

Aloe Vera: The Potted Physician – A review

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Abstract: Aloe barbadensis Miller (True Aloe or Aloe Vera) is a perennial, succulent plant reaching a height of 80-100 cm. It has thick, fleshy leaves with serrated margins. The two major components in an Aloe Vera leaf are aloe gel (jelly like substance) present in the inner portion of the leaf and the aloe latex (bitter exudates) present just beneath the outer skin of the leaf. Aloe Vera gel has active constituents such as acids, amino acids, lipids, polysaccharides, minerals, enzymes, vitamins, lactates, salicylates and phenolics which are responsible for antiseptic, coagulant, cell growth stimulating, pain inhibiting, scar inhibiting, anti-inflammatory and astringent properties. Aloe latex contains anthraquinones which act as laxatives. Aloe Vera has many topical uses such as relief from burns, wounds, sunburns, insect bites, frost bites, herpes outbreaks, and various skin problems and in preventing scars. Oral uses include oxygenation of blood, removal of oxidative stress, lowering cholesterol and blood sugar, treatment of digestive disorders like ulcers, IBS and crohn's disease, nourishment of body with vitamins, minerals, amino acids and glyconutrients and relieving constipation. It is also the secret to healthy and flawless skin as it is anti inflammatory and also has moisturizing and cooling effects. It treats minor infections like acne, pigmentation, dryness and redness of the skin. It also helps in promoting natural growth of new hair follicles as well as the existing ones hence strengthening hair growth. Various Aloe Vera beauty products available in the market are Creams, Lotions, Scrubs, sunscreens, moisturizers, baby products dietary Supplements like dietary juices and dietary packs etc. It has some side effects in certain cases so one must consult a physician before using the products.

Keywords: Aloe barbadensis Miller, aloe gel, polysaccharides, anthraquinones.

I. INTRODUCTION

The History of Aloe Vera:

Aloes are historically linked to the ancient Egyptians (1500 B.C.)

Cleopatra was known to have used Aloe Vera to preserve her beauty. The Aloes are members of the Lily family (Liliaceus) and, therefore, are relatives of such common plants as tulips, Easter lilies, and Asparagus. Although there are around 400 species of Aloe, the Aloe barbadensis Miller (Aloe Vera or "true aloe") is a species of succulent plant which flourishes in warm and dry climates and to many people it looks like a cactus with fleshy thorny leaves.

What is Aloe Vera?

Aloe Vera is a species of Aloe, native to northern Africa. It is widely distributed in Africa, India, Nepal and other arid areas. It is a stem less or very short-stemmed succulent plant growing to 80-100 cm tall. A mature leaf is 7 to 10 cm across at the base, weighing 1.5 to 2 kg. The leaves are lanceolate, thick and fleshy, green to grey-green, with a serrated margin.

The flowers are produced on a spike, each flower pendulous, with a yellow tubular corolla 2 to 3 cm long.

Aloe Vera: the wonder plant:

Two basic products of Aloe Vera are:

1. Aloe Gel
2. Aloe Latex

Aloe Vera gel is the leaf pulp (jelly-like substance), extracted from the parenchyma tissue that makes up the inner portion of the aloe leaf. Aloe latex is a bitter exudates from the per cyclic tubules just underneath the outer skin of the Aloe Vera Leaf.

Aloe Vera juice is prepared in two ways:

1. Including the outer portion of leaf.
2. Excluding the outer portion of leaf.

Aloe gel has been used for topical treatment for minor wounds and burns and skin irritations for centuries. The gel is a mixture of antibiotic, coagulating agent, cell growth stimulator, astringent, pain inhibitor and scar inhibitor. Aloe Vera is often called the 'miracle plant' or 'the natural healer', 'the wonder plant', 'wand of heaven', 'the potted physician'.

II. THE FIRST-AID MIRACLE PLANT

It is a common first aid plant. Some may call it "Burn Plant" but the official name is Aloe Vera.

Growing Aloe Vera:

It can be planted indoors or outdoors, but will turn brown in harsh sunlight so one has to choose a location in indirect light. In severe cold, it will freeze, so it has to be protected from frost dangers. A wide planter is required for growing aloe Vera plants as the root system of aloe Vera plants is shallow and spreading. The pot should have a drainage hole for better drainage facility.

Active constituents of aloe Vera:

Aloe Vera contains an array of materials, including the following:

Acids - antimicrobial, anti-helminthic (anti-parasitic worms).

