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***Aloe vera* : A Potential Herb and its Medicinal Importance**

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Abstract

Aloe vera contains numerous vitamins and minerals, enzymes, amino acids, natural sugars and agents which may be anti-inflammatory and anti-microbial. The combination and balance of the plant's ingredients are what purportedly gives it its healing properties. The part of the *Aloe vera* which is used are the leaves. The Aloe is an Emollient, Purgative and Vulnerary. It is also used for its antibacterial, anesthetic and antiseptic properties, and is good to use as a tool for restoration of tissue. It is most commonly used on burns and minor cuts, especially good for sunburns, although it is being used for the treatment of skin cancer. Aloe is very useful on rashes caused by Poison Ivy, and it may help to draw out infection. It may help with Vaginal Yeast Infections, although this is not solid at this time. Aloe be made into a warm tea, made from the juice as a wash for eyes. The washing of eyes with Aloe may protect the eyes from ultraviolet rays from the sun. It can be used as a purgative. Aloe is also an extremely powerful laxative, and it is not recommended that it is taken internally. It is recommended that the fresh juice from the plant is used, and not the store bought juice within other products or on its own. The reason for this is that the medicinal use of the plant diminishes with time, and there is much questioning about whether or not you can receive benefits from the store bought aloe, even if the product has been filled with preservatives. It gives a healthy and supple look to the skin by reducing wrinkles, curing acne, rejuvenating and giving it a youthful glow.

Key words: Skin disorders, burning healing, coronary heart disease.

Introduction

Aloe vera has properties which has many medicinal uses. It has been observed through research that taking *Aloe vera* in food or drink has reduced the glucose level in the blood which has been useful in controlling diabetes. Most of the people who suffered from diabetes consumed *Aloe vera* mixed with yoghurt or in the form of herbal tea. It has also been used in anti aging and anti wrinkle creams and moisturizers. The moisturizer or the cream is preferred as it is not oily or sticky but dries up quickly as it is easily absorbed by the skin and does not have any type of odor. It can be applied to get relief from sunburn or other kind of burn as it reduces the pain and the inflammation and gives relief from the burning sensation and heals the wound very quickly. The sap from inside the leaf can be used directly or the product that is made of pure *Aloe vera* extract can be used for application on the burn or the wound. The extract from *Aloe vera* can also be used for treating ulcers in the stomach. The extract can be taken in juice form or with any food and it will help to reduce the inflammation and heal the wound in the stomach that is caused by the ulcer. If *Aloe vera* juice is consumed directly or with any other type of liquid it gives relief from many kinds of stomach ailments like irritable bowel, reflux, Crohn's disease, indigestion, heartburn, and many other problems. It helps to maintain the balance of the acids in the stomach which has a soothing effect on the stomach. *Aloe vera* has the anti bacterial property along with the anti inflammatory property which helps to cure mouth and gum problems and severe gum diseases. It can be used in the form of gel or toothpaste for rubbing the gums. It also has the property of curing skin problems like eczema, burns and wounds caused by cuts

Properties of *Aloe vera*

Family: Liliaceae

Botanical Name(s): *Aloe barbadensis*, *Aloe indica*, *Aloe barbados*, *Aloe vera*

Popular Name(s): Aloe, Aloe Vera, Indian Alces, Kumari, Ghirita, Gawarpaltra, Barbados aloe, Curacao aloe and Lu hui etc.

Description:

It is a stemless or 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 a 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.

***Aloe vera* contains an array of materials, including the following.**

Acids - antimicrobial, anti-helminthic (anti-parasitic worms), wound healing for skin tissue and ulcers.

Amino Acids - required for repair and growth. *Aloe vera* contains twenty of the twenty two essential amino acids.

Enzymes - catalysts enabling chemical reactions to take place.

Lectin - 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 - long chain sugars broken down to smaller ones via enzymes.

Urea-Nitrogen - pain killing effect.

Vitamins - contains 8 of the 13 recognised vitamins.

Contra-indications/Precautions

Not recommended during pregnancy.

