



A Short Review on Aloe-Vera

Danish Bashir, Mr. Pankaj Chasta, Tanya Sharma

UG Student, HOD (Pharmaceutical Sciences)
Mewar University

ABSTRACT

Nowadays, aloe vera, a natural substance, is widely employed in the cosmetics industry. Even if there are a number of indications for its use, controlled trials are necessary to ascertain its true effectiveness. Since ancient times, people have utilized the aloe vera plant for its skin care, cosmetic, medical, and health benefits. The plant aloe vera is employed in dermatology nowadays for a number of reasons. Gel from aloe plant leaves is called aloe vera. It has been used for skin softening and healing for thousands of years. Aloe has traditionally been used in folk medicine to cure a variety of illnesses, such as skin conditions and constipation. Current studies on the health benefits of aloe vera are conflicting; some suggest it may cause cancer in lab animals.

Key words: advantages of aloe vera, Aloe vera plant, Gel of aloe vera, Aloe vera skincare Uses of aloe vera Aloe vera extract, For hair, aloe vera Aloe vera to treat sunburn The therapeutic benefits of aloe vera

Introduction

For generations, aloe vera has been utilized in traditional medicine due to its well-known medicinal qualities. Texts such as the Bible make mention to its use, which has been known since ancient Egypt. In the 1930s, the plant's therapeutic use became more popular, especially for the treatment of burns. Although the majority of aloe plants are not harmful, the most powerful and extensively grown species is aloe vera. It started in Africa and expanded throughout the world, while its natural range is unknown. Aloe vera is a stemless shrub with thick, triangular leaves that can be brilliant green or grey-green in hue. A golden sap, an exterior thick layer, and an interior gel make up the leaves. The gel stores water and energy for the plant and makes up a sizable section of the leaf. Aloe vera comes in two primary forms: gel and latex.

When utilizing the entire leaf, it can be difficult to distinguish between the latex and the gel since the latex is a bitter yellow exudate and the gel is a colorless, tasteless pulp that contains water, sugars, and enzymes, although the latex has larger quantities of latex components.

History

In many cultures, including Greece, Egypt, India, Mexico, Japan, and China, aloe vera has long been used extensively in medicine. Prominent individuals including Christopher Columbus, Alexander the Great, Cleopatra, and Nefertiti understood its therapeutic benefits and used it to cure wounds and as part of beauty regimens. (3). In 1655, John Goodyew translated Dioscorides' medical work, *De Materia Medica*, which is when aloe vera was first mentioned in English. Its promise in medical applications acquired recognition in the mid-1930s with the successful treatment of severe radiation dermatitis, despite the fact that it was first used as a laxative in the United States in the early 1800s. The thick, fleshy leaves of the stemless succulent aloe vera range in color from green to greygreen and are serrated on the edges with tiny white teeth. The plant bears tall spikes of pendulous yellow tubular blooms throughout the summer. A favorable symbiotic relationship that improves its access to mineral resources in the soil is also formed by aloe vera through the formation of arbuscular mycorrhiza.

Anatomy

Bright yellow tubular blooms, fruits with many seeds, and triangular, fleshy leaves with serrated edges are all characteristics of the amazing Aloe vera plant. The actual leaves are made up of three separate layers. The clear gel in the inner layer is primarily made up of water (about 99%) and contains vital elements such as vitamins, glucomannans, amino acids, lipids, and sterols. The intermediate layer is made up of latex, a bitter yellow sap that contains glycosides and anthraquinones. The outermost layer, referred to as the rind, is a protective barrier made up of 15–20 cells that are in charge of protein and carbohydrate production.

Lastly, the outer layer, referred to as the rind, is a protective barrier made up of 15–20 cells that are in charge of protein and carbohydrate breakdown. Vascular bundles found in the rind are in charge of carrying materials like water (xylem) and starch (phloem). A remarkable variety of active ingredients

can be found in aloe vera, including 75 potentially active ingredients such as vitamins, enzymes, minerals, carbohydrates, lignin, saponins, salicylic acids, and amino acids.

Biological components

Bioactive compounds with a range of physiological actions that can work alone or in concert are present in aloe vera latex and gel. Aloe vera composition depends on a number of variables, including climate, location, growing circumstances, plant age, and processing techniques. (7) Anthraquinones, phenolic compounds present in the latex of aloe vera, are its main constituents. These compounds have strong laxative, antiviral, analgesic, and antibacterial qualities. But anthraquinones can also be poisonous, mutagenic, and promote tumor growth. Conversely, aloe vera gel is a rich source of polysaccharides, the most active of which is acemannan. Acemannan has demonstrated antiviral, antibacterial, wound-healing, immunostimulatory, radiation-protective, and hematopoietic properties.

