

Abstract for Aloe Vera Processing



This abstract contains basic information for Aloe Vera cultivation, processing and market aspects



ALOE VERA - INTRODUCTION

The Aloe plant is considered to be out of Liliaceae and Aloeaceae family, which consists of numerous different species. Among these species, there is only one variety that has a legendary medical reputation dating back thousands of years. It's the "Aloe Vera" plant, often named with its botanic designation "*Barbadensis Miller*". Aloe is supposed to be derived from Arabic "alloeh", meaning "bitter" because of the bitter liquid found in the leaves. "Vera", which means "true" in Latin, has been added to this particular specimen in order to distinguish its primacy among the aloe plants. Only the authentic "*Aloe Vera*" provides the potent therapeutic effects, which nature has built in it. Aloe is native to the drier parts of

Africa, especially South Africa's Cape Province and the mountains of tropical Africa. It also grows in other subtropical and tropical locations, including South America and the Caribbean. It needs this warm climate as it cannot survive freezing temperatures.

Aloe Vera obtains its cactus-look due to the dry area it grows in. Because of the long periods without rain and strong sun shine it needs to build up her own water- and nutrition storage in order to assure a proper supply.



According to a report on aloe worldwide cultivation published by IASC (International Aloe Science Council), there are approximately 23,600 hectares of aloe being cultivated at worldwide level, whereas 19,100 of them are located in the Americas.



ALOE VERA – INTRODUCTION

This report gives the pole position in 2004 data to Mexico with 10,700 hectares, then to Dominican Republic with 3,500 and after that, Venezuela with 3,400 hectares. But numbers are growing at an interesting pace.

Aloe Vera-Botanical Aspects

Aloe grows to the height of 60 to 90 cm / 1,5 m. Almost everything are leaves that sit on a strong fibrous root close to the ground. Her 40 to 60 cm long, pale green, fleshy, thick, elongated and spiny leaves build a leaf rosette and are 6 to 10 cm wide at the sprout. The connection to the Tree Lilly does go unnoticed during the springtime, when aloe plants blossom with beautiful tubular shaped yellow to purplish drooping flowers.

The fruit is a triangular capsule containing numerous seeds. Aloe Vera can be harvested by hand, with the leaves cut off at the base of the plant.

You can usually harvest aloe plants 4 times per year. You should take around three leaves per plant. This makes a total of 12 leaves per plant per year. At an average weight of 1 kg you can expect an annual return of 60,000 kg of aloe leaves per acre. This depends on whether you are hand filleting, the skill of your employees, whether you are using an automated extraction machine, however you should yield at least 43 to 45 percent from a 1 kg aloe leaf.

Aloe vera Processing

According to the favored end differ-

ent steps can be chosen or added. One benefit of Aloe processing is that you can begin with a cost efficient production line which can be extended easily in regards to capacity and product options (aloe powder, aloe drinks, aloe tablets etc.)

ALO VERA PROCESSING



ALO VERA PROCESSING

Basic requirements

- A soaking tank to loosen the dirt from the leaf.
- An aloe leaf washing machine or hand washing station to wash each individual leaf.
- A sanitizing rinse to sterilize the leaves.
- Trimming the aloe leaf to remove the ends and sides (Filet only).
- Filleting of aloe leaf to remove the gel (Filet only).
- Grinding to liquefy the gel.
- Pulp separation to remove the cellulose pulp.
- Stabilization of aloe gel to achieve microbial protection.
- Charcoal decolourization to remove colour and odour.
- Filtration to remove charcoal.



Aloe Vera Application

As already mentioned before *Aloe Vera* is found to have various medical and cosmetic properties. Nowadays, a lot of *Aloe Vera* products are available and because of its multiple features Aloe Vera can be processed into various and products.

In order to get a good overview, the products can be divided into three groups:

1. Health/ Medical Products:

You can find *Aloe Vera* as an ingredient in many different pharmaceutical products for many different treatments. But *Aloe Vera* is also an extraordinary and a valuable food supplement.

- Pharmaceutical products
- Tonic
- Tablets / Capsules / Fizzy tablets



ALOE VERA APPLICATION

2. Cosmetics products:

Aloe Vera products are considered to be real oases of liquidity. They provide the skin with the needed liquidity and coolness. Below, you can find only a few examples of the wide pallet of cosmetical products:

- Shampoo
- Hair conditioners / Masks
- Hair tonics, Dressings etc
- Eyeliner
- Sun blocker cream / lotion / spray

3. Food:

The benefits of *Aloe Vera* can also be experienced by drinking tea or drinks with different flavour

- Instant drink powder (different flavours.
- The benefits of *Aloe Vera* can also be experienced

by drinking tea or drinks with different as well)

- Tee
- Drinks (with different flavours)



Aloe Vera Market

The world wide cultivation of *Aloe Vera* is estimated to have a volume of 23,589 ha. The industry size for *Aloe Vera* raw material is estimated to be about \$125 million dollars. The volume of the industry for finished products containing *Aloe Vera* is alleged to be about \$110 billion. The number of suppliers and distributors has grown significantly in the past few decades. And many of them publish quite good sales growth. World market prices for raw Aloe Vera products differ extremely according to the application and quality. Although Aloe Vera processing industry is concentrated in the middle and

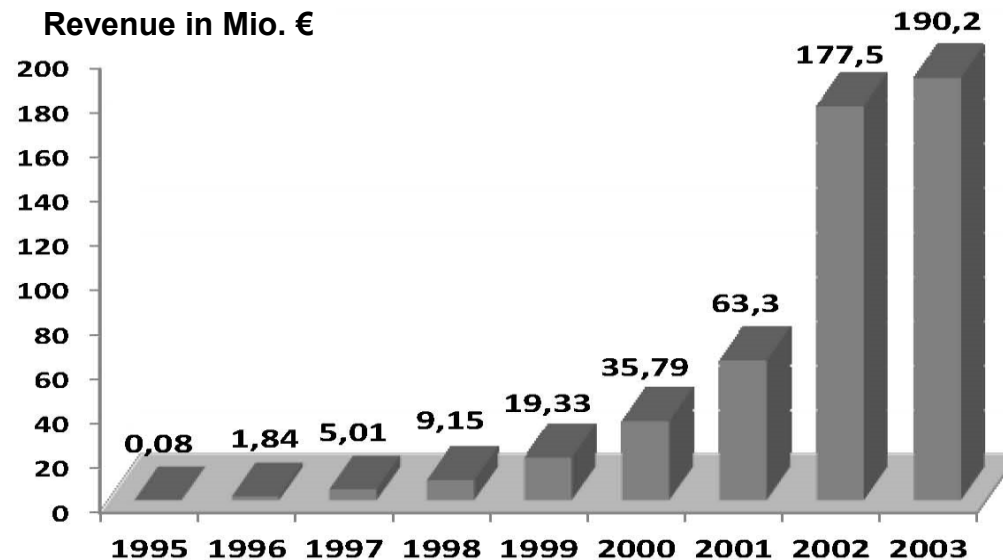
ALOEVERA MARKET

south of the American continent, 1 kg spray-dried Aloe Vera powder 200x (used as benchmark) of that region costs up to 90 \$. As an example for the rapid growth please have a look at the graphic where the tremendous increase of the *Aloe Vera* market in Germany is shown.

The rapidly and constantly growing healthcare market especially the self treatment sector based on herbal medicine and cosmetics, leads to a rising demand of *Aloe Vera* products.

Botanical Extract Demand in Cosmetic and Toiletries from 1989 to 2008:

Item	Demand Value (Million US \$)			
	1989	1993	1998	2008
Aloe Extract	38	46	63	115



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