



Review Article

REVIEW ON HERBAL COSMETICS

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Abstract- Use of herbal derivatives was known to ancient human civilizations. These were utilized as essential foods, medicines or as even cosmetics. Flower, leaf, fruit, root, bark, inner part of stem, wood, beans, rhizome, endosperm, bulb, seed or even whole plants are used to produce bioactive ingredients. Demands of herbal products as well as cosmetics are increasing day by day due to the immense health hazards of synthetic ingredients that again contribute to environmental degradation. Apart from beautification cosmetic bioactive ingredients act as antioxidant, anti-inflammatory, antiseptic, antibacterial agents. These bioactive ingredients include vitamins, antioxidants, oils, dyes, tannins, alkaloids, carbohydrates, proteins, terpenoids and many more. Most important aspect of herbal cosmetics is that they are devoid of any side effects.

Keywords- Synthetic cosmetics, Herbal cosmetics, Antioxidant, Anti-inflammatory, Antiseptic, Antibacterial agents

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Introduction

Aquaculture, Egypt and India are considered to be the motherland of origination of cosmetology. Circa 2500 and 1550 B.C of Indus valley civilization hold the earliest records of use of cosmetic substances and their application [1]. In present situation, the uses of herbal products and cosmetics have increased significantly. Society is reverting back towards natural products be it food, medicine or cosmetics. This is mainly due to the evidences that artificial manmade or synthetic products though are easy to manufacture have immense health and environmental hazards. This has led to many fold hikes in usage of herbal cosmetics. Herbal cosmetics contain cosmetic ingredients as base where one or more herbal ingredients are included. The phytochemicals extracted from a variety of botanicals have dual function as cosmetics [2,3,4]. Firstly, as cosmetics they are part of beautification and secondly, active bioingredients provide nutrients to skin, hair and in many ways influence biological functions there. Archaeological data supports the use of cosmetics before 4000BC [5,6].

Necessity of cosmetics

Some are born beautiful but others are made to look beautiful, cosmetics are made available for both men and women. Women depend more on cosmetic for beautifying them. Beauty has become vital in this modern world. It increases personality and look of a person. In the olden days homemade remedies were used as cosmetics, women prepared their own face packs and applied to their skin and body [7]. The use of cosmetics not only confined to women, but the usages of various cosmetics for self beautification by both men and women were evident in ancient India [8]. Many of these practices were related with the seasons (Sanskrit: Rutus) and the normal rituals of life (Sanskrit: Dinacharya). Cosmetics not only upgrades personality but also associated with merit or Punya, longevity or Aayush, good health or Aarogya, and happiness or Anandam [7]. Modern day cosmetics have also been developed with natural or synthetic constituents to fight UV-rays, aging, wrinkles, acne and oil secretion [9, -13].

Cosmetic types

Simply cosmetics are substances of varied applications to care human body. They are applied by rubbing, pouring, sprinkling or spraying on any part of human body [14]. Depending on the nature cosmetics are of herbal or synthetic types. Herbal cosmetics have natural origin [14,15]. On the other hand synthetic cosmetics are made from chemical reactions using natural resources in the factories. Majority of the brands market synthetic products as cosmetics [16].

Risk of synthetic cosmetics

Raja *et al.* [16] reported in his work that data from the Centers for Disease Control and Prevention (CDC) show that male reproductive problems, including undescended testicles and hypospadias, doubled between 1970 and 1993. The reasons behind these problems are Environmental chemicals. Presence of low-level concentrations of potential reproductive or developmental toxicants, particularly phthalates, in cosmetics and personal care products was reported. Details chemicals found in consumer products and their potential health impacts was published by Environment California in 2004 issuenamely Up Toxic: Chemical Exposures and Increases in Developmental Diseases. Contemporary issues by the Environmental Working Group (Skin Deep: A Safety Assessment of Ingredients in Personal Care Products) and Friends of the Earth (Shop Till You Drop? Survey of High Street Retailers on Risky Chemicals in Products 2003–2004) support Environment California's publication. According to these reports, makeup, shampoo, skin lotion, nail polish, and other personal care products contain chemical ingredients that lack safety data. Animal studies indicate their roles in reproductive tissues and pregnancy defects [17]. Cosmetic chemicals are even responsible for increased cases of breast cancer [18]. People are exposed to metals as trace contaminants in their daily used cosmetics as metals are available in the environment and their natural occurrence in rocks, soil and water cause them to be present in the manufacture of pigments and other raw materials used in the cosmetic industry.

