



Aloe Vera: A Value Added Product

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Abstract

A very important and practical plant is aloe vera. Due to its incredible medicinal qualities, aloe vera (an herb) is frequently utilised in Ayurvedic, homoeopathic, and allopathic medicine. It is a herb that is frequently called Barbados or Curaçao Aloe and has a long history of use in many cultures. One of the most abundant natural sources of health for people is this plant. Researchers from several fields have found that consuming Aloe Vera in food or drink lowers blood glucose levels, which is beneficial for managing diabetes. Aloe vera has anti-inflammatory and antibacterial qualities that assist treat gum and mouth issues. To rub the gums, it can be used in toothpaste or gel form. It functions as a powerful natural antibiotic against all types of illnesses. Aloe vera is a natural product that is widely used in the field of cosmetology today. Although there are different indications for its use, restricted studies are needed to determine its true usefulness. The aloe vera plant, its history, properties, mechanism of action, pharmacological activity and clinical use are briefly summarized in this article.

Key words: Aloe Vera, natural sources, skin disorders, burn healing, sunburn.

A highly useful and significant herb in many other plants is aloe vera. The Arabic word "Alloeh," which means "shining bitter substance," is where the name Aloe Vera originates. Vera is Latin for "truth," while Greek scientists believed that aloe vera was a cure-all. Aloe was referred to as "the herb of immortality" by the Egyptians 2000 years ago. The aloe vera plant has many uses in dermatology. Numerous vitamins and minerals, amino acids, natural sugars, and compounds that may be anti-inflammatory and antibacterial can all be found in aloe vera. For both humans and animals, it has pharmacological and therapeutic benefits. Aloe vera is additionally applied medicinally in a number of our civilizations. This plant's many parts have been effective in treating a variety of health issues. Aloe is soothing, emollient, and delicate. Although it is also used to treat skin cancer, it is most frequently used for burns and minor cuts. It is particularly effective for sunburns. Poison ivy rashes can be treated with aloe, which also works to draw out the infection. The most significant and valuable plant in the creation of herbal medicines and other preparations that offer beneficial and useful components is aloe vera. By minimising wrinkles, curing acne, renewing, and giving the skin a youthful aspect, it offers the skin a healthy and supple appearance.

I. INTRODUCTION

Aloe Vera's qualities

Family	Liliaceae
Botanical Name	Aloe vera, aloe barbados, aloe indica, and other aloe species
Popular Name	Aloe, Aloe Vera, Indian Alces, Kumari, Ghirita, Gawarpaltra, and Barbados aloe are some common names
Acids	Acids are antibacterial, anti-helminthic (anti-parasitic worms), and promote the healing of wounds and skin tissue
Amino Acids	It needed to be repaired and growth. Twenty of the twenty-two are present in aloe vera requisite amino acids.



Enzymes	It works as catalysts to speed up chemical reactions.
Lectin -	anti-tumour properties
Minerals	Significant amounts of the minerals calcium, magnesium, potassium, and sodium are all present.

History of the use of Aloe Vera species

Date	Description/use of <i>Aloe</i>
4000 B.C	Aloe, known in ancient Egypt as the "sanctuary plant of immortality," is shown in Egyptian temples. Pharaohs received it as a farewell gift.
2200 B.C.	Aloe's medicinal properties are first mentioned in Sumerian clay tablets.
1550 B.C.	The Egyptian Ebers Papyrus outlines the therapeutic properties of aloe for both internal and exterior usage.
356-323 B.C.	Alexander the Great used it to cure his soldiers' wounds. Socotra Island has been asked by Alexander the Great to secure the trade in <i>A. perryi</i> .
51 B.C.	Ancient Egypt referred to it as "Cleopatra's herb" because of its use in cosmetics.
27 B.C.- 14 A.C.	Under Augustus, aloe is introduced to Greek and Roman medicine
First Century A.C.	The substance used to anoint the body of Jesus Christ is referred to as "aloes" in the Bible.
41-68	The Herbal Pharmacopeia's "De Materia Medica" contains the first comprehensive description on the pharmacological properties of aloe.
23-129	Aloe was extensively used both internally and topically, particularly in leprosy lesions, according to Pliny the Elder's "Naturalis Historica."
618-907	Aloe is believed to be used orally in China to treat dermatitis.
960-1279	The leaves of aloe vera are used to treat fever, sinusitis, and skin conditions.
14-16 Centuries	Aloe is a plant that has been used as a purgative and a topical medication for wounds and a number of dermatological conditions in both English and European medicine.
1492	Christopher Columbus brought aloe to the New World
1650-1742	Aloe was first brought to London and was listed as "Barbados aloe" in the London Pharmacopeia.
1720	Carl von Linné is the inventor of the botanical term <i>Aloe vera</i> .
1768	<i>Aloe vera</i> is recognized by Nicolaas Laurens Burman as a distinct species.
1810-1820	United States Pharmacopoeia (U.S.P.) lists <i>A. vera</i> formulations as a purgative and skin protector.
1851	Smith and Smith, chemists from Edinburgh, extract <i>Aloe</i> contains a cathartic component that Edinburgh pharmacists Smith & Smith extract and call aloin.
1867	The British Pharmacopeia now includes "juice" from <i>A. barbadensis</i> (<i>A. vera</i>).
1912	Florida is where the first <i>A. vera</i> commercial culture emerges (USA).
1935	<i>Aloe vera</i> was described by Collins & Collins (1935) as a treatment for radiation burns and as having potential efficacy for a number of dermatological issues.
1959	<i>Aloe</i> is listed as a dietary supplement by the US FDA.
1975	European Pharmacopeia now includes aloe "juice."
Present	formulations of <i>A. vera</i> that have received therapeutic use certification from Australia, Canada, India, Korea, and many other nations.

