

## Aloe Vera: A Miracle Plant

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### INTRODUCTION

Aloe vera belongs to the family Liliaceae and genus Aloe and it can survive for 50 years under favorable conditions. Since more than 5000 years it is used to cure many human diseases. Aloe vera have applications in homeopathic as well as in allopathic medicine. Plant contains minerals, sugars, fatty acid, enzyme vitamins, lignin and amino acid. (Riaz, et al., 2021).

In history there are evidences for the use of aloe vera in different region like Persia and Egypt, Greece, Rome, India, Africa, China, Korea and Japan. Later, with the Spanish discovery of the Americas, aloe vera completed its spread throughout all inhabited continents of the world. Currently aloe vera is growing worldwide in tropical and subtropical areas but it was originated from Africa in hot and dry weather conditions .Currently there are over 360 known species of aloe (Park et al., 2006).

According to world health organization report still 80 percent of people depend mainly on traditional medicine. Nowadays medicines are derived from natural sources and act same as natural medicine (Joseph et al., 2010). The plant show good therapeutic potential because it have, hepatoprotective, anti-oxidant, anti-aging, antifungal potential, anti-diabetic, antitumor, antiseptic, anti-ulcer, , antiviral, anti-inflammatory ,analgesics and anti-bacterial. (Riaz, et al., 2021).

Aloe can be found in sprays, jellies, ointments, lotions, pills, drinks, liquids and creams. Aloin is a yellow sap of aloe vera used as laxative ingredient commercially. This product became synonymous with the name “Aloe” and recorded in the trade, technical, and government literature during the early 20th century. In 1964, Dr. Bill C. Coates a practicing pharmacist in Dallas, Texas, USA, tells the importance of aloe vera. He convinced the plant’s “Gel” could be extracted and used without losing its potency (Manvitha et al., 2014).

Nowadays, Aloe vera are widely used to make the different types textile composite which are involved in the field of, tissue engineering, medical textile, wound healing, health care textile, wearable electronic textiles, UV protective textiles and so on .As it have gummy and succulent enzymatic characteristics it is used in printing and in pretreatment Aloe gel is also used as eco-friendly dye because it contains salty substance (Mondal, et al., 2021).

#### PHYTOCHEMISTRY OF ALOE VERA

In the Aloe vera there are 200 types of molecules present in it.

- 98% water
- The total solid content of aloe vera gel is 0.66%
- Soluble solids are 0.56% with some seasonal fluctuation

On dry matter basis aloe gel consists of

- Polysaccharides (55%)
- Sugars (17%)
- Minerals (16%)
- Proteins (7%)
- lipids (4%) and
- Phenolic compounds (1%)

The aloe vera gel contains many vitamins including

- Antioxidant vitamins A, C and E
- Vitamin B1 (thiamine)

- Vitamin B2 (riboflavin)
- choline and folic acid are also present

At least six enzymes are present in the aloe vera gel including cellulase, carboxypeptidase, bradykinase, amylase, oxidase and catalase (Joseph et al., 2010).

#### COSMETIC USES

There are many cosmetic products in the market which use aloe vera in varying concentration from 1to98%. This plant can hold moisture for long time and have soothing effect also. So, it is used such as moisturizers, sun lotions, toothpastes, mouthwash, deodorants and shampoos, cleansers. In the United States the Food and Drug Administration (FDA) has approved the external use of Aloe vera gel only as cosmetic ingredient (Christak et al., 2010).

#### HEALTH BENEFITS OF ALOE

There are several aloe species used for medical purpose like Cape aloe, (Aloe ferox Miller, Aloe africana Miller, Aloe spicata Baker) which is found near the African Cape Town region, Socotra aloe (Aloe perryi Baker), which can be found in the African Somalia and Socotra Island region, Curacao aloe (Aloe barbadensis Miller), which is found in parts of Mexico, Central America, and many more (Park et al., 2006).

Table: 1

Pharmacopeia	Species	Usage	Major Component
JP, BP, EP, etc.	Aloe ferox Miller Aloe africana Miller Aloe spicata Baker, and their Hybrids	Laxative	Anthraquinones
USP	Aloe barbadensis Miller (Aloe vera)	Laxative	Anthraquinones

#### PHYTOPHARMACOLOGICAL PROPERTIES:

There are many phytopharmacological properties of aloe vera given in fig: 1 (Joseph et al., 2010).

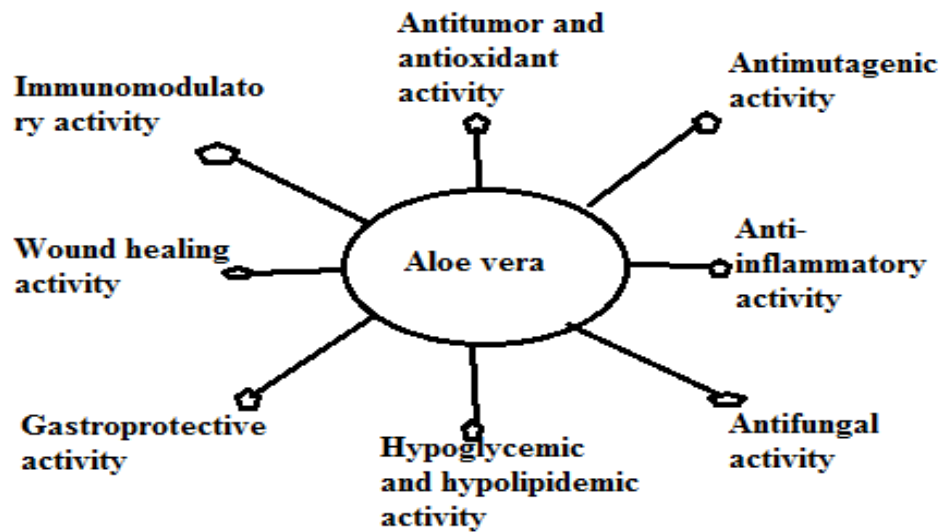


Fig: 1

### ALOE VERA GEL EXTRACT PREPARATION

Fresh and healthy leaves of aloe vera of length 75cm to 95 cm were washed with fresh water. Then cut the leaves transversely into pieces. The upper hard layer should be selectively removed. Homogenize the solid gel present in the center of the leaf. Lyophilize the thick, mucilaginous and straw colored homogenate. Then by using 95% ethanol extract the lyophilized sample. In a rotary evaporator the filtrate was evaporated to dryness. For further use the residue was stored at 4°C in dry sterilized small containers. An aqueous suspension which is the form customarily used in folk medicine was prepared by dissolving suitable amount of ethanol free extract of Aloe vera leaf gel to get the desired concentration. The drug solutions were prepared freshly each time and administered intragastrically. The dosing schedule used was once per day (Rajasekaran et al., 2005).

### CONCLUSION

There are many bioactive compounds were present in the leaves of Aloe vera. Since this plant is used in the treatment of different human diseases and it have phytopharmacological properties also, efforts should be geared up at characterizing the

entire bioactive agents present, in the aloe vera plant for their full utilization. (Rajasekaran et al., 2005).

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