

ALOE VERA: A POTENTIAL HERB USED AS TRADITIONAL MEDICINE BY TRIBAL PEOPLE OF KONDAGATU AND PURUDU OF KARIMNAGAR DISTRICT, TELANGANA STATE, INDIA. AND THEIR PREPARATIVE METHODS.

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ABSTRACT

Aloe Vera is the oldest medicinal plant ever known to mankind, and most widely used medicinal plant worldwide today.^[1] *Aloe Vera* is used in Ayurvedic, Homoeopathic, siddha, unani and Allopathic streams of medicine. *Aloe Vera* is a rich source of over 200 nutrients, including vitamins, minerals, enzymes, sugars, lignin, saponins, sterols, amino acids, salicylic acid, etc. and other bioactive compounds with emollient, purgative, antimicrobial, antiinflammatory, antioxidant, aphrodisiac, antihelmenthic, antifungal, antiseptic and cosmetic values for health care.^[4] This plant has potential to cure sunburns, burns and minor cuts, and even skin cancer. The external use in cosmetic primarily acts as skin healer and prevents injury of epithelial tissues, cures acne, wrinkles and gives a youthful glow to skin, also acts as extremely powerful laxative.^[7] In this work we are trying to expose hidden secrets of using *Aloe Vera* as traditional medicinal plant and its preparative methods for multipurpose treatment, dietary food, beverage, cosmetics, by tribal people of kondaghathu, and purudu villages of karimnagar district, Telangana State.

KEYWORDS: *Aloe Vera*, tribal community, Antioxidant, Laxative, Anticancer, Antidiabetic, Anti-abortive antiinflammatory.

INTRODUCTION

Aloe Vera Sometimes referred as the “burn plant,” “lily of the desert” or the “wonder plant,” In India it is called as Ghritkumari and gayatri plant. *Aloe Vera* likely originated in the Sudan. Ancient civilizations eventually brought the plant to the Mediterranean region and other warm climates around the world. The usage of *aloe Vera* dated back to 2000 years, still people of India is following traditional medicine using lot of herbs and shrubs, among which *Aloe Vera* is one of the most important medicinal plant.^[11] *Aloe Vera* is a herb distributed all over the world. It acts as a natural fighter against all sorts of infections, an efficient anti-oxidant, helps in treating all digestive problems, heartburn, arthritis, wound healing, insect bite, constipation, dysmenorrhea, stress, diabetes, analgesics, asthma, cancer, Teeth, gums, Kidney problems, Liver problems, spleen problems, lung problems, leprosy, gonorrhoea, eyes, ear, nose diseases, heat reduction Rectal ulcers etc. It also contains antibacterial, antifungal, antiseptic, antibiotic, antiviral, antidandruff, antihelminthic, antiinflammatory, antipyretic, antiabortive, antitumor,

vaginitis, vaginal douche, white blood cell production and laxative effect etc.^[9] It also acts as a, beauty enhancer, hair fall, and white hair. It is known to help slow down the appearance of wrinkles and actively repair the damaged skin cells that cause the visible signs of aging and moisturizing effects.^[7] *Aloe Vera* is a powerful detoxifier and tonic for the nervous system. Guards against skin diseases, burns, ulcers, boil eruptions. Many of the health benefits associated with *Aloe Vera* have been attributed to the polysaccharides contained in the gel of the leaves.^[14] While the known biological activities of *Aloe Vera* will be briefly discussed, it is the aim of this article to further highlight the traditional usage methods in some of the remote areas of Karimnagar district, of Telangana state in India, villages such as Kondaghathu, and Pudur villages where most of the tribal people depends on traditional medicine where there is poor medical facilities.

As a substitute for modern medicine, usage of *Aloe Vera* by the tribal people in those villages have given us very important information about *Aloe Vera* and the team

have learned a lot of preparative methods for different sickness, Beverages, cosmetic use and as dietary food.^[38] The authors are trying to put all the knowledge of preparing traditional medicine in this article. These effects include the potential of whole leaf or inner fillet gel liquid or dried leaf or powdered leaf preparations of *Aloe Vera* are mixed with some other traditional ingredients to enhance the effect of the traditional medicine which are in practice for hundreds of years. So, there is a need to educate people about the importance of *Aloe Vera* and popularize the usage of natural medicine than synthetic medicine.^[9]

Taxonomy

Kingdom -	Plantae
Order -	Asparagales
Division -	Spermatophyta
Subdivision -	Angiospermae
Class -	Monocotyledoneae
Family -	Liliaceae
Genus -	Aloe
Species -	Barbadensis Mill

Botanical Description of Aloe Vera

The plant is a coarse looking perennial with short, thick somewhat divided stem, 30 to 60 cm high. The leaves are glaucous green, sessile, crowded, lanceolate, Erect spreading rather than concave, spiny toothed at margin, about 30 to 60 cm long, 10 cm broad and 1.8 cm thick full of juice. The scape is longer than leaves and is scaly and branched.^[11] The flowers are pendulous, imbricated and yellow in colour. The plant reaches maturity after four years and has leaves with a length varying between two and three feet and a base width from three to five inches, each leaf weighing from two to four pounds. The plant's complete life cycle is twelve years. It produces an average of twelve to thirty leaves.^[115] The odour is characteristic while the taste is nauseous and bitter.