Amino acids - required for repair and growth. Aloe Vera contains around eighteen amino acids.

Enzymes - catalysts enabling chemical reactions to take place.

Lectins - anti-tumour effects.
Lipids - principle structural components of living cells.
Minerals - calcium, magnesium, potassium and sodium are all present in significant quantities.
Lactates and salicylates - analgesic properties.
Phenolics - mild antiseptics and antimicrobials.
Polysaccharides - Stimulate skin growth and repair.
Vitamins - contains 8 of the 13 recognized vitamins.
Aloe latex contains compounds known as **anthraquinones** that stimulate the activity of the gastrointestinal tract.

III. MEDICINAL USES OF ALOE VERA

Topical Uses

It treats burns from minor mishaps in the kitchen—from grease splatters or hot utensils, soothes and heals sunburns. Aloe contains cooling properties similar to menthol. It takes the sting or itch out of insect bites, reduce tissue damage from frostbite, help heal herpes outbreaks, swab over blisters for quick relief. It can be used as an antidote to allergic skin reactions, soothes Psoriasis, rosacea, eczema, prevent scarring and stretch marks. Shrink warts, remove eye makeup, and treat minor vaginal irritations.

Oral Uses

Lowers high cholesterol, boosts the oxygenation of your blood, eases inflammation and soothes arthritis pain, protects the body from oxidative stress. It prevents kidney stones and protects the body from oxalates in coffee and tea. It alkalizes the body, helping to balance overly acidic dietary habits. It cures ulcers, IBS, Crohn's disease and other digestive disorders. It reduces high blood pressure naturally, by treating the cause, not just the symptoms. It nourishes the body with minerals, vitamins, enzymes and glyconutrients. It ends constipation, stabilizes blood sugar and reduces triglycerides in diabetics, cures gum diseases. It functions as nature's own "sports drink" for electrolyte balance, making common sports drinks obsolete.

Aloe Vera: The Secret to Flawless Skin:

For years, Aloe Vera has helped men and women fight the aging process. Many celebrities have been using Aloe Vera to keep their skin soft and young. It has also been helpful for those with acne problems and scarring from acne.

Cosmetic uses of Aloe Vera Plant:

Aloe Vera can be used in the daily beauty routine. Aloe Vera products or aloe Vera gel straight from the plant can be used along with daily beauty regime to give better results.

Aloe Vera can be used in a Clay Pack, fruit Pack, as Moisturizing Pack (Aloe Vera when mixed with wheat germ oil or almond oil can be used as a moisturizing pack). Aloe Vera can be used in the daily beauty routine.

Aloe Vera for growing hair:

Aloe Vera has been prevalent and been used since ages for promoting hair growth. Aloe vera helps in promoting

natural growth of new hair follicles as well as the existing ones.

It is a natural remedy that helps in regulating rich blood supply to the roots of hair follicles present in the scalp so it helps in strengthening the hair.

Aloe Vera products:

Various Aloe Vera beauty products available are:

1. Body Conditioning Cream: To makes body skin smooth.
 2. Aloe Lotion: to give skin a glowing effect and freshness.
 3. Aloe Scrub: Aloe scrub for your face.
 4. Aloe Sunscreen: To protect from sun rays.
 5. Heat lotion: To protect from heat.
 6. Moisturizing Lotion: Acts as moisturizers for skin.
- Seasonal products:

Aloe lip gel: Aloe lip gel to give soothing effect in winters.

Aloe sun screen: To keep away from sun rays and heat.

Dietary Supplements:

Dietary juice: Aloe dietary juice

Available for stomach problems.

Diet packs: Various aloe diet packs are available to keep fit and disease free.

Herbal tea: Herbal tea is available free of caffeine.

Baby Care:

Baby bath: baby bath soap

Baby calming oil: Aloe oil for babies available to give them soothing feel.

Baby cream: Baby creams available in market.

Baby lotion: babies lotions for their soft skin.

Baby shampoo: baby shampoo to make their hair shine.

Veterinary Products:

Veterinary cream

Veterinary lotion: Veterinary lotions for skin.

Veterinary shampoo: Veterinary shampoo to make hair shine.

To obtain noticeable health benefits of Aloe Vera one needs to ask these questions when searching out Aloe Vera products:

One must exactly know how much pure aloe Vera is in the product? Or one is only buying expensive flavored water or powder with no guarantee of exactly what is in it?

