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Review Article

Review on Cosmetic Value of *Aloe vera*

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ABSTRACT

Aloe vera is very much important and effective plant with so many health applications. It acts as a natural fighter against various types of Infection, an important and effective anti-oxidant, helps in treating all digestion related problems, heartburns, arthritis, stress, kidneystone, skin burns, diabetes, rheumatism, pain, asthma, cancer, AIDS, Nutraceutical, moisturizer, Immunomodulator, protection of skin from UV-A and UV-B rays and wound healing property. Generally, topical application of *Aloe vera* preparations has been regarded as safe. It has been known and used from centuries for its health, beauty, medicinal and skin care properties. *Aloe Vera* contains 75potentially active constituents such as vitamins, enzymes, minerals, sugars, lignin, saponins, salicylic acid and amino acids. The plant has triangular, fleshy leaves with serrated edges, yellow tubular flowers and fruits that contains number of seeds. The use of *Aloe vera* has increased very fast in the field of cosmetology and a wide variety of products contains *Aloe vera* in one form or other for delivering a specific activity. Various cosmetic values of aloe are reviewed in this article.

Keywords: *Aloe vera*; Cosmetic use; Skincare; Moisturiser; UV radiation

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INTRODUCTION

Aloe genus is a succulent herb which has maximum 100 cm height which matures in 5-6 years belonging to family-Alliaceae *Aloe vera* (L) Burm. F. syn. *Aloe barbadensis* Miller, is biologically more active compare to other species of Aloe [1-3]. Medicinal plants are the best source for obtaining a variety of drugs according to WHO [4]. Centre of origin of plants is Southern &Eastern Africa along the upper Nile in the Sudan, the plant is cultivated in India, Haiti, South Africa, U.S.A & Venezuela [5, 6] and the fine quality of aloe is grown in desert of California and Ind. The plant can survive in hot temperature of 40°C. *Aloe vera* is a colourless, mucilage nous gel obtained from the parenchymatous cells in fresh leaves of *A. vera* (L). Burmf. (Liliaceae) also known as *Aloe barbadensis*[7].

Aloe vera is a plant which has green, dagger shaped leaves that are fleshy, tapering, spiny, marinated& filled with a clear viscous gel [8].In Ayurvedic medicines as well as traditional medicine of India, *Aloe vera* has multiple uses inclusive of laxative, anthelmintic, hemorrhoid remedy &uterine stimulant. It is used topically, as in combination with liquorice root, to treat eczema or psoriasis [9]. *Aloe vera* contains more than 75 nutrients& 200 active compounds, including vitamins, enzymes, minerals, sugars, lignin, anthraquinones, saponins, salicylic acid & amino acid [10]. *Aloe vera* show its analgesic, anti-inflammatory, wound healing, immune modulating and anti-tumour activities as well as antiviral, antibacterial & antifungal properties [11]. *Aloe vera* products are used mainly for cosmetics, pharmaceutical as well as food industries [12]. These aloe species are currently listed in the Pharmacopoeia of many countries in the forms of plain aloe [10].Today *Aloe vera* gel is an active ingredient in hundreds of skin lotions, sun block cosmetics and moisturising creams [13].

TAXONOMY

Kingdom-Plantae
Order -Asparagales
Division-Spermatophyte
Subdivision- Angiospermae
Class –Monocotyledonous
Genus –Aloe
Species – Barbadensis. Mill [14].

MORPHOLOGY

Odour – None
Taste – Bitter
Size & Shape – plant growing to 60-100 cm inlance shaped with elongated strands
Flower – yellow tubular in 25 -30 cm in a slender loose statement
Colour –Leaves are green to grey – green flower
Root – Root fibers can reach upto 30 – 40 cm in length [15].

COSMETIC VALUE OF *Aloe vera*

Aloe vera is used for soothing and keeping the skin moist and it help to avoid flaky scalp and skin in harsh and dry weather [16]. It mixed with selected essential oils, it makes as excellent skin smoothening moisturiser, sunblock lotion and a whole range of beauty products. Due to its soothing and cooling properties Maharishi Ayurveda recommends *Aloe vera* for a number of skin problems [17].*Aloe vera* extracts have antibacterial and antifungal activities, which help in the treatment of minor skin infections such as boils and benign of skin cysts [18]. Currently the plant is widely used in skin care cosmetics and nutraceuticals [19]. *Aloe vera* gel has been reported to have a protective effect against the radiation which may damage to the skin [20, 21].

Aloe vera has unique, anti-aging formulations which are helps to maintain healthy, fresh looking skin. The Aloe plants healing powers which are most widely used to treat skin conditions. These conditions include psoriasis, shingles & others associated with itching in addition of cuts, abrasions and burns are said to benefit from topically applying the gel to the affected areas. The uses of *A. vera* that is its efficacy from its stem which containing active ingredients. These substances which has anti-inflammatory properties, which may explain why it has been reported to minimize the pain and swelling associated with itches and burns. Its cosmetic action is anti-inflammatory, soothing, toning, moisturizing and protective the skin [22, 23].

