



## Aloe vera: Characteristics, Medicinal Value and Value Added Products

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For thousands of years, aloe vera, a plant that resembles a cactus, has been utilized in traditional medicine. The Aloe vera plant has been used for thousands of years to treat a range of ailments, including burns, wounds, skin irritations, and constipation. It grows in subtropical and tropical climates, including South Africa, Latin America, and the Caribbean .



### Introduction

<b>Scientific Name</b>	: <i>Aloe barbadensis</i> Miller
<b>Family</b>	: Asphodelaceae (formerly Liliaceae)
<b>Chromosome Number</b>	: 2n = 14

Aloe vera, or *Aloe barbadensis* Miller, is a type of succulent plant. It is indigenous to Africa and is grown all over the world for culinary, cosmetic, and medicinal purposes. Known for its gel-filled leaves, aloe vera has been around for 4,000 years. Wounds, stomach problems, and skin ailments are all treated with it. The chemical makeup of aloe vera consists of minerals, vitamins, and aloin. Antioxidants, anti-inflammatory, and antibacterial qualities abound in it. The global market is worth billions of dollars, which supports export earnings and jobs. Many civilizations view aloe vera as a symbol of healing, prosperity, and good fortune. Aloe vera, which has more than 500 species, is the most commonly used and studied. Because of its advantages, it is a common natural treatment in both conventional and alternative medicine.

### Characteristics

#### Physical characteristics

1. Thick, green or bluish-green, meaty leaves
2. Leaves are pointed at the tip and have serrated edges.
3. The plant can reach heights of 2-3 feet and widths of 1-2 feet.
4. Water-storing succulent stems

#### Chemical characteristics

1. Minerals such as potassium, magnesium, and calcium.
2. Contains polysaccharides, enzymes, and amino acids
3. Contains substances that reduce inflammation, such as aloin and aloe-emodin

#### Medical properties

1. Reduces burns and skin irritations
2. Hydrates and moisturizes the skin
3. Has antioxidant and anti-inflammatory qualities
4. Promotes intestinal well-being
5. Strengthens the immune system

### Characteristics of Therapy

1. Addresses skin disorders (psoriasis, eczema, and acne)
2. Addresses digestive problems (IBS, constipation)
3. Promotes dental health (toothpaste, mouthwash)
4. Strengthens the immune system
5. Promotes relaxation and lessens tension

### Medicinal uses

Because of its therapeutic qualities, aloe vera has been utilized for generations, and new research keeps finding new applications for it. Aloe vera has the following specific therapeutic benefits:

**Healing of Skin and Wounds :** Relieves wounds, cuts, and burns. Encourages tissue healing and the production of collagen. Lessens scarring and inflammation. Treats psoriasis, acne, and eczema.

**Antioxidant and anti-inflammatory :** Lowers oxidative stress and inflammation , Prevents cytokines that promote inflammation , Guards against aging and cell damage , Strengthens the immune system

**Bioactive Substances :** Anthraquinone, or aloin , Anthraquinone, or aloe-emodin , B12, C, E, and A vitamins , Minerals (potassium, magnesium, and calcium) , Polysaccharides (aloeide, acemannan) .

**The immune system :** Promotes the development of immunological cells , Promotes the generation of cytokines Causes natural killer cells to become active , Encourages the treatment of cancer

**Administration and Dosage :** Topical: directly applied gel or cream to the skin , Oral: 400–1000 mg per day in the form of juice or pills , Injection: under a doctor’s supervision, for certain medical conditions

### Additional Uses for Medicines

Controls blood sugar and treats diabetes , Reduces the symptoms of menopause and menstrual cramps , Prevents osteoporosis and promotes bone health , Displays anti-aging qualities.

### Value added product

#### Cosmetic and Skincare Products

- Aloe vera gel creams: Moisturizing creams for skin hydration and soothing.
- Face masks and scrubs: Exfoliating and nourishing face masks and scrubs.
- Soaps and body washes: Gentle, moisturizing cleansers.
- Shampoos and conditioners: Nourishing hair care products.
- Lotions and moisturizers: Hydrating lotions for skin.
- Anti-aging creams and serums: Reduces fine lines, wrinkles, and skin aging.
- Sunscreen and after-sun care products: Protects skin from UV damage.

#### Pharmaceutical Products

- Aloe vera capsules and tablets: Dietary supplements for digestive health.
- Juice concentrates and powders: Convenient forms for consumption.
- Topical creams and ointments: Treats wounds, skin conditions, and inflammation.
- Oral health products: Mouthwashes, toothpaste for oral hygiene.
- Anti-inflammatory and antioxidant supplements: Supports immune function.

#### Food and beverages

- Aloe vera juice and drinks: Refreshing beverages with health benefits.
- Aloe vera tea: Herbal tea for digestive health.
- Aloe vera powder and supplements: Adds nutrition to food and beverages.
- Aloe vera-infused water: Flavored water with health benefits.
- Energy drinks and sports nutrition products: Enhances performance, recovery.

**Other Value-Added Products**

- Aloe vera-based cosmetics for animals: Pet care products.
- Aloe vera-based fertilizers and plant growth promoters: Plant nutrition.
- Aloe vera-based biodegradable plastics: Sustainable packaging.
- Aloe vera-based paper and textile products: Eco-friendly materials.
- Aloe vera-based pharmaceutical excipients: Ingredient in medications.

**Conclusion**

Aloe vera is a versatile and valuable medicinal plant with a rich history of traditional uses, backed by scientific research and evidence. Its unique blend of bioactive compounds, including aloin, aloe-emodin, vitamins, and minerals, contributes to its diverse therapeutic properties. Aloe vera is a remarkable medicinal plant, offering numerous benefits for human health, wellness, and the environment. Its potential continues to unfold, and further research and development will unlock its full therapeutic potential.