Table-1 List of plants with herbal importance

Common Name	Botanical Name	Parts used	Uses
Aam	<i>Mangifera indica</i> L.	Leaf	Plant extract possess anti-oxidant properties.
Aaraar	<i>Juniperus communis</i> L.	Whole plant	Improves skin health
Akashbel	<i>Cuscuta reflexa</i> Roxb.	Whole plant	Plant extract is useful to control dermatitis, itching and ringworm
Akroot	<i>Juglans regia</i> L.	Leaf and fruit	Hair dyeing
Amla	<i>Embolica officinalis</i> Gaertn.	Fruit	Antioxidant
Anantmoool	<i>Hemidesmus indicus</i> (L.) R. Br. ex Schult.	Root	Blood purifier
Apamarg	<i>Achyranthes aspera</i> L.	Whole plant	Cure skin diseases and ear pain
Arnica	<i>Arnica montana</i> L.	Flower	hair oil
Aswagandha	<i>Withania somnifera</i> (L.) Dunal	Whole plant	Whole plant extract is used in skin cleaning for mulations and possesses antioxidant properties.
Avadago	<i>Persea americana</i> Mill.	Fruit	Antioxidant effects that help to protect cells from free radical damage. In Treatment of psoriasis, wrinkle and stretch marks.
Babool	<i>Acacia arabica</i> (Lam.) Willd.	Bark	Astringent and skin cleaner.
Babchi	<i>Psoralea corylifolia</i> L.	Seeds	Useful to control skin diseases
Babuna	<i>Matricaria chamomilla</i> L.	Leaf	Ingredients of anti-acne cream
Badam	<i>Prunus amygdalus</i> Batsch	Fruit	As sun and fairness cream
Banaba	<i>Lagerstroemia speciosa</i> (L.) Pers.	Leaf	Anti-ageing
Banajwain	<i>Thymus serpyllum</i> L.	Whole plant	hair tonics
Bargad	<i>Ficus racemosa</i> L.	Aerial root	Treatment of hair fall
Basil	<i>Ocimum basilicum</i> L.	Whole plant	anti-inflammatory and enhance hair health
Beetroot	<i>Beta vulgaris</i> L.	Root	treatment of acne and psoriasis
Behera	<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Seed	To dye hair
Ber	<i>Ziziphus jujuba</i> Mill.	Fruit	Useful for dry and itchy skin.
Bile	<i>Cydonia oblonga</i> Mill.	Seed	beautification and protection of skin
Birch	<i>Betula pendula</i> Roth	Leaf	Useful anti- dandruff and anti-aging
Brahmi	<i>Bacopa monnieri</i> (L.) Wettst.	Whole plant	Improves hair growth
Chameli	<i>Jasminum grandiflorum</i> L.	Flower	Oil applied in sunburn, skin diseases
Chia	<i>Salvia hispanica</i> L.	Seed	Anti-ageing
Choti dhudhi	<i>Euphorbia thymifolia</i> L.	Whole plant	Protect from skin infections and ringworms
Cheretta	<i>Swertia chirayita</i> Roxb. ex Fleming	Bark	Bark powder extract control skin affection; possesses antioxidant properties.
Chili Pepper	<i>Capsicum frutescens</i> L.	Fruit	Green Chili helps to reduce pain, inflammation, redness and scaling associated with psoriasis
Cocoa butter	<i>Theobroma cacao</i> L.	Fruit	Protecting skin from damage from UV light
Coffee	<i>Coffea arabica</i> L.	Beans	Prevention of the development of photoaging and inflammatory skin disorders
Coriander	<i>Coriandrum sativum</i> L.	Fruit	Protecting skin cells against oxidative stress
Cucumber	<i>Cucumis sativus</i> L.	Fruit	Skin toner and tightening agent
Dhak	<i>Butea frondosa</i> Roxb.	Leaf and seed	Protect from fungal infections and pimples
Daruharidra	<i>Berberis aristata</i> DC.	Bark	Skin disorder with itching.
Egg plant	<i>Solanum melongena</i> L.	Leaf	Antifungal.
Garlic	<i>Allium sativum</i> L.	Fruit	Enhances immunity, microcirculation and protects from UVB, cancer
Ghratakumari	<i>Aloe indica</i> Royle	Leaf	Use to treat wounds, minor cuts, dry skin and sun burn, nourishing and anti-aging.
Ginger	<i>Zingiber officinale</i> Roscoe	Rhizome	Improved healing of induced abrasion skin wounds.
Grape	<i>Vitis vinifera</i> L.	Fruit	Acne Fighting, skin Tightening and healing, Reduction of dark circles eye, Hydration, Protection of the skin from aging, Skin protection against UVB radiation.
Guava	<i>Psidium guajava</i> L.	Leaf	Leaves are an instant cure for getting rid of itchiness as they contain allergy blocking compounds.
Gulab	<i>Rosa centifolia</i> L.	Flower	Retain moisture in the skin and act as an excellent sun block.
Harra	<i>Terminalia chebula</i> Retz.	Seed	Improves hair quality
Henna	<i>Lawsonia inermis</i> L.	Leaf	Dye for hair
Holy basil	<i>Ocimum basilicum</i> L.	Leaf	Decrease in skin erythma and decrease skin melanin content.
Hulkhusa	<i>Leucas aspera</i> (Willd.) Link	Leaf	Juice of leaves is applied to control scabies, skin psoriasis, chronic skin, skin eruption and eczema.
Jaiphal	<i>Myristica fragrance</i> Hoult.	Fruit	Relieve problem of skin.
Jatamansi	<i>Nardostachys jatamansi</i> (D. Don) DC.	Rhizome	hair growth
Kamala	<i>Mallotus philippensis</i> (Lam.) Müll. Arg.	Flower	Skin diseases
Khas	<i>Andropogon muricatus</i> Retz.	Root	Mixed with red sandal wood powder to cure irritated skin and allergies
Kamal Naal	<i>Nelumbo nucifera</i> Gaertn.	Flower	Whitening and anti-wrinkle cosmetics.
Karela	<i>Momordica charantia</i> L.	Whole plant	Plant extract possesses antioxidant properties.
Kuth	<i>Saussurea lappa</i> (Decne.) Sch.Bip.	Root	hair dye
Lavender	<i>Lavandula angustifolia</i> Mill.	Flower extract	Improves skin and hair health
Lajwanti	<i>Mimosa pudica</i> L.	Whole plants	Herbs extract applied in skin creams and lotions to control itching.
Laal gulab	<i>Hibiscus sabdariffa</i> Rottb.	Flower	the oil is used to produce scrubs and soaps
Lemon	<i>Citrus limon</i> (L.) Osbeck	Fruit	Improves skin
Lemon grass	<i>Cymbopogon citratus</i> (DC.) Stapf	Leaf	Anti-microbial and anti-bacterial.
Maharukh	<i>Ailanthus altissima</i> (Mill.) Swingle	Leaf	Useful in skin creams and body lotions
Makka	<i>Zea mays</i> L.	Stigma	anti-ageing creams and lotions
Mustard	<i>Brassica nigra</i> (L.) K. Koch	Seed	hair and body oil
Mint	<i>Mentha spicata</i> L.	Leaf	Peppermint oil stimulates cold receptors on the skin and dilates blood vessels, causing a sensation of coldness and an analgesic effect.
Nariyal	<i>Cocos nucifera</i> L.	Endosperm	Coconut oil is useful for skin itching and rashes.
Neem	<i>Azadirachta indica</i> A. Juss.	Bark, seed, fruit and leaf	It has antiseptic properties, cures skin diseases
Onion	<i>Allium cepa</i> L.	bulb	Antioxidant.
Panwar	<i>Cassia tora</i> L.	Leaf and seed	Protects skin from infection
Papaya	<i>Carica papaya</i> L.	Fruit	Papain degrades dead cells in the outermost skin layer, thus improving skin health, hygiene and brightness.
Pasque flower	<i>Pulsatilla vulgaris</i> Mill.	Whole	Oil acts as a vesicant when applied to the skin
Parsley	<i>Petroselinum crispum</i> (Mill.) Fuss	Leaf	leaf extract was found to be effective oil controlling agent
Passion fruit	<i>Passiflora incarnate</i> L.	Fruit	It is highly recommended in scalp and hair care products to encourage healthy hair growth and increased vitality.
Pomegranate	<i>Punica granatum</i> L.	Fruit	Anti-inflammatory and anti-aging agents in topical products. Pomegranate Seed Oil has excellent moisturizing and nourishing properties. It is excellent for mature and aging skin, dry and cracked skin, irritated and sun burnt skin.

