



## Aloe Vera (*Aloe barbadensis*) Cultivation in India

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**A**loe (*Aloe vera*) is an important and traditional medicinal plant belonging to the family Liliaceae. It is indigenous to Africa and Mediterranean countries. It is reported to grow wild on islands of Cyprus, Malta, Sicily, Carary cape, Cape Verde and arid tracts of India. This is a hardy perennial tropical plant that can be cultivated in drought areas. But its potential is yet to be exploited. Aloe, despite being identified as 'a new plant resource with the most promising prospects in the world', remains a disregarded plant. It is scattered in the wild, along the coast of southern India. China, U.S.A., Mexico, Australia and some of the Latin American countries are the major producers and exporters of aloe products. These countries are exploiting the plant potential with the growing cosmetic and nutraceutical market. In India it is found in Punjab, Andhra Pradesh, Arunachal Pradesh, Assam, Gujarat, Haryana, Jharkhand, Kerala, Madhya Pradesh, Maharashtra, Manipur, Mizoram, Nagaland, Orissa, Rajasthan, Uttaranchal states. Aloe can substitute synthetic ingredient used in cosmetic industry very competitively and is finding increasing use in the ever growing consumer product segment.

### Soil

The plant can be grown in a variety of soils ranging from sandy coastal soils to loamy soils of plains. It cannot withstand in water logging conditions. It gives best results when grown under well drained loam to coarse sandy loam having pH ranges up to 8.5.

### Popular Varieties with their Yield

There are around 150 species of Aloe belonging to family Liliaceae. Out of which *Aloe barbedensis*, *A. chinensis*, *A. perfoliata*, *A. vulgaris*, *A. indica*, *A. littoralis* and *A. abyssinica* are commonly grown varieties and have most therapeutic value.

**IC111271, IC111269, IC111280, IC111273, IC111279 and IC111267:-** Released by National Botanical and Plant Genetic Resource, ICAR, Delhi. It has high aloin content.

**IC111267, IC1112666, IC111280, IC111280, IC111272 and IC111277:-** Released by National Botanical and Plant Genetic Resource, ICAR, Delhi. It contains high gel contents.

**AL-1:-** Released by Central Institute of Medicinal and Aromatic Plants, Lucknow.

### Land Preparation

Roots of Aloevera did not penetrate below 20-30 cm so depending upon soil type plough the land thoroughly and bring soil to fine tilth. At time of last ploughing add 6 ton per acre of well decomposed cow dung in soil. Forms ridge and furrow for planting of suckers at 45 or 60 cm apart. If necessary irrigate the field. Plant suckers at 40 or 30 cm apart.

## Sowing

**Time of sowing:** Plant suckers in July-August for better growth. Under irrigated conditions, sowing can be done around the year except in winter month.

**Spacing:** Normally spacing of 45 cm x 40 cm or 60 cm x 30 cm is followed.

**Sowing Depth:** Plant three to four month old suckers in a pit having depth of 15 cm.

**Method of sowing:** Aloe Vera is obtained by cutting the leaves at their base and letting yellow, bitter Juice drain out. The water is evaporated off from the juice by heating and that result to light to dark brown mass.

**Seed Rate:** Usually about 22000 suckers are required for one acre land.

**Seed Treatment:** Use healthy suckers for cultivation. 3-4 months old suckers having 4-5 leaves are used as planting materials.

## Fertilizer

At time of land preparation, apply 60-80 qtl per acre of well decomposed cow dung. Apply basal dose of N:P:K@20:20:20 kg/acre in form of Urea@44 kg, Super Phosphate@125 kg and MOP@34 kg per acre.

## Weed Control

Do weeding and earthing up and keep field weed free. Weeding is to be done at proper intervals. Weeding is mainly done twice in a year.

## Irrigation

In summer or dry conditions, apply irrigation with interval of 2 weeks. In rainy season, it does not require any irrigation and in winter season, less irrigation should be given as the plant not take up much water. First irrigation must be done immediately after suckers get planted. Do not overwater the fields as they are harmful for crops. Remember that before watering the crops again let fields dry first. Before irrigation drenching should be done so that extra water will runs out.

## Plant Protection

### A) Pest and their control:

**Mealy bug:** Caused by Lepidocephalus and Pseudococcus. The leaves start yellowing and withering. Application of Methyl parathion@10 ml or Quinalphos@20 ml in 10 Ltr of water is done on roots and shoots of the plant.

### B) Disease and their control:

**Black brown leaf spots:** Black Brown spots are characterized by reddish- brown spores that occur in oval or elongated pustules. The disease can develop rapidly when free moisture is available and temperatures are near 20°C. Successive generations of urediniospores can be produced every 10-14 days if conditions are favorable.

**Anthracnose:** It is a disease that causes many diseases such as dieback, twig cankers, blotches, defoliation and shoot blight. Spraying of 70% Neem oil helps to cure from this disease.

## Harvesting

Aloe Vera crop take 18-24 months to fully mature. In year time, it bear yellow color flower. It can be harvested 4 times a year. 3-4 leaves cut from each plant. Carry out picking in morning or in evening. The leaves are regenerated and thus crop can be harvested up to 5 years.

### **Post-Harvest**

Allow freshly harvested plant to wilt and loose moisture in the field before transporting. Wilting is noticed normally within 24 to 72 hours. But the plant should be kept dry and cool to prevent fermentation or mould growth. A concrete floor under shade can be used.