.Anatomy of Aloe Vera

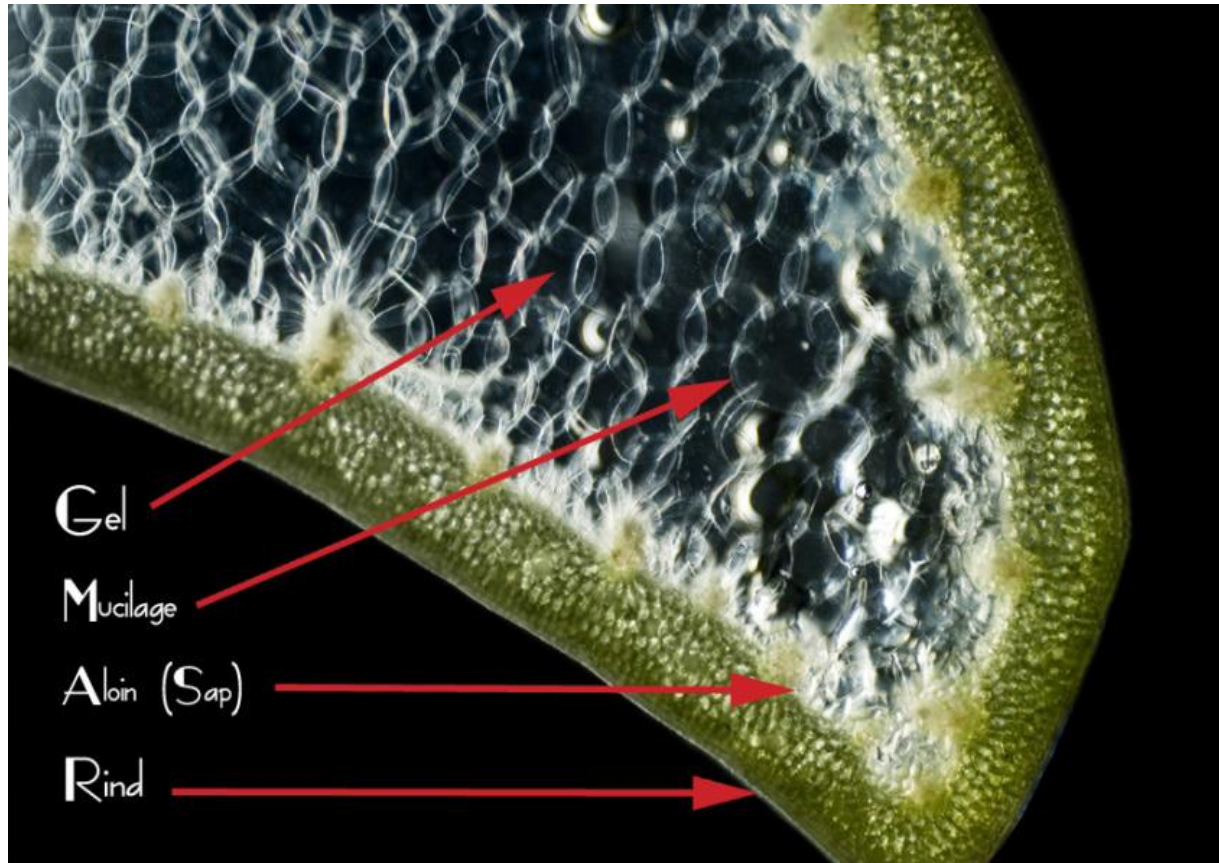
The plant bears yellow tubular flowers, fruits with many seeds, and triangular, fleshy leaves with jagged edges. Every sheet has three layers:

1) An internal clear gel made of glucomannans, amino acids, lipids, sterols, and vitamins; the remaining 1% is water, making up 99 percent of the gel.