Health Benefits of *Aloe Vera*

Aloe vera has been used from time immemorial to aid in smooth functioning of the gastrointestinal tract, mainly because of its properties of soothing, cleansing and helping the body to maintain healthy tissues. *Aloe vera* gel is famous for facilitating digestion, aiding blood and lymphatic circulation, as well as improving kidney, liver and gall bladder functions. *Aloe vera* has a minimum of three anti-inflammatory fatty acids, which help in smooth functioning of the stomach, small intestines and colon. It has a natural property to alkalize digestive juices and prevents over-acidity, which is one of the common causes of digestive ailments. *Aloe vera* juice concentrates are high in essential enzymes, which stimulate digestion and liver functions. The synergistic effect of *Aloe vera* juice used in combination with a few other herbs does wonders as a liver-cleansing agent. *Aloe vera* supplements also contain a rare natural ingredient called Saponins, which is provided by nature to cleanse and flush out waste products and toxins. More medicinal uses of *Aloe vera* are described in the following sections. *Aloe vera* could be used to reduce the burning sensation of burns and blisters. Applying the pure gel of *Aloe vera* would quell the sting of herpes. Juice or gel of *Aloe vera* is used to reduce warts, psoriasis and eczema. Today, skin doctors prescribe skin gels and creams made from *Aloe vera*. The fresh juice of *Aloe vera* is used to cure and heal rashes, vaginal infections, foot sores and fungus attack of various types. It is one of the home remedies for these problems. *Aloe vera* is used in hair loss treatment. The enzyme content of *Aloe vera* prevents hair loss by protecting the scalp against any diseases. *Aloe vera* also helps in the reduction of dandruff. You can mix the juice of *Aloe vera* with coconut milk and wheat germ oil and massage your scalp before shampooing your hair. If used continuously it helps in hair re-growth. There are on-going researches in the medical use of *Aloe vera* in the treatment and cure of AIDS and cancer. In the cure of cancer, there are many signs that medicines with *Aloe vera* content help in the activation of WBCs and in promoting the growth of non-cancerous cells. If people with HIV positive take regular doses of *Aloe Vera*, it helps in increasing the immunity of the body. The juice of *Aloe vera* mixed with milk is consumed for kidney infections. In Japan, *Aloe vera* is a main ingredient in the yogurt. In India, *Aloe vera* is used to make certain food dishes. *Aloe vera* was used as medicine by the people of the ancient world. The Greeks believe Alexander the Great conquered the island of Socotra, an island in Indian Ocean, because this island had ample growth of *Aloe vera* plants. *Aloe vera* is widely used for the following: Boosting of the immune system, As an anti-inflammatory for treating cuts and burns, Providing nutritional supplements.

External Benefits:

Burn and Wound Healing: *Aloe vera* is best known for its soothing and healing effects on burns and other wounds. Studies show that *Aloe vera* when applied to a wound increases both the

rate of wound closure and the tensile strength of the wound via the proliferation of cells, including skin, liver, nerve and blood cells. Aging Of The Skin: Aging of the skin is characterized by thinning and wrinkling of the epidermis, combined with the appearance of lines, creases, age spots and furrows in the face. Components of *Aloe vera* have been found to reverse degenerative skin changes by stimulating collagen and elastin synthesis, in essence turning back the clock on the effects aging has on skin.

Immune System Restoration: Research has proven that *Aloe vera* prevent suppression of the skin's immune system. This suppression may be one of the causes of skin cancer. In addition, topical application of the *Aloe vera* can be made up to 24 hours after exposure to ultraviolet light without reducing the degree of prevention regarding immune system suppression.

Moisturizer: One of the main reasons *Aloe vera* has become so popular among consumers is that it possesses incredible moisturizing properties. Studies show that *Aloe vera* improves the skin's ability to hydrate itself, aids in the removal of dead skin cells and has an effective penetrating ability that helps transport healthy substances through the skin. Each of these factors make *Aloe vera* an ideal ingredient in cosmetic and dermatological products. In fact, *Aloe vera* is currently one of the most important ingredients in the cosmetics industry, being utilized in over 95% of the dermatologically valuable extracts manufactured worldwide.

Arthritis, Joint and Muscle Pain: *Aloe vera* is believed to reduce severe joint and muscle pain associated with arthritis, as well as pain related to tendinitis and injuries. When applied directly to the area of pain, *Aloe vera* penetrates the skin to soothe the pain. Studies have also found that ingestion of *Aloe vera* on a daily basis can help prevent and cause a regression of adjuvant arthritis.