During the end of the seventies *A. vera* gel becoming very popular in the USA as a moisturizing ingredient in cosmetics and its popularity has grown to such an unexpected extent and now it is the most widely used ingredient in skin care products and can be found in the ingredient list of virtually all cosmetic products. Even dog and cat creams contains Aloe and now you can buy tissue impregnated with Aloe in the Far East. Aloe is a popular ingredient in skin care products as well as in health drinks also. Now its popularity is also coming to Europe where more & better known companies have started to add Aloe in their established products and also introduced special *A. vera* products. The great success of Aloe that use in nutritional foods and cosmetics is due to the proper stabilizing procedures, various processors to store and ship the *Aloe vera* Gel without fear of spoilage throughout the market places in the world [24].

Aloe will be proven that, such attributes are as moisturizing and penetrating properties are known; the gel stimulates the cell growth and it enhances the restoration of damaged skin. It moisturizes the skin properly because it has a water holding capacity. It also gives the cooling effect. It protects the mucous membrane of the stomach especially when irritated or damaged by used as a drink [25]. *A. vera* Gel consists of 99.3% of water. The remaining 0.7% of the solids that consists of a large amount of polysaccharides of glucose and mannose type. Together with the amino acids and enzymes in the gel they give the special properties as a skin care product [26].

Aloin and its gel are used as skin tonic to prevent pimples. *A. Vera* is also used for soothing and keeping the skin moist which help to avoid flaky scalp and skin in harsh and dry weather. It also used as a moisturizer for oily skin. *A. vera* promotes the skin ability to hydrate itself, to remove the dead skin cells and it has effective penetrating ability that helps to transport healthy substances through the skin. Each of these factors makes *A. vera* as an ideal and important ingredient in cosmetics and dermatological products. In fact, now a day, *A. Vera* is one of the most important ingredients in the cosmetic industry, being utilised over the 95% of the dermatologically valuable extracts which are manufactured worldwide. The Aloe sugars are also used in various moisturizing preparations. Mixed with essential oils which are selected, it makes an excellent sun block lotion, skin smoothening moisturizer and a whole range of beauty products. Because of its soothing and cooling qualities Ayurveda recommends it for a number of skin problems. *A. vera* extracts have antifungal and antibacterial activities which may help in the diagnosis of minor skin infections, such as boils and benign skin cysts and to inhibit the growth of fungi that cause tine [27].

Aloe vera has been utilizes since ancient times for healing infections and burns. However with the improvement in cosmetology; it has been proven that *Aloe vera* is a very important component of cosmetics. It contains almost 20 amino acids, minerals like magnesium, sodium, calcium and in sufficient quantities, polysaccharides, enzymes, vitamins, nitrogen and other components that make it a miracle beauty herb. Some of the most important applications of *Aloe vera* in cosmetology are being explained here.

PIGMENTATION

The melanin pigment which is responsible for the colour of the human skin .Hyperpigmentation is a situation in which large amount of melanin is synthesized. This generally happens due to more exposure of the skin to the sun. In reaction to UV rays in sunbeams, the skin cells called melanocytes initiate to synthesize melanin. This higher amount of synthesis of melanin is responsible for the emergence of darkened patches on the skin. *Aloe vera* has the property of diminishing the pigmentation and dark spots on face [28, 29].

SKIN ERUPTION

Aloe vera containing creams are useful for skin eruptions. *Aloe vera* gel has been proven to be the important remedy for burns and wounds. Actually cellular regeneration antifungal and antibacterial activities of *Aloe vera* make it useful for skin eruptions [30, 31].

SEBORRHEIC DERMATITIS (DANDRUFF)

Aloe vera lotion is useful for treating seborrheic dermatitis. It is also an excellent treatment for the hair care. *Aloe vera* hair shampoos and conditioners are used widely for the purpose [32, 33].

MOISTURIZING AND ANTI-AGING EFFECT

Aloe is rich in mucopolysaccharide which helps in binding moisture to the skin. Aloe increases fibroblasts to produce collagen and elastin fibers thereby making the skin more elastic and lower wrinkled. It also has cohesive effects on the superficial flaking epidermal cells by sticking them together, which softs the skin. In Aloe gels, amino acids present also soften hardened skin cells. Zinc present in the gels act as an astringent and tightens the pores. *Aloe vera* gel gloves improves the skin integrity, lowers the appearance of fine wrinkles and erythema in the treatment of dry skin associated with occupational exposure indicating its moisturizing effect [34].

EFFECT ON SKIN EXPOSURE TO UV AND GAMMA RADIATION

Aloe vera gel has been proven to have a protective effect against radiation to the skin [20, 21].Though exact role is unknown, but following the administration of *Aloe vera* gel metallothionein ,an antioxidant protein is generated in the skin, which scavenges free radicals and superoxide dismutase which prevents suppression of glutathione peroxidase ,the antioxidant enzymes in the skin .Studies reveal that administration of Aloe prevents UV induced suppression of delayed type hypersensitivity by reducing the release and production of skin keratinocyte derived immunosuppressive cytokines such as interleukin-10(IL-10)[35].

CONCLUSION

Aloe vera considered as 'Wonder plant'. It is a specific plant, it shows various types of activities in medical era, so it plays an important role in pharmaceutical field. Fresh aloe gel from the inner

central plant (parenchyma)of the leaf often has a very good effect in acne, pimples, eczema and other skin problems, burns due to excessive heat, sun exposure and in the treatment of radiation dermatitis on skin. *Aloe vera* being as a beauty enhancer, strong moisturising capacity, maintain healthy fresh looking skin.

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