained from the flowers of the *Micheliachampaka*. The colour of the flower is yellow to deep orange.

j) Cinnamon: Cinnamon oil is obtained from the different parts of the cinnamon tree its leaves, bark and roots. *Cinnamomum zeylanicum* belongs to the family, Lauraceae. The oil obtained from the bark is most valuable. The oil has a warm, spicy and sweet character.

k) Neroli: It is an essential oil obtained through the distillation process from the flower of the bitter orange tree. It can be stored in amber-coloured bottles in the refrigerator.

l) Clove: It contains essential oils, obtained from the buds of the *Eugenia caryophyllus*, which belongs to the family, Myrtaceae.

m) Ambrette: Ambrette seeds contain oil; it can be obtained by using the expression method. The oil is rich; it is sweet, floral and musky in nature. The oil can be used as an anti-aging agent.

n) Sandalwood: It is obtained by the steam distillation process from the hard wood of *Santalum album* belonging to the family, Santalaceae. In most perfumes, it is used as a fixative agent.

4. Protective Agents: In the formulation of creams, silicones act as protective agents; a combination of silicones with other barrier agents like petroleum jelly, beeswax, paraffin etc. can produce excellent barrier creams.

a) Bleaching Agents

The most commonly used bleaching agents are given below. Mercury Compounds: Mercuric chloride ($HgCl_2$), red mercuric oxide (HgO) and ammoniated mercury are examples of mercury compounds that can be used, for their skin bleaching effects. Currently, the use of mercury compounds is prohibited in cosmetics.

b) Hydroquinone: They are mostly used as bleaching agents for temporarily lightening skin at a concentration of 1.5%-2%. In the case of 5% concentration, redness and burning may be produced. Reverse action of hydroquinone takes place on exposure to sunlight. If the cosmetics containing hydroquinone are discontinued, then too, a similar effect can be observed.

c) Catechol and its derivatives: Catechol exhibits skin lightening effect to an extent. 4 Isopropyl catechol has been found to be among the most potent de-pigmenting agents. They can produce irritation and a sensitization reaction at concentrations of 3% or more.

d) Ascorbic Acid and its derivatives: Ascorbic acid does not seem to be very effective as a de-pigmenting agent, but its use has been found to be safe. It is mostly used in skin bleaching creams, which contain hydroquinone as a stabilizer (antioxidant). Ascorbyl oleate used in skin bleaching cream for bleaching freckles in human skin is used at a concentration of 3% and 5%.

5. Oxidising Agents: Hydrogen peroxide has been used as an oxidizing agent in skin bleach creams. Sometimes, zinc peroxide is also used in anhydrous ointments such as bleaching agents, although the properties of zinc peroxide have not been proved.



6. Opaque Covering Agents: Various cosmetic products which contain white or pale pigments like titanium dioxide, zinc oxide, talc, kaolin, bismuth etc. can provide a temporary but remarkable change in the colour of the skin.

7. Preservatives: These are the agents which are used to prevent spoilage of cosmetic products/They are products of the oxidation of oils and fats and also the growth.

Evaluation parameters:

Parameter	Significance
PH	Determines the acidity or alkalinity; should align with skin pH (~5.5) for safe use
Viscosity	Assesses thickness and flow behavior, important for creams, gels, and lotions
Refractive index	Indicates the purity and concentration of some cosmetic bases
Specific gravity	Used to detect adulteration and maintain formulation uniformity
Spreadability	Measures how easily a cream or gel spreads on skin.
Melting point	Applicable to solid or semi-solid products like balms and lipsticks
Foaming index	Evaluates the foaming capability, mainly for shampoos and soaps
Ash content	Determines total mineral residue, including acid-insoluble and water-soluble ash

CONCLUSION

So, the herbal cosmetics are the most important part of the today's modern life as they are used for the beautifications purpose mainly, their demand increases vigorously.

Herbal Cosmetics having certain advantages over there synthetic cosmetics as follows:

- They are cheap in cost.
- They are easily available in the market.

- They are least toxic and also having least or no adverse effects.

So, from all the study of Herbal Cosmetics we can conclude that "The Herbal Cosmetics are the most significant alternative for the synthetic cosmetics".

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