Anti-Inflammatory: *Aloe vera* promotes a variety of anti-inflammatory responses in the body, reducing swelling from injuries and promoting recovery from infections. Such anti-inflammatory responses not only aid in the relief of pain and discomfort, but also enhance the overall wound process.

Biological Vehicle: Acts as a biological vehicle to aid penetration and absorption of other bio-active ingredients into deep tissue.

Internal Benefits:

Arthritis, Joint and Muscle Pain: *Aloe vera* is believed to reduce severe joint and muscle pain associated with arthritis, as well as pain related to tendinitis and injuries. When applied directly to the area of pain, *Aloe vera* penetrates the skin to soothe the pain. Studies have also found that ingestion of *Aloe vera* on a daily basis can help prevent and cause a regression of adjuvant arthritis.

Relieve Gastrointestinal Problems: *Aloe vera* juice can relieve gastrointestinal problems and may be one of the plant's most ancient uses. Even today, people drink the juice to help relieve ulcerous, gastrointestinal and kidney problems. People have described improved regularity, greater intestinal comfort and enhanced energy levels after ingesting *Aloe vera* juice. In addition,

many who have suffered from indigestion, irritable bowel syndrome, increased stomach acid, peptic and duodenal ulcers, and colitis have reported relief from these conditions following ingestion of *Aloe vera* juice.

Coronary Heart Disease: Coronary heart disease is one of the major causes of death in the United States. However, studies suggest that the ingestion of *Aloe vera* gel may have a beneficial effect to the accumulation of blood fat lipids associated with the disease. Test groups given *Aloe vera* showed a decrease in total cholesterol, triglyceride, phospholipid and nonesterified fatty acid levels, each of which, when elevated, seem to accelerate the accumulation of fatty material in large and medium sized arteries, including the coronary arteries of the heart.

Antioxidant: Antioxidant, anti-microbial and anti-viral--*Aloe vera* contains vitamin C, E, zinc and seven superoxide dismutases.

Blood circulation-a number of constituents have beneficial effects on blood pressure and coagulation.

Digestion-One of its most popular usages these days is in helping any type of digestive or bowel disorder. *Aloe vera* has received an enormous amount of positive Press for its benefits in helping IBS, irritable bowel syndrome. It is also useful with other digestive problems, including peptic ulcers or any type of stomach inflammation. Its properties are those of healing and soothing and so it is worth using as a part of a healing programme on any digestive complaint.

Immune system-contains many ingredients providing antibacterial, antiviral and analgesic elements.

Burns and Sunburn - The soothing and healing quality of *Aloe vera* are well known for any type of burn and is especially popular for sunburn.

Laxative-It has a gentle laxative effect on the bowels.

Detoxification-amino acids assist the liver and kidneys.

The precise method by which *Aloe vera* works is not yet fully understood, but it is a great stimulator of the body's own immune system, which counteracts disease and disorder.

Medicinal Uses of *Aloe Vera*

Aloe vera plays an important role in maintaining the healthy functioning of the major organs, and preventing diseases.

- ❖ *Aloe vera* releases pepsin, which aids digestion, soothes digestive tract irritations, colic pain and ulcers. It also heals heart burns. This has come down from the traditions of folk medicine of Europe, and proved in recent clinical trials in Japan.
- ❖ *Aloe vera* acts as a general tonic, raises immunity and fights diseases. Research reveals its efficacy in conditions like HIV and cancer, especially leukemia, due to its ability to produce

white blood cells. Consequently, it can minimize the side effects of chemotherapy and radiation.

- ❖ It boosts circulation, and thus increases the supply of oxygen to the cells. Therefore, it could play a major role in alleviating the condition of thalassemia patients.
- ❖ *Aloe vera* is also beneficial for Asthma patients.
- ❖ It helps to maintain healthy joints and muscles, and thus, prevents arthritis.
- ❖ *Aloe vera* detoxifies the body, and is considered the best colon cleanser. It prevents constipation; therefore, it is an effective blood purifier.
- ❖ It is beneficial in kidney and liver problems, like jaundice.
- ❖ *Aloe vera* also reduces blood sugar, and controls diabetes.
- ❖ It reduces cholesterol and triglycerides, leading to a healthy heart, and preventing cardiac problems.
- ❖ *Aloe vera* reduces inflammation and infection of the eye and ear.
- ❖ Finally, it provides energy, and acts as a restorative. Moreover, it is said to alleviate depression.