Distribution of Aloe Vera

Aloe Vera has been using for thousands of years by many ancient civilization including Egypt, Persia, Greek, India, china and Africa. The genus is indigenous to African continent and Mediterranean countries, such as Greece and Southern Italy. It is reported that it grows wild on the islands of Cyprus, Malta, Sicily, the Canary Cape, and Cape Veroe and have spread over arid tracts of India.^[15] Out of the 275 species, 42 of them belong to Madagascar region (Africa), 12-15 to Arabian Peninsula and rest are distributed over tropical South Africa. In India, only 4 species (*Aloe forbesii*, *Aloe inermis*, *Aloe ferox* and *Aloe barbadensis*) are reported to occur and of these *Aloe barbadensis* is the most widely distributed species.^[15,16]

Medicinal properties of Aloe Vera.

Aloe Vera has been used for medicinal purposes in several cultures for centuries: Greece, Egypt, India, Mexico, Japan, China etc. The Egyptians used the *Aloe Vera* to make papyrus like scrolls as well as for treatment of tuberculosis.^[18] Various preparation of *Aloe*

barbadensis like confection, lotion and juice are useful remedies for curing various disease. *Aloe Vera* contains mixture of glucosides collectively called 'aloin' which is the active constituent of various drugs. Indian aloe (*Aloe barbadensis*) is a rich source of over 200 naturally occurring nutrients such as vitamins, minerals, sugars, amino acids, enzymes and acids, which helps in digestion system.^[19] The peeled, fresh and preserved gel is used to treat inflamed eyes, skin inflammations of sores and burns. The healing properties of aloe are due to the presence of aloectin B, which stimulates the immune system. The Food and Drug Administration of the USA has approved the developmental study of *Aloe Vera* for the treatment of cancer and AIDS.^[22] This is attributed to the antiviral and immune modulating properties of acemannan.^[24] Traditionally aloe is extensively used in treating urine related problems, pimples, ulcers etc. It is also used in gerontology and rejuvenation of aging skin.^[73] The bio active compounds are used as astringent, haemostatic, anti diabetic, antulcer, antiseptic, antibacterial, antiinflammatory, antioxidant and anticancer agent, also effective in treating stomach ailments, gastrointestinal problems, skin diseases, constipation, radiation injury, wound healing, burns, dysentery, diarrhoea and in the treatment of skin diseases.^[30] Currently the plant is widely used in skin care, cosmetics and as nutraceuticals. Ghritkumari is described as multi functional herb in Ayurveda as blood purifier, anti inflammatory, diuretic, uterine tonic, spermatogenic, laxative and fever reliever.^[18] It is used in ayurvedic formulations as appetite stimulant, purgative, emmenagogue and antihelminthic, cough, colds, piles, debility, dyspnoea, asthma and jaundice.^[29] Co-treatment with *Aloe Vera* was effective in reducing genotoxicity of the direct-acting mutagen. As a drink it protects the mucous membrane of the stomach especially when irritated or damaged. *Aloe Vera* juice is considered helpful for relieving many types of gastrointestinal irritation and juice products are widely available. *Aloe Vera* leaf gel act against various micro organisms and increases in total white blood cell count and macrophages.^[22] In acute gastric mucosal lesions, the extract dose dependently inhibits gastric acid secretion and provides gastro protective activity. *Aloe Vera* contains salicylic acid which is an aspirin like compound with anti inflammatory, analgesic and antibacterial properties.^[23] It has antipyretic properties for reducing fevers. Another constituent of *Aloe Vera* includes saponins. These are soapy substances from the gel that are capable of cleansing and having antiseptic properties. The saponins perform strongly as anti-microbial against bacteria, viruses, fungi and yeasts.^[28] The plant sterols or phytosteroids in *Aloe Vera* include cholesterol, campesterol, lupeol, and β -sitosterol. The plant steroids have fatty acids in them that have antiseptic, analgesic, and antiinflammatory properties. *Aloe Vera* contains properties such as: astringent (causing a contraction of the skin, blood vessels, and other tissues stopping the fluid discharge), emollient (helps to soften and smooth the skin), antifungal (destroys fungi), and cell proliferant

