



## Beneficial Properties Of Pineapple For The Human Organism.

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### ABSTRACT

Pineapple is a plant with a soft body, about 1-2 meters in height and width. A pineapple flower is an inflorescence that usually develops from an apical meristem. Produces 50 to 200 individual flowers during flowering. The flower is spiral-shaped and covered with a crown of about 150 short petals. . Pineapple fruit is rich in vitamins A, B1, B6 and C, copper, manganese and potassium.

### Keywords:

Pineapple, plant, fruit, vitamin, toxin, enzyme

Pineapple is a soft-bodied plant with a height and width of about 1-2 meters. Due to the arrangement of the leaves, the plant has a spiral morphology. The stem is a distinct central cylinder, erect and bulbous, about 25–50 cm long, 2–5 cm at the base, 5–8 cm at the top, and contains nodes and internodes [1]

A pineapple flower is an inflorescence that usually develops from an apical meristem. It produces 50 to 200 individual flowers during flowering. The flower is spirally shaped and covered with a crown of about 150 short petals. It is called "red heart" because of its red color in the flowering stage. The flowers are monoecious and bisexual, consisting of an anther and a seed (Purseglove 1972). Individual flowers consist of three petals and stamens, six stamens (about half the length of the petals), and one seed. The ovary contains three parts where the seeds grow. The petals are white at the base, purple-blue at the tip and tongue-shaped. The pollen-producing part of the flower is double-layered and contains many pollen grains, which are sticky, spherical in shape, bilaterally symmetrical, and contain two pores [2]. There

are big differences in size. Pineapple flowers are not cut; the flower develops parthenocarpically and turns into a berry. The fruit of the pineapple is a seedless syncarp and polygonal in shape. The fruit can weigh about 2.3 kg or more. Ripe fruit has a yellow peel and a pleasant smell. The color is light yellow to golden yellow, sweet and juicy. Seeds are rarely formed and appear flat and curved on one side and pointed on the other. They are about 3-5 mm long and 1-2 mm wide, covered with a hard seed coat. The fruit usually contains a bunch of small leaves that can be used for vegetative propagation [4].

### Chemical composition of pineapple fruit

**Toxins :** There are no toxins in the pineapple plant. However, when eaten raw and in large quantities, pineapple can cause a burning sensation on the lips and mouth and can also cause stomatitis. That is, it causes inflammation of the mucous membrane of the mouth, cheeks, gums, lips, tongue and mouth. Excessive consumption of pineapple can cause disease in the digestive tract. Pineapple does not contain harmful phytochemicals [5]. **Beneficial phytochemicals:** The presence of proteolytic

enzymes such as bromelain in pineapple juice was discovered in 1891. Its highest concentration, that is, bromelain, is found in the pulp and stems of ripe pineapples. Bromelain is widely used in food production, pharmaceutical industry and diagnostics and laboratories. The main production centers of bromelain are located in Japan and Taiwan. Bromelain consists mainly of cysteine proteases, with minor amounts of other proteases including peroxidase, acid phosphatase, amylase, and cellulose. Cysteine Among the proteases found in pineapple stems are Ananain, Comosain, and Stem bromelain, the cysteine protease found in pineapple fruit is called fruit bromelain. Bromelain has the property of increasing immunity, increasing the activation of T lymphocyte cells [4]. Bromelain, found in pineapples, is a non-toxic inhibitor of cell signaling and cytokine production that helps block IL-2. In production, but does not affect cell proliferation. These properties are useful in the therapeutic treatment of inflammation, trauma and hypersensitivity diseases. Bromelain also has anti-inflammatory and analgesic properties and can be used as a safe alternative treatment in osteoarthritis. In addition, in reducing the clinical and histological severity of the colon, anti-inflammatory in inflammatory bowel diseases, respiratory helps in the treatment of allergic diseases of the airways and impaired development of altered lymphocytes. It can also be used with similar effects in the treatment of asthma and hypersensitivity diseases in humans. The edible portion of pineapple fruit (60% of fresh fruit) is 85%. water, 0.4% protein, 14% sugar, 0.1% fat and 0.5% starch. The amount of sugar varies significantly during the ripening process, which mainly depends on the variety. Pineapple fruit is rich in vitamins A, B1, B6 and C, copper, manganese and potassium.

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