***Aloe Vera* for A healthy skin**

Apart from its effect on the internal organs, *Aloe vera* has a beneficial effect on the skin.

- ❖ It is rich in anti-oxidants, which neutralize free radicals. As a result, *Aloe vera* wards off wrinkles and age related changes.
- ❖ It nourishes the skin, by boosting the circulatory system.
- ❖ *Aloe vera* is effective in treating skin disorders, like dermatitis, and even psoriasis.
- ❖ It heals cuts and wounds, blisters and burns, including sunburns, and even minor second degree burns.
- ❖ *Aloe vera* clears acne and skin allergies, dark spots and skin blemishes, and makes the skin clearer.
- ❖ It is also good for the hair and scalp.

In the scientific community there has been a divergent theory on the application and workability of *Aloe Vera*. But in the last 20 years with the advent of intensified scientific research, evidence has been fully established, demonstrating its diverse medicinal properties. Some of these evidential *Aloe vera* medicinal uses and *Aloe vera* Juice health benefits are for the treatment of the following health conditions:-

Canker Sores (Aphthous stomatitis) *Aloe vera* Gel may treat recurrent aphthous ulcers, reduce pain and increase the amount of time between the appearances of new ulcers.

Dry Skin: Traditionally *Aloe* has been used as a moisturizer. Studies suggest that *Aloe* may effectively reduce skin dryness.

Lichen Planus: Studies suggest that Lichen Planus, which is a chronic inflammatory disease that affects the lining of the mouth, may be treated by *Aloe*.

Skin Burns/Skin Ulcers: It has been found that *Aloe vera* may aid healing of mild to moderate skin burns and ulcers. Extensive research carried out since the 1930's has shown that the clear

Aloe Gel has a dramatic ability to heal wounds, ulcers and burns by putting a protective coating on the affected areas and speeding up the healing rate.

Radiation Dermatitis: Reports in the 1930s of tropical Aloe's beneficial effects on skin after radiation exposure, lead to widespread use in skin products. Currently *Aloe vera* Gel is sometimes recommended for skin irritation caused by prolonged exposure to radiation.

Constipation: Dried latex from the inner lining of Aloe leaves has been used traditionally as a laxative taken by mouth. Although few studies have been conducted to assess this effect on Aloe in human, the laxative properties of Aloe components such as aloin are well supported by scientific evidence.

Genital Herpes: Evidence from human studies suggest that extracts from *Aloe vera* in a hydrophilic cream may be an effective treatment of genital herpes in men.

Psoriasis Vulgaris: Early evidence suggests that an extract from Aloe in hydrophilic cream may be an effective treatment of psoriasis vulgaris.

Seborrheic Dermatitis(Seborrhea, Dandruff): A study of *Aloe vera* lotions suggests effectiveness for treating seborrheic dermatitis when applied to the skin.

Cancer Prevention: There is early evidence that oral Aloe may reduce the risk of developing lung cancer. *Aloe vera* is used in alternative medicines and in home first aid.

Side Effects of *Aloe vera*

Some people do experience side effects when using aloe vera. Some of these are:

- Dehydration due to frequent stools
- Stomach cramping
- Irregular heartbeat
- Lowered potassium levels

In addition you should not take *Aloe vera* internally if you have:

- Kidney problems
- Heart disease
- Diabetes
- Pregnant
- Nursing
- Allergies to onions, garlic, or tulips