(quickly develops new cells) used to heal wounds and burns. Generally aloe juice is a good tonic for skin and digestive disorders.^[36] The enzymes in *Aloe Vera* will improve digestion and nutrient absorption. It will help bring the body to a pH balance while being beneficial to the whole gastro-intestinal system. *Aloe Vera* juice aids the digestion and absorption of nutrients, helps control blood sugar, increases energy production, promotes cardiovascular health, improves liver function, and boosts the immune system.^[55] The pulp is used extensively in Siddha medicines for treating constipation, enlargement of spleen, zymotic disease and chengamaari.^[43] The plant was more active as a gastroprotective agent at lower concentration against mucosal injury. It is also reported that the aloe juice have antiinflammatory, antiarthritic activity, antibacterial and hypoglycaemic effects. *Aloe Vera* also contains the trace minerals rhodium and iridium used in cancer and tumor research experiments.^[22] It produces at least 6 antiseptic agents which kill or control mold, bacteria, fungus and viruses such as Lupeol, salicylic acid, urea nitrogen, cinnamonic acid, phenols and sulfur. Lupeol and salicylic acid are known as effective painkillers. Aloe also contains three anti-inflammatory fatty acids such as cholesterol, campersterol and β - sitosterol (plant sterols). These agents are the source for aloe's effectiveness in treating all kinds of internal and external inflammations including burns, cuts, scrapes, acid indigestion, ulcers and other inflammations of the liver, kidney, colon and pancreas, among others. Additionally, β -sitosterol is a powerful agent in helping to lower bad cholesterol levels.

Aloe Vera for boosting immunity

Aloe Vera leaf gel helps to improve immunity and protects heart, liver, pancreas, spleen, kidneys, brain and other vital organs of body.^[22] The whole leaf extract galvanizes the cells of immune system. The phagocytes of human body increase their scavenging activities, thus cleaning the body and giving a whole cascade of protective actions, which strengthen immunity.^[22] *Aloe Vera*, a great immune stimulant, contains 90 per cent minerals along with rhodium and iridium (trace minerals). Acemannan is one of the polysaccharides which dramatically increase the white blood cells or macrophages and T cells.^[27] The most important are the long chain polysaccharides, comprising glucose and mannose, known as the glucomannans. The polysaccharides are absorbed completely and appear in the blood stream unchanged hence they act as immunomodulators.^[78,79] The bitter aloes consist of free anthraquinones and their derivative: barbaloin, aloemodin-9-anthrone, isobarbaloin, anthrone-C-glycosides and chromones. In large amounts these compounds exert a powerful purgative effect, but when taken in smaller amounts they appear to aid absorption from the gut, are potent antimicrobial agents and possess powerful analgesic effects. They also reduce the formation of melanin and any tendency to hyperpigmentation.^[82,83] Lignin with their penetrative ability facilitates to carry other active ingredients deep into the

skin to nourish the dermis.^[84] *Aloe Vera* extracts when consumed (150 mg/kg and 300 mg/kg) respectively for 5 days, there was a significant increase in the total white blood cell count and macrophages with the engulfed SRBC with increase in concentration. This shows the immunomodulatory property of the extract.^[85] Davis (1997) in his experiment sees a promising role for this natural broad spectrum healing plant because of its immunodulatory properties can also act as an immune stimulant.^[71] Acemannan, a chemical compound found in *Aloe Vera* acts as a powerful immunostimulant in animals, particularly in cats.^[86] The *Aloe Vera* gel polysaccharide can boost the working of the macrophages in the intestines allowing the immune system to improving the activity of T-Lymphocytes by up to 50 per cent for penetrate the bad bacteria, viruses, tumor cells and various pathogens.^[27,49]

Aloe Vera for nutritional benefits

Aloe Vera is not only a medicinal plant but also can be used for nutritional benefits. The plant contains a numerous essential vitamins and minerals such as: Vitamins A, B1, B2, B3, B6, B12, C, E, folic acid, choline etc. minerals such as calcium, phosphorous, potassium, iron, sodium, magnesium, manganese, copper, chromium, and zinc. *Aloe Vera* also contains a wealth of amino acids: isoleucine, leucine, lysine, methionine, phenylalanine, threonine, valine, aspartic acid, glutamic acid, alanine, arginine, cystine, glycine, histidine, hydroxyproline, proline, serine and tyrosine. Free monosaccharides consists of D-mannose and D-glucose and trace amounts of xylose, raminose, galactose and either arabinose or fucose was found. Mannose 6 phosphate is a major sugar component in *Aloe Vera*.^[20] Additional minerals found in *Aloe Vera* include copper (important for red blood cells, skin and hair pigment), iron (involved in oxygen transportation and making of hemoglobin in red blood cells), potassium (helps in fluid balance), phosphorus (helps in building bones and teeth, assists in metabolism and maintains body pH) and sodium (regulates body liquids, helps in nerve and muscle performance, and helps in delivering nutrients to body cells).^[22] Another component of *Aloe Vera* consists of the lignins, a major structural material of cellulose content that is helpful for penetrative properties and beneficial for skin problems such as eczema and psoriasis. Vitamins such as A, C and E acts as natural antioxidant, along with minerals zinc and selenium. Antioxidants help boost the immune system and combat free radicals in the body. These free radical fighters get rid of the toxins and carcinogenic elements in human bodies from the pollution and poor quality foods.^[22] *Aloe Vera* leaf gel contain a range of biologically active compounds, the best studied being acetylated mannans, polymannans, anthraquinone C-glycosides, anthrones and anthraquinones, and various lectins.^[23,24,30] The main enzymes found in *Aloe Vera* include amylase (breaks down sugars and starches), bradykinase (stimulates immune system, analgesic, antiinflammatory), catalase (prevents accumulation of water in the body), cellulase