Pot marigold	<i>Calendula officinalis</i> L.	Leaf	The antimicrobial, antifungal and antiviral properties.
Pumpkin	<i>Cucurbita pepo</i> L.	Fruit	Pumpkin is used as an exfoliation accelerator, a powerful antioxidant and a mild retinoic acid substitute.
Ritha	<i>Sapindus mukorossi</i> Gaertn.	fruit coat	natural shampoo
Safflower	<i>Carthamus tinctorius</i> L.	Flower	As hair tonics
Sage	<i>Salvia officinalis</i> L.	Leaf	as hair conditioner
Sunflower	<i>Helianthus annuus</i> L.	flower	Used for skin and hair care products.
Saffron	<i>Crocus sativus</i> L.	Flower	Useful in the management of melanoma.
Shikakai	<i>Acacia concinna</i> (Willd.) DC.	Pod	Anti-dandruff
Strawberry	<i>Fragaria vesca</i> L.	Fruit	Photoprotection.
Tea	<i>Camellia sinensis</i> (L.) Kuntze	Leaf	Common ingredient of anti-age formulations and products influencing micro vessel system.
Thyme	<i>Thymus vulgaris</i> L.	Leaf	The thyme extracts possess bactericidal, bacteriostatic and fungicidal effect against one of the most frequent microorganisms in cosmetic products.
Til	<i>Sesamum indicum</i> L.	Seed	Seed extract is used in ointments for chronic skin disease.
Turmeric	<i>Curcuma longa</i> L.	Rhizome	Antioxidants
Vasaca	<i>Adhatoda vasica</i> Nees	Leaf	Fresh leaves juice is used for skin affection and control of scabies.
Watercress	<i>Nasturtium officinale</i> R.Br.	Seed, Flower	Improves skin and hair health
Water lettuce	<i>Pistia stratiotes</i> L.	Leaf	Leaves extract is applied to control chronic skin disorders.
White lily	<i>Lilium candidum</i> L.	Flower	Improves skin, anti-aging