2) The middle layer of latex, which is composed of glycosides and anthraquinones and is a bitter yellow sap.

3) Cortex, an outer layer of 15-20 cells that serves as a protective layer and produces proteins and carbs. Vascular bundles located inside the bark are in charge of moving materials like water.



Three layers of *A. vera* leaf http://www.aloeveragarden.com/images/aloe_leaf_description.jpg

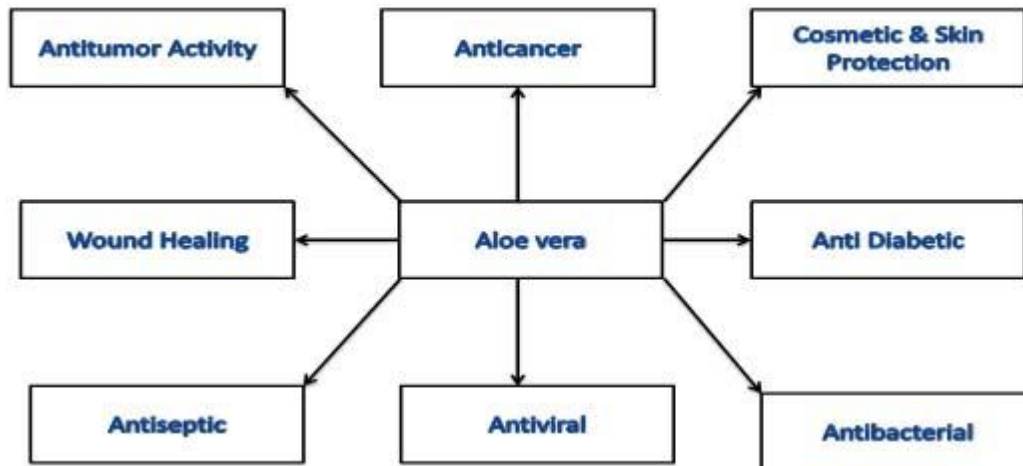
Cultivation and Collection

There are more than 250 species of aloe mature around the world. It is a very short stemmed plant growing to 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. The flowers are produced on a spike up to 90 cm tall, each flower pendulous, with yellow tubular corolla 2-3 cm long. The tissue in the center of the aloe leaf contains a gel which yields aloe gel or *Aloe vera* gel. The *Aloe vera* plant

is grown in warm tropical territories and cannot survive solidifying temperatures. It is an evergreen perpetual developing to 0.8 m by 1 m at a slow rate. The plants incline toward light (sandy) and medium (loamy) soil requires all around depleted soil can develop in healthfully poor soil. The plant inclines toward corrosive, nonpartisan and essential (basic) soil. It can't develop in shade. It requires dry or clammy soil and can endure dry spell. They are xerophytic plant. It can be proliferated by seed.



Medicinal utilities of *Aloe vera* (Sahu *et al.*, 2013)



Pharmacological activity of Aloe Vera

The therapeutic cases made about Aloe vera, as with various herbs and plants, are eternal.

1. Teeth and gums

Aloe vera in highly effective dental gels is as reasonable as toothpaste in the fight against cavities.

2. Wound healing

The regenerative properties of Aloe vera gel have been attributed to mannose-6-phosphate.

3. Antidiabetic

Five Aloe vera phytosterols, lophenol, 24-methyllophenol, 24-ethyl-lophenol, cycloartanol, and 24-methylenecycloartanol have shown adverse effects on diabetic mice in type 2 diabetic mice.

4. Anti-inflammatory action

The anti-inflammatory activity of aloe vera gel has been revealed by various in vitro and in vivo studies, which assume bradykinase movements of the body.

5. Antitumor activity

Various glycoproteins are available in Aloe vera. Anti-tumor and anti-ulcer affect and create the expansion of normal human dermal cells.

Medical use

Aloe vera is anthelmintic, cathartic, carminative, repellent, depurative, diuretic, stomachic and emmenagogue. The juice is used as part of a healthy

skin recipe, dyspepsia, amenorrhea, smoldering, colic, hyperdenosis, hepatopathy, splenopathy, obstruction, range, menorrhoea, stomach, tumors, dropsy, sciatica, lumbago and flatulence. Aloe vera gel is very useful for ulcerative colitis and pressure ulcers.