(aids cellulose digestion), lipase (aids fat digestion), oxidase, alkaline phosphatase, proteolytiase (hydrolyses proteins into their constituent elements), creatine phosphokinase (aids metabolism), and carboxypeptidase.^[11,31] Other constituents of *Aloe Vera* would include prostaglandins, tannins, magnesium lactate, resins, mannins, proteins such as lectins, monosulfonic acid and gibberellins.^[22]

Aloe Vera for Cosmetic benefits

Usage of *Aloe Vera* leaf gel for cosmetic purpose is one of the oldest traditions of the world. Evidences have been showing that countries like Egypt, China, Africa and India have been using *Aloe Vera* since thousands of years. *Aloe Vera* leaf gel is used as skin tonic against pimples. *Aloe Vera* is also used for soothing the skin, and keeping the skin moist to help avoid flaky scalp and skin in harsh and dry weather.^[39] *Aloe Vera* may also be used as a moisturizer for oily skin. 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.^[61,62] Each of these factors makes *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 per cent of the dermatologically valuable extracts manufactured worldwide.^[62] The aloe sugars are also used in moisturizing preparations. Mixed with selected essential oils, it makes an excellent skin smoothening moisturizer, sun block lotion plus a whole range of beauty products.^[55] Due to its soothing and cooling qualities, Ayurvedic medicine recommends *Aloe Vera* for a number of skin problems. *Aloe Vera* extracts have antibacterial and antifungal activities, which may help in the treatment of minor skin infections, such as boils and benign skin cysts and have been shown to inhibit the growth of fungi that cause tinea. *Aloe Vera* leaf gel stimulates fibroblasts, the skin cells responsible for wound healing and the manufacture of collagen, the protein that controls the aging process of the skin and wrinkling.^[20]

Some of the traditional medicines prepared by tribal people using Aloe Vera

Aloe Vera juice preparation for sunstroke

Aloe Vera juice is useful to treat people who are affected by sun stroke in summer season, specially telangana area is very hot in summer season and reaches up to 45⁰ in the peak months of April and may, tribal people here prepare very nice tasty juice with the gel of *aloe vera* leaf by mixing it with sugar, water and few drops of essence prepared naturally from roots of herbs, so that they can consume 2 to 3 times a day.

Aloe Vera for improving digestive system

Aloe Vera leaf gel is useful to treat gastric intestinal problems like indigestion, Candida, Constipation, diarrhea, colitis and relief from digestive issues such as heartburn and irritable bowel syndrome. *Aloe Vera* juice

helps digestion, normalizes acid/alkaline and pH balance, lessens yeast formation, encourages digestive bacteria and regularizes bowel processing. The deposits of toxins and unwanted substances in our diet keeps on accumulating in intestine and prevent the absorption of essential nutrients causing nutritional deficiency, lethargy, constipation, and low back ache. Aloe juice helps to flush out these residues boosting the digestion and gives a greater feeling of well being. *Aloe Vera* gel and leaf is used to relieve many types of gastrointestinal irritations. The dried powder of aloe Vera leaf gel is one of the important ingredients of a large number of Ayurvedic preparations, particularly the tribal people uses both the dried leaf powdered form and gel form for treating diseases associated with the digestive system.

Aloe Vera for Teeth and Gums

Chewing *Aloe Vera* leaf or massaging on gums with index finger gently using its Gel will cure bleeding gums and toothache. *Aloe* latex contains anthraquinones, compounds that actively heal and reduce pain through natural anti-inflammatory effects and controls cavity causing oral bacteria.

The tribal people of this area mix *Aloe Vera* leaf gel with wood ash or wood charcoal and use it to clean the teeth.

Aloe Vera for Dysmenorrhea

Aloe Vera is well known for its healing properties that help in treating menstrual cramps. It is full of anti inflammatory, anti bacterial and anti viral and anti analgesics, it works well for menstrual pains as it is perfect or pain reliever and regulates proper blood flow during menstruation.

The tribal people prepares fresh *Aloe Vera* leaf juice by adding little honey to it and taking 3 times a day so that it will smooth the flow of blood, relaxes uterine muscles and reduce excessive pain.

Aloe Vera for Eye problems

Aloe Vera gel mixed with a pinch of patika (alum, potassium aluminum sulfate) put it in a cloth and put it on the eyes. Do this as many times as possible so that it reduces redness, eye rashes and watering.