Cosmetics may have multiple forms, uses and exposure scenarios, and metals contained in them can cause local skin problems but also systemic effects after their absorption via the skin or ingestion as most of these metals are toxic [19-21]. Metal traces can be detected in most cosmetic products as impurities, leading to direct exposure of a large number of individuals. The ever-improving sensitivity of analytical methods enables the detection of increasingly lower trace levels. Consequently, metal traces are more frequently and easily detected in cosmetic products, even when they are manufactured according to good manufacturing practices (GMP)[22]. Metal content in lipstick is an international health concern. This is because lipstick is the basic daily product that is included in face makeup application, in addition to face powder, foundations, eye shadows, and blush [23]. Lipstick is applied on the lips for beautification and looks attractive, but the price for these application women are priced with exposure to heavy metals contained in the lipstick. Lipsticks are containing heavy metals such as lead, nickel, aluminum, arsenic, cadmium, antimony, and chromium [24]. Moreover, heavy metals can be released by the metallic devices used during the manufacturing of products [25, 26].

Herbal cosmetics

Cosmetic products contain mixture of natural substances or manufactured substances and presented to consumers for cleansing, improving or altering the complexion, skin, hair and nail. Beauty preparations such as make-up and skin cream as well as grooming aids such as shampoo and deodorant come under cosmetic products. When herbs are used for their aromatic and medicinal value in cosmetics, they are known as herbal or green personal care products [27]. Major development of cosmetic use started in the last few decades of twentieth century. Older preparations were solely based on chemical ingredients and green or herbal cosmetics were hardly prepared. However, this new concept arrived as beauty solution contributed fast growth to the industry[27]. 5000 years old Ayurveda depicts role of plants as herbal medicines to treat various human health complications [28]. Because of its natural source and less side effect herbal medicines are becoming more and more popular both in developed and in developing countries. Traditional medicines use extracts from plants along with minerals and organic materials [29]. Indian traditional health care system Rasayana has been using herbal medicinal plants for over 1000 years [30] where practitioners experimented and formulated new recipes [31]. According to World Health Organization (WHO) 21,000 plants are being used having medicinal value. Out of these India contributed 2500 species of which 150 are of great commercial value. India being the largest producer of medicinal herbs is called Botanical garden of the world [31]. Indian indigenous alternative treatment systems like Ayurveda, Yoga, Unani, Siddha, Homeopathy and Naturopathy used herbal drugs for long in a safe manner and these systems have been used side-by-side with allopathy [32].

Why herbal cosmetics

Apart from having numerous health benefits [33-35], the constituents of herbal cosmetics provide nutrients to applied areas, moreover, they are safe [36] and they combine traditional systems with modern scientific approaches [37-39].

Plants used in herbal cosmetics

Considering the effect of synthetic cosmetics and importance of herbal cosmetics for human health and its future impact, a list is prepared mentioning the use of some medicinal plants as herbal cosmetics after Kapoor [14]; Chandrasekar *et al.* [7]; Kurele [40].

Conclusion

Stress is now days considered as a worst thing of the world. Stress may be in the form of mental, physical or biochemical, in any form it is constrain for growth of life. Even plants cannot tolerate the stress. In plants micronutrient in excess causes several physical and biochemical changes in plants. By using synthetic cosmetics humans are now under the constrain of heavy mental stress. People prefer natural food, herbal medicines and natural curing practices for healthy life. The usage of herbal cosmetics has been increased many folds in personal care system and there is a great demand for herbal cosmetics. All this happen due to excessive use of synthetic based products, synthetic chemicals, chemical dyes and their derived product in the last one and half century; their production and usage cause human health hazard with several side effects leading to numerous diseases. It also caused considerable environmental pollution and disturbed our eco-system [6].

Application of review: Review understand the effect of synthetic cosmetics and the overcome the problem with move to herbal cosmetics.

Review Category: Cosmetics

Abbreviations:

UV-Ultra violet; CDC-Centers for Disease Control and Prevention; GMP-good manufacturing practices; WHO- world health organization.

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