Effect on HIV

Aloe vera contains Gluco-mannan, a special complex polysaccharide composed largely of the sugar Mannose. It interacts with special cell-surface receptors on those cells which repair damaged tissues, called fibroblasts, stimulating them, activating their faster growth and replication. An extract of Mannose, one of the sugars in *Aloe vera* can inhibit HIV-1, the virus associated with AIDS. In a 1991 study in Molecular Biotherapy, HIV-1 cells were treated in vitro – outside the body – with the Mannose extract. Virus reproduction was reduced by as much as 30% by Aloe Vera, viral load – total amount of the virus – as well was reduced, the spread of the virus from the infected cells was suppressed and the viability – chance of survival – of infected

cells was increased. The *Aloe vera* gel also proved to be an effective part of a nutritional support program for HIV+ patients according to the Journal of Advancement in Medicine. For 4 months, 29 patients were given 100% pure *Aloe vera* gel (5 ounces, 4 times daily) along with an essential fatty acid supplement and another supplement containing vitamins, minerals and amino acids. Patients were told to continue with their normal diet and not to take other supplements. After 90 days all of the patients had fewer occurrences of opportunistic infections, thrush, fatigue and diarrhoea, as well as increased white blood cell counts meaning their immune systems were responding positively. Their assessment of overall quality of health also improved. In 255 of the patients, *Aloe vera* apparently knocked out the virus's ability to reproduce. Researchers found that *Aloe vera* stimulates the body's immune system, particularly T4 helper cells – white blood cells that activate the immune response to infection. The medicinal uses of *Aloe vera* extend to protection against radiation burns.

Protection against radiation

With the invention of the atom bomb it was discovered early in the search for protection against radiation burns that the best treatment was *Aloe vera* gel. It is rumored that the U.S.A. and the U.K. have huge stockpiles of *Aloe vera* for use in the event of a nuclear attack and doctors have even prescribed it for intravenous use when treating radiation burns. The *Aloe vera* gel has a dramatic ability to heal wounds, ulcers and burns by putting a protective coating on the affected areas, speeding up the healing rate, relieving pain and preventing blisters. It can also reduce inflammation, decrease swelling and redness and accelerate wound healing. *Aloe vera* increases availability of Oxygen to the skin and also increases the synthesis and strength of tissue. *Aloe vera* protects against skin damage from X-rays according to researchers at Hoshi University in Japan publishing in the journal *Yakugaku Zasshi*. They found that *Aloe vera* was an effective antioxidant, mopping up the free radicals caused by radiation, and that it protected two of the body's healing substances, Superoxide Dismutase (an antioxidant enzyme) and Glutathione (an amino acid which stimulates the immune system). The medicinal uses of *Aloe vera* also include protection against frostbite damage.

Conclusion

While there are many claims as to *Aloe vera* benefits and its uses, It is belonging to the Asphodelaceae family, and is related to onions and asparagus. The Aloe genus appears naturally in Africa, although many members of the genus are popular houseplants and can be found around the world. The most famous member of the genus is Aloe Vera, known for its medicinal uses and applications. Though there are several common medical uses for Aloe Vera, the most frequent use of the plant is in the form of a topical gel. Gels made from Aloe are used to treat burns and minor scrapes. *Aloe vera* benefits range from soothing inflammation, pain relief, and a reduction in the likelihood of infection. Studies have also shown that regular use of an *Aloe vera* based gel will actually speed the healing process in minor wounds, and even severe burns. It has been used in this capacity for hundreds of years. The thick leaves can be snapped open, and the moist open ends of the leave can be rubbed onto a burn or scrape directly. In industrialized areas, the moisture from the Aloe leaves are extracted and made into the popular gel most people are familiar with. In more recent years, it has become more popular than ever and has found its way into skin lotions, cosmetic products, shampoos, lip balms, soaps and sunscreens. Some *Aloe vera* benefits include a strong moisturizing capacity, and its extract contains a number of vitamins and

minerals that are believed to promote healthy skin. It is a very gentle substance in itself, so one of the benefits of *Aloe vera* is that it can be used in sensitive areas, such as around the eyes. Aloe plants, have also found medicinal uses internally. Used in this way primarily as a laxative, the juice from aloe can be dried into a dark powder composed of yellowish granules that are quite bitter to taste. Internal use of Aloe is marketed as a treatment for coughs, ulcers, muscle pain, headaches, and even cancer and HIV. The only proven *Aloe vera* benefit in internal use is the relief of constipation. Additionally, even in this use, internal use of the plant has a number of side effects, can cause nausea, and should not be taken by women who may be pregnant.

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