Aloe Vera for Ear and nose infections

Dried *Aloe Vera* leaf gel powder mixed with raw turmeric juice put few drops into ear and nose 3 to 4 times a day to reduce infections.

Aloe Vera for Spleen enlargement

Aloe Vera leaf gel mixed with pinch of dried turmeric powder and pinch of powdered dried seeds of bitter gourd, add little sugar to make it sweet and taken 2 times a day.

Aloe Vera for Diarrhea

Aloe Vera leaf gel mixed with few drops of raw garlic juice, and a pinch of dried turmeric powder, mix them to

make a homogeneous paste and taken 2 to 3 spoons three times a day.

Aloe Vera for uterine cancer and cervical cancer

Aloe Vera leaf gel mixed with few drops of fresh tuberous root juice of asparagus racemose and taken for 2 to 3 times a day.

Aloe Vera for Constipation

Constipation is one of the common physiological effects every one experience in their life, *Aloe Vera* is one of the simple and best home remedy to treat constipation without using synthetic medicines. *Aloe Vera* leaf gel mixed with milk and water make it as a thick milk shake and drink it before going to bed every day.

Aloe Vera for rectal infection and ulcers

Dried *Aloe Vera* leaf gel powder mixed with few drops of coconut oil and mix it completely until it becomes homogeneous thick paste, applied at the affected area, also apply inside the rectum with the help of a fingure.

Aloe Vera for Lowering Cholesterol in the blood

A few studies have indicated that aloe can play a role in lowering cholesterol. According to the National Institutes of Health (NIH), daily intake of 10 ml or 20 ml of aloe for 3 months was shown to reduce LDL (bad) cholesterol by 18 percent and total cholesterol by 15 percent.

Aloe Vera for Miscarriage and anti-Abortive

Tribal people even use *Aloe Vera* for treatment of patients who are suffering continuous abortions. *Aloe Vera* leaf gel mixed with homemade jaggery (Indian traditional sugar) and few drops of Ghee (Indian butter) taken at bed time, at the time of ovulation every month.

Aloe Vera for Arthritis, joint pains Body pains, muscle pain,

Many people suffering from arthritis have reported that by taken a little amount of *Aloe Vera* leaf gel each day, cures joint pains. Scientists are attempting to discover if Aloe is indeed responsible for alleviating this pain, to what extent, and in which types of arthritis. Some people experience relief right away. *Aloe Vera* leaf gel is also claimed to be effective for aching joints and muscles. It is said to bring temporary relief by rubbing the Aloe cream directly on the skin. Since there are no adverse side effects it can be used repeatedly.

Young *Aloe Vera* leaf gel mix with pinch of white pepper and few drops of garlic juice, add some sugar to make it sweet and eat two spoons three times a day.

Aloe Vera for increasing potentiality and sperm count

Aloe Vera leaf gel contains huge amount of minerals, amino acids, hormones and enzymes which are useful ingredients in the production of sperm and potentiality. Young *Aloe Vera* leaf gel mixed with 2 to 3 dried cloves of garlic and onion taken 2 to 3 times a day to increase the testosterone levels and potentiality

Aloe Vera for heart disease

Aloe Vera leaf gel results in marked reduction of serum cholesterol and triglycosides levels and increases HDL levels. Researchers have found that *Aloe Vera* leaf gel easily stimulates the fibroblasts for making new tissues. When fibroblasts are stimulated, proteoglycans, collagens are formed and thus risk of cardio vascular disorders decreases. However, studies suggest that the ingestion of *Aloe Vera* gel may have a beneficial effect to the accumulation of blood lipids associated with the disease. *Aloe Vera leaf gel* decrease cholesterol, triglyceride, phospholipids 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. *Aloe Vera* leaf gel mixed with few drops of garlic juice, and pinch of black salt taken 3 times a day.

Aloe Vera for Depression, Stress release, Anger management, Stability management etc

In recent days many people are suffering from stress and stress related diseases. Today's fast stressful life, due to lack of proper nutritional diet, lack of exercises, lack of rest, work tension, family tension, irregularity in the daily activities and showing very less importance to physical body causes imbalance of biochemical and physiological systems in the body, making susceptible to diseases and dysfunction of organ systems. *Aloe Vera* leaf gel enhances or promotes the smooth functioning of body physiological mechanism. It reduces cell damaging process during stress condition and minimizes biochemical and physiological changes in the body. The term Oxidative stress refers to chemical reactions in which compounds have their oxidative state changed. Some antioxidants are part of the body's natural regulating mechanism while other antioxidants are derived from diet. One of the good sources for dietary antioxidants is *Aloe Vera* leaf gel. *Aloe Vera* is an excellent example of a functional food which contains a variety of biological compounds which are specified in the introductory part that plays a significant role protecting from oxidative stress.