Has the aloe Vera plant been grown organically without pesticides, herbicides and chemical fertilizers? Has the Aloe Vera been obtained from mature 4 year old Aloe barbadensis plants? (100% full potency is obtained only from mature plants.) Has the aloe Vera product been processed so as to retain 100% effectiveness...in other words, without heat, preservatives and colorants?

Aloe Vera Side Effects:

It has some side effects in certain cases so one must consult a physician before using the products.

Occasionally, some people develop a mild allergic reaction marked by itching or a rash, when used as topical treatment. Internals use of aloe Vera latex may turn the

urine red, and may also cause abdominal pain or cramps or even diarrhea when products containing anthraquinones are consumed.

Due to improper processing, aloe vera juice sometimes contains small quantities of the laxative compound in aloe latex. Because of the laxative effects of latex, overuse may cause electrolyte imbalances. Pregnant women should not take aloe latex because it may cause uterine contractions and trigger miscarriage. Aloe latex is not recommended for people with gastrointestinal illness, intestinal obstruction, appendicitis, or stomach pain.

Children and the elderly should not consume an aloe Vera latex laxative internally. Internal use of aloe Vera is not recommended for people taking digoxin, diuretics, topical or oral steroids, medication for arrhythmia (irregular heartbeats).

Aloe Vera research:

At present major Aloe Vera research is going on in the following fields:

Bad breath: To cure the dental and mouth problems.

Blood building: To increase the RBC count of blood.

Cancer: most research on curing cancer.

Weak bones: to help cure weak bones.

Typhoid: to cure typhoid.

HIV/AIDS: to cure HIV/AIDS.

Research is an ongoing process and Aloe Vera research is never ending. There can be some more booming news about medicinal abilities of Aloe Vera.

CONCLUSION

To conclude, Aloe Vera has made a mark in medicinal and cosmetic field due to its topical and oral uses and now attention is being focused to explore its potential in treatment of acute diseases like cancer and HIV/ AIDS.

REFERENCES

1. Steen amp, V., and M. J. Stewart. "Medicinal Applications and Toxicological Activities of Aloe Products." *Pharmaceutical Biology*. (2007): 411-420
2. Anonymous (2004). Aloe Vera. The ancient plant remedy for today's stressful life style. [http:// wholeleaf.com](http://wholeleaf.com)
3. Atherton Peter Dr (2002). Aloe Vera Myth or Medicine? (Positive Health Publications, <http://www.positivehealth.com/permit/Articles/Aloe%20Vera/atherton.htm>, Online.
4. Baker OT (1975). The Amazing Ancient to Modern Useful Plant Aloe Vera: Amazing Plant of the Magic Valley, (Lemon Grove, CA: R.Prevost). pp. 13-16.
5. A.D. Klein, N.S. penne's, Aloe Vera Journal of the American Academy of Dermatology 1988.
6. K. Eshun, Q.He, Aloe Vera: A valuable ingredient for the food, pharmaceutical and cosmetic industries – A review. *Crit. Rev. Food Sci. Nutr.* 2004, Vol 44, pp 91-96.
7. T. Reynolds, Aloe chemistry. In *Aloes The Genus Aloe*; Reynolds, T., Ed.; CRC Press: Boca Raton, 2004, pp 39-74.
8. Danhof, Aloe through the ages, volume, omnimedicus press, texas. report's Amen Osteopath Assc 1987 Vol 62, pp 731-735.
9. E. Galal, A. Kandil, R. Hegazy, M. Ghoroury, W. Gobran, Aloe Vera and gastrogenic ulceration. *J Res* 1975 Vol 7, pp73-77.
10. Danhof, Aloe through the ages, volume, omnimedicus press, texas. report's Amen Osteopath Assc 1987 Vol 62, pp 731-735.
11. Fan YS, et. al.: Protective effect of extracts from Aloe Vera L. var. chine sis on experimental hepatic lesions and a primary clinical

- study on the injection of in-patients with hepatitis. *Chung Kuo Chung Yao Tsa Chih*, Dec. 1989.
12. Davis RH; Leitner MG: Wound healing, oral and topical activity of Aloe Vera. *Journal of American Podiatric Medical Assn.*, Nov. 1989.
13. P. Atherton. (1998). *First Aid Plant. Chemistry in Britain.* 33-36.
14. V. Steen amp and M.J. Stewart. (2007). Medicinal applications and toxicological activities of Aloe. *Products. Pharmaceutical Biology.* 411-420.