1. Anticancer properties

Aloe vera juice allows the body to recover from the discomforts caused by radiation and chemotherapy, which destroy the strong healthy and safe invulnerable cells that are the basis for recovery. Aloe vera emodin, an anthraquinone, can suffocate or control the progress of undermining or inhibit and suppress the development of threatening growth that causes cells that make it hostile to antineoplastic properties.

2. Anti-ulcer activity

This study was conducted to select the effects of Aloe vera on indomethacin-activated ulcers in rats. Aloe vera has demonstrated demonstrably basic anti-ulcer activity commensurate with the standard medicine of omeprazole. The mean ulcer records of the two drugs are shaped as statically basic. The results thus indicated the threat of ulcerogenic development of aloe vera. However, the cellular frameworks for these activities remain established.

3. Antiseptic



The sterile properties of Aloe Vera are the result of the proximity of six cleanliness experts, especially lupeol, salicylic destructive, urea nitrogen, cinnamon destructive, phenols and sulfur. These compounds have an inhibitory effect on parasites, organisms and diseases. Although a large portion of these uses are engrossing, controlled studies are critical to choose its practicality in all diseases.

4. Anti-inflammatory

Aloe Vera is an effective medicinal plant in the form of herbal medicines. Suppressed cyclooxygenase reduces the production of prostaglandin E2 from arachidonic caustic, a new soothing compound called Cglucosyl chromone was eliminated from the gel extracts.

5. Antibacterial activity

Aloe vera gel was bactericidal against pseudomonas aeruginosa, and acemannan prevented it from adhering firmly to human lung epithelial cells in a monolayer society. And she saw to it that the preparation of Aloe vera gel destroyed the improvement of the development of Candida albicans. The gel contains 99.3% water, the remaining 0.7% is a solid substance with starches forming the sweeping parts. concentrated Aloe leaf concentrates are used as a diuretic and as a treatment for hemorrhoids.

6. Antifungal activity

Refined aloe vera gel was reported to suppress the growth of the fungus albicans. Purified aloe proteins have been found to exhibit potent antifungal activity against candida paraprilois, candida krusei, and candida albicans.

7. Chronotropic activity

Through chronotropic (heart rate) effects, the heart rate is moderated so that the diastolic period (the time between actual firm compressions [systolic period] is longer. In the middle of the diastolic period, the heart chambers are filled with blood, ready for the next beat. Be that as it may, it is generally just as essential that this is the time when the heart relaxes and acquires its own sustenance.

8. Anti diabetic activity

The primary limitation of the current clinical information about aloe vera gel is the small clinical studies that regularly require a thorough approach.

Several clinical studies are aimed to support the evaluation of the use of aloe vera gel from a number of disorders and in addition to help confirm the usual use of the plant extract.

9. Antioxidant activity

The purpose of this study was to quantify the capacity of Aloe vera liquid concentrate for oxidative damage and the expression of Anion Exchanger 1 (AE1, commonly called Band 3) in human erythrocytes introduced to the water-soluble free radical initiator 2, 2'-azobis-2-amidinopropano dihydrochloride (AAPH).

II. CONCLUSION

The herbal plant i.e. Aloe Vera is a specific plant, it shows different kinds of activities in the medical era. It also plays an important role in the pharmaceutical field. Aloe Vera and its preparation have been widely used as medicine since ancient times. Various researches have been conducted to prove the effectiveness of Aloe Vera in various health problems. The active ingredient hidden in its juicy leaves has the power to soothe human life and health in countless ways. As a miracle plant, Aloe Vera is characterized by being an antiseptic, anti-inflammatory agent, helps in the treatment of cancer and diabetes, and is a cosmetic field. Although there are many claims about the benefits of Aloe vera and its uses, it belongs to the Asphodelaceae family and is related to onions and asparagus. The genus Aloe is native to Africa, although many members of the genus are popular houseplants and can be found around the world. The most famous representative of the genus is Aloe Vera, known for its medicinal uses and applications. Although there are several common medical uses for Aloe Vera, the most common use of the plant is in the form of a topical gel. Gels made from aloe are used to treat burns and minor abrasions. Aloe Vera benefits range from calming inflammation, relieving pain, and reducing the likelihood of infection. Studies have also shown that regular use of Aloe Vera based gel will actually speed up the healing process of minor wounds and even severe burns. Thick leaves can be broken open and the moist open ends of the leaves can be rubbed on the burn or scraped directly. In industrial areas, the moisture from the aloe leaves is extracted and converted into the popular gel that most people are familiar with. In recent years, it has become more popular than ever, finding its way into lotions, beauty products, shampoos, lip balms, soaps and sunscreens.



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