One of the preparative methods of *Aloe Vera* leaf gel for the treatment, specially for stress and depression by tribal people is by taking *Aloe Vera* leaf gel mixed with little amount of old tamarind (fruit in black color) boil to make a soup, mix pinch of salt and taken as a soup two times a day, it will stabilize the brain cells by initiating the adrenal gland to release hormones that can control stress, depression, anxiety and make stable etc.

Aloe Vera for Cuts and wounds

Wound healing is a dynamic process, occurring in 3 phases. The first phase is inflammation, hyperaemia and leukocyte infiltration. The second phase consists of removal of dead tissue. The third phase of proliferation consisting of epithelial regeneration and formation of fibrous tissue. *Aloe Vera* leaf gel is excellent for relieving inflammation and accelerates healing and cell

division due to presence of wound healing hormones. *Aloe Vera* leaf gel has antibacterial, antifungal, antiviral and antiseptic properties and helps to heal wounds. *Aloe Vera* juice when taken orally enhances immunity and increases cell repair capacity by inhibiting infestation of microorganisms and increases blood flow to wounded areas. *Aloe Vera* has high water content (96%). This prevents wound desiccation and increases migration of epithelial cells. The anthraquinones in *Aloe Vera* breakup residue, pus and lifeless cells, bring blood to the region and flush out material from the wounds and ulcers. *Aloe Vera* leaf gel mixed with pinch of dried turmeric powder and mix it properly for few minutes until it become homogeneous mixture and applied it on the affected areas as well as taking *Aloe Vera* leaf gel orally enhances wound healing.

Aloe Vera for White hair reduction, hair fall, Ticks, mites, dandruff, baldness, grey hair, dry split hair etc.

Aloe Vera leaf gel contains proteolytic enzymes which repairs dead skin cells on the scalp. It also acts as a great conditioner and leaves your hair all smooth and shiny. It promotes hair growth, prevents itching on the scalp, reduces dandruff and conditions your hair. Diane Gage, author of *Aloe Vera: Nature's Soothing Healer* says, "Keratin, the primary protein of hair, consists of amino acids, oxygen, carbon, and small amounts of hydrogen, nitrogen, and sulphur. *Aloe Vera* has a chemical makeup similar to that of keratin and it rejuvenates the hair with its own nutrients, giving it more elasticity and preventing breakage.

Aloe Vera leaf gel mixed with traditionally prepared double distilled alcohol and few drops of sesame oil mix it properly for homogeneous mixture and applied to the head before going to bed.

Aloe Vera for Piles

Half tea spoon of dried *Aloe Vera* leaf gel powder mixed with pinch of hing (*Asafoetida*) powder and few drops of sesame make it a homogeneous mixture and apply at the affected area before bed.

Aloe Vera for Lower abdomen pain

Half tea spoon of dried *Aloe Vera* leaf gel powder mixed with water and warm to make a homogeneous paste, apply to the lower part of the abdomen to relieve pain.

Aloe Vera for Migraine

Migraine is one of the serious physiological condition affected to many people, migraine is caused due to lot of reasons, it might be genetic, hormonal change, pollution, chemicals, medicinal side effect, stress, diet etc. most of the synthetic medicines help reduce migraine but cause serious side effects such as damage to liver, kidney, nervous system etc. migraine is a chronic disease where the patients have to use for a long time. One of the best therapeutic medicines that can be used for chronic sickness like migraine is natural medicine. Tribal people

have given a very nice preparation of *Aloe Vera* for migraine.

Dried *Aloe Vera* leaf gel powder mixed with neem (*Azadirachta indica*) seed oil and applied to the head for a period of three months which effectively stabilizes the migraine and as well as taking *Aloe Vera* leaf gel orally enhances wound healing.

Aloe Vera for Breast pain

Breast pains are common for women who are menstruating or having tumors or after stopping lactation. The application of *Aloe Vera* leaf gel to the breast will give the best results for breast pain. *Aloe Vera* leaf gel dried powder mixed with small amount of coconut oil and a pinch of camphour is applied on the area where the pain is more

Aloe vera for Tuberculosis

Aloe Vera leaf gel is very effective against the bacillus that causes tuberculosis. Evidences have shown that using *Aloe Vera* leaf gel would increase immune system and stop bacterial growth. The active compounds of aloin and Aloe-emodin inhibits the growth of bacillus.

Pinch of Dried leaf gel powder mix with pinch of venugaram (Borax) ($\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$) in a glass of milk and taken two times a day.

Aloe Vera for Stomach ulcers, heart burn, indigestion.

Pinch of Dried leaf gel powder mix with milk and ghee (Indian homemade butter) and taken at bed time daily which will reduce steadily heart burns and stomach ulcers.

Aloe Vera for Dysentery.

Dried *Aloe Vera* leaf gel powder mixed with sulphate of iron in three table spoons of freshly prepared curd and taken 2 to 3 times a day until the infection completely decreases.