Mechanism of action

Aloe vera is used extensively in food, medicine, and cosmetics. Because of their calming and moisturizing qualities, aloe vera gel, latex, and whole leaf extract are used in cosmetics. They are present in many different products, including shampoos, cleansers, moisturizers, sun lotions, and toothpaste. Aloe vera usually contains between 1 to 98% of the ingredients in cosmetics. Aloe vera contains anthraquinones, which should not be used in cosmetics at concentrations higher than 50 ppm to prevent phototoxicity. Aloe vera gel has been authorized for external use as a cosmetic ingredient by the US Food and Drug Administration (FDA). Aloe vera is utilized in the food sector for functional foods and drinks, such as tea and yogurt. By maintaining useful chemicals like phenolics and ascorbic acid, aloe vera gel can also be applied as an edible coating to fresh food, extending their safety and quality. Due to aloe vera's antibacterial qualities, foodborne diseases and spoiling are prevented by the proliferation of microorganisms. It can serve as a safe and healthy substitute for artificial preservatives. Aloe vera has been used medicinally to treat wounds because of its polysaccharides and gibberellins, a growth hormone that encourages the production of collagen and elastin. Aloe vera has a strong ability for healing since it contains mucopolysaccharides (MPS). Furthermore, aloe vera has demonstrated efficacy in preventing and curing scar tissue following skin injuries, possibly as a result of the amino acids it contains that are essential for the development of new cells. Aloe vera has several positive impacts on the body and skin. Its enzymes aid in the healing process by encouraging the deep skin layers to regenerate. Aloe vera contains salicylic acid, which has analgesic and anti-inflammatory qualities. It also inhibits prostaglandin synthesis, which makes it beneficial for arthritis and joint-related conditions. Although lectins may contribute to aloe's therapeutic benefits for burns and ulcers, aloe polysaccharides boost immune function. Herpes simplex, psoriasis, and mouth ulcers have all been shown to respond well to aloe vera. It also guards against stomach ulcers.

Medicinal use

Aloe vera's ability to heal wounds has been shown to be amazing. By increasing the production of collagen and elastin, the polysaccharides and gibberellins found in aloe vera can lessen wrinkles and speed up the healing process. Mucopolysaccharides (MPS) are found in aloe vera in considerable amounts, with 10,000–20,000 MPS per liter. Aloe vera's great healing potential is mostly due to these MPS. (19) Aloe vera has demonstrated efficacy not just in wound healing but also in treating scar tissue and halting the production of scars following skin injury. Aloe vera aids in the healing process by encouraging the production of collagen and elastin and increasing skin cell renewal, which lessens the visibility of scars and promotes healthier skin. The benefits of aloe vera for the human body are numerous and include anti-inflammatory, immune-boosting, ulcer-treating, reducing skin exposure to UV and X-rays, antidiabetic, antioxidant, laxative, antibacterial, antifungal, and possibly antiviral and antitumor effects. Salicylic acid, which is present in aloe vera, gives it analgesic and anti-inflammatory effects. Because it prevents arachidonic acid from being converted into prostaglandins, it can help reduce the symptoms of arthritis and other joint-related issues. Polysaccharides from aloe vera help to boost immunity. The precise mechanisms by which aloe vera aids in the healing of first- to second-degree burns are not fully understood. One of aloe vera's constituents, lectin, is thought to contribute to its healing properties. Both direct and indirect effects are thought to be responsible for aloe vera's antiviral and anticancer properties. Aloe vera boosts the immune system indirectly, but anthraquinones may have direct benefits. To obtain definitive proof for the use of aloe vera in the treatment of cancer or HIV-AIDS, clinical trials are still being conducted. Research on pathogen-free rats has revealed encouraging outcomes for age-related illnesses, suggesting that aloe vera might also be helpful in this situation. It is crucial to remember that even though aloe vera has shown a number of possible health benefits, more investigation and clinical testing are required to completely comprehend its mechanisms of action and to confirm its validity and safety for particular ailments.

Conclusion

In conclusion, Indeed, aloe vera is a unique plant with many therapeutic and aesthetic uses. Its gel includes healthy chemicals that have many positive effects on human health and well-being. Cuts, insect stings, bruises, poison ivy, and eczema are just a few of the skin conditions that the herb has historically been used to cure. It is renowned for its anti-aging and moisturizing qualities, which assist to maintain the skin's hydration and youthful appearance. Apart from its impact on the skin, aloe vera has been investigated for possible health advantages when consumed. It is useful in reducing the symptoms of diseases like diabetes and cancer since it is thought to have anti-inflammatory qualities. Aloe vera's many qualities and possible advantages also make it useful in the cosmetic industry.

In light of the fact that aloe vera is a natural gift from nature, it is important to use it with appreciation and knowledge. It is advised to conduct a patch test and get advice from medical specialists to guarantee its safe and suitable use, particularly if you are taking medication or have pre-existing medical issues. Aloe vera is an all-around beneficial and adaptable plant that is still valued for its cosmetic and therapeutic uses. Because of its potential advantages for wound healing, intestinal health, skincare, and general well-being, it is a beloved natural remedy.

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