Aloe Vera for sexually transmitted infections, endometriosis and presence of fibroids in uterus, gonorrhea etc.

Sexually transmitted diseases that are often but not exclusively transmitted through by sexual intercourse. They used to be known as venereal diseases or VD and considered the most popular contagious diseases. Some forms of STDs are HIV, genital herpes, genital warts, Chlamydia, gonorrhea, syphilis, hepatitis, and trichomoniasis.

Aloe Vera gel mixed with two spoons of milk and water applied in the affected areas, and at the same time *Aloe Vera* gel mixed with pinch of dried garlic powder is taken orally 3 times a day.

Aloe Vera for Pimples and Achiness

As a skin beautifier, Aloe Vera is the best natural medicine for pimples and achiness and has been used throughout time by the Chinese, Egyptians, Indians, Greeks and countless others. When applied to skin injuries, Aloe gel helps to produce quick and often dramatic results. The gel forms an invisible coating which acts as a protective dressing, preventing further infection and allowing healing to take place.

Aloe Vera leaf gel can be directly applied to the face or mixed with a pinch of dried facial turmeric powder and a pinch of sandal wood powder until it become homogeneous mixture and applied on the affected areas or complete face so that it will remove pimples and gives smooth skin and glow to the face.

Aloe Vera for Protection from ultraviolet (UV) irradiation

Many cancer treatments are followed by radiation therapy to suppress completely the cancer causing tissue, but due to radiation the patient develop skin problems such as burns, boils and rashes etc. *Aloe Vera* pure gel can be used for protecting skin from damage after radiation therapy.

Applying *Aloe Vera* topically to the irradiation area will rapidly accelerate the healing response. Consuming *Aloe Vera* leaf gel internally will also help heal radiation burns.

Aloe Vera for post operative care

The post operative period is a period immediately after a surgery. It can also be a worrisome and very painful or at least uncomfortable time for the patient. Care for proper healing is essential to avoid secondary infections and reduce stress on the body as it continues to heal and restore itself to complete health. Certain herbal remedies and complementary medicine treatments can help reduce inflammation, the risk of infection, pain, discomfort, and the likelihood of needing further surgical interventions.

Aloe Vera is one of the top most used postoperative supplements. *Aloe Vera* has been using for centuries to cure all manner of ailments. Specifically related to surgery, it heals skin as good as any pharmaceutical product would. It is used for the treatment of burns and has been known to be a healing for post operative sutures and scars.

Aloe Vera for stretch marks

Stretch mark, also known as striae, is a kind of scarring that occurs when your skin is stretched beyond its capacity. It can happen because of pregnancy or excess weight loss or even weight gain. They start off as pinkish lines and might appear inflamed when new. However, with time they tend to fade and become white, pretty close to your natural skin tone.

Aloe Vera is full of skin benefits and is known as a wound healer for many skin problems across the globe. It contains a wide variety of nutrients that are good for our skin. It can surely help in the sustenance of the skin tissues and restore them to good health. This natural ingredient not only prevents stretch marks but also eliminates them naturally. The vital enzymes, minerals, vitamins and fatty acids present will help in the faster healing of stretch marks. Its plant collagen content will improve the skin's elasticity. When applied in the initial stages, the marks can fade away completely. In case you have had stretch marks on your skin for a while, this will help fade them sooner than you can imagine. This plant is your skin's best friend. Apply *aloe Vera* leaf gel directly on the affected area to get rid of stretch marks, and for best results apply 3 to 4 times a day.

Aloe Vera for learning, and memory improvement

Brain continues to change in adulthood as it matures over time and the cognitive abilities also changes. This is a complex process, involving multiple life factors, while, the thinking abilities are best in age 18 to 19. Short term memory and ability to handle pressure lowers after 25, and the ability to learn steadfastly trudges downwards in years as the brain cells dies off without getting replaced. Brain power, innovation and creativity are all interlinked.

The brain skills involves working memory, pattern recognition, abstract thinking and a bunch of various other abilities, which are analyzed to examine the state of brain. Certain herbal memory booster supplements can be taken to get clear thinking, to improve quick memory, calculations and reduce impact of stress on brain cells. These extracts, if taken regularly for two to three months can help to prevent physical debility caused by a depressed brain. These extracts can enhance long term and short memory, cognition, understanding, pressure handling and even help in preventing the condition of nervousness.

Aloe Vera is one of the best herbal memory booster supplements, which have a wide variety of biomolecules that stabilizes brain cells and can provide the brain to enhance memory, brain power and get neuro protective effects.

Aloe Vera and cancer

Aloe Vera leaf gel enables the body to heal itself from cancer and also from the damage caused by radio and chemotherapy that destroys healthy immune cells crucial for the recovery. *Aloe Vera* acts as radiation protectors and inhibits testicular damage from gamma radiation and reduces cancer. *Aloe Vera* leaf contains anthraquinones, saccharides, vitamin E and C, zinc, enzymes, acetyl salicylic and others. Acemannan is the major carbohydrate fraction obtained from *Aloe Vera* leaf. This fraction promotes wound healing, has antiviral, anticancer and immune stimulation effect. Compounds extracted from *Aloe Vera* have been used as an

immunostimulant that aids in fighting cancer. *Aloe Vera* emodin, an anthraquinone, has the ability to suppress or inhibit the growth of malignant cancer cells making it to have antineoplastic properties.

Aloe Vera for diabetes

Type II diabetes is one of the leading causes of death worldwide. Studies have shown that diabetics appear to have decreased antioxidant defense capability with lower levels of specific antioxidants such as vitamin C and E or reduced activities of antioxidant enzymes. Researchers have found that aloe plant polysaccharides have the potential to control blood sugar, stimulate the body's own antioxidant production and even lower cholesterol. It lowers glucose and triglycoside levels in diabetic patients. Aloe polysaccharides improve the property of immune cells and are also very effective to eliminate waste and other toxins. *Aloe Vera* juice enhances absorption of nutrients and maintains the sugar balance in blood by improving digestive functioning. *Aloe Vera* may enhance the action of the drugs or herbal preparations used with insulin for a diabetic.

Aloe Vera for hepatitis

A healthy liver can perform its many life-important functions most properly. The liver cleanses the blood making sure that toxins are neutralized. It also produces gall bladder fluids which are important for the metabolism of fat. Furthermore it stores glucose by converting it into glycogen. The liver is connected to the pancreas and gall bladder. It directs a portion of the waste materials into the bile. Bile helps to eliminate waste and fat to render it soluble facilitating digestion. *Aloe Vera* leaf gel helps in maintaining and restoring stomach acid balance, beneficial for liver and helps in recovery of chronic hepatitis. *Aloe Vera* Juice benefits people with liver problems in several ways and improves its ability.

Aloe Vera for AIDS

Acemannan present in *Aloe Vera* juice is having antiviral and immune modulating properties. A daily dose of minimum 1200 mg of active ingredients of *Aloe Vera* showed substantial improvement in AIDS symptoms. Its healing powers extend to soothing internal wounds and burns such as the damage done to the internal organs by high potency drugs of AIDS. *Aloe Vera* contains glucomannan, 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. 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. Acemannan improves cellular metabolism by normalizing cellular function and regulating the flow of nutrients and wastes in and out of the cells.

Aloe Vera in weight loss

It has been scientifically proven that regular intake of aloe vera gel or juice will help to increase the metabolism and thus reduces Body Mass Index (BMI), which means carbohydrates and fats will turn to energy instead of storing in the body as visceral fat. It acts as a natural anti-oxidant that slows down the growth of free radicals in the body. It also has a rich source of polysaccharides that strengthens the immune system and keep the internal system toxic – free for healthy weight loss. It is enriched with many essential vitamins (A, B1, B2, B6, B12, C & E), niacin, folic acid, etc. which helps to burn the calories to reduce your body fat. It is a natural laxative that improves digestion, forces the food out of the colon (colon cleanse), prevents constipation and detoxifies the body to prevent the storage of fat as weight gain. It has aloin, a substance that stimulates the gut activity and cleanses the system deeply and thoroughly. Balancing the blood sugar levels and managing diabetes is one main thing for maintaining a healthy weight. *Aloe Vera* has phytosterols that will do this by promoting slow absorption of sugar into the body. It stimulates the production of collagen protein in which our body spends a lot of energy in assimilating the collagen protein and this energy spend will help you lose weight. This collagen protein helps in speed up of metabolism that in turn digests the food and turns into energy rather than storing in the lower intestine. It contains 75 active vitamins, minerals, enzymes, amino acids, salicylic acids, carbohydrates and phytochemicals (saponins) which are very essential for losing weight and avoid the problems associated with obesity. It acts as an appetite suppressant that curbs your appetite and keeps you filled for a longer time. This prevents overeating and thus promotes weight loss. It also reduces the glucose levels in the bloodstream. Consuming half glass of *Aloe Vera* juice every day will reduce body weight considerably.

CONCLUSION

In late years, ethno botanical and traditional uses of natural compounds, especially from plant origin is gaining much importance as they have zero percent or minimum side effects and no damaging internal organs and are well tested for their efficacy safe for human use. Many Indian herbs are being used in traditional practices to cure various human ailments. *Aloe Vera* has an important place among traditional medicine. Our team have surveyed about the usage of *Aloe Vera* for various purposes in the remote places of Karimnagar and have learned much of the preparative methods from tribal people. We hope the information given in this article by our team will give good knowledge to the world about the importance of using *Aloe Vera* for medicinal purpose than using synthetic chemicals. Our team will continue doing research work on *Aloe Vera* and find some more secrets and medicinal uses of *Aloe Vera* and continue publishing information in near future.

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