

# Medicinal and Nutritional properties of DRAGON FRUIT (*Hylocereus spp.*)

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## Introduction

Dragon fruit is often considered a tropical “Supper food” because of its nutritive and medicinal value. It is also known as “pitahaya” if it comes from the very closely related genus *Stenographers*. The actual Dragon fruit is the cactus genus *Hylocereus* are originally native to Mexico. They were transplanted to Central America, probably by Europeans (Morton, 1987). These cacti are cultivated in Southeast Asia mainly Thailand and Vietnam, The United States, Israel, Australia, Cyprus and the Canary Islands. Pitahaya producing *Hylocereus* species include *Hylocereus undatus*, *Hylocereus costaricensis*, *Hylocereus megalanthus*, etc. Fruits of the Dragon fruit are sweet with leathery skin. *Hylocereus* are the tall cacti species with flowering fruit. It is a veining, terrestrial or epiphytic cactus with fleshy stem. The plant grows climbing the support pole or other tree using aerial roots. Dragon fruit stems are scandent (climbing habit), creeping, sprawling or clambering and branch profusely with generally three ribs and undulating horn-like margins with areoles, bearing spines. Scented, nocturnal, greenish-yellow or whitish and rarely rose-tinged flowers are produced on the succulent stem. The dragon fruit is oblong to oval, to 6–12 cm long, 4–9 cm thick, mostly red with large bracteoles. It has thin, leathery rind with sweet flavoured white or red pulp inside. Very small, black coloured edible seeds are embedded in the pulp. The fruit normally weighs from 150 to 600 g. Dragon fruit grows best in dry, tropical and subtropical climates enduring temperatures up to 40 °C. In wet tropical zones plants grow well but sometimes have problem setting fruits reliably. The dragon fruit sets on the cactus-like trees 30–50 days after flowering and can sometimes have 5-6 cycles of harvests per year. Dragon fruit tree is used as ornamental vine in

gardens and landscapes. It is also used as flavoring agent in drinks, juices and Alcoholic beverages sorbet, smoothie and pastries.



### Objectives:

Now-a-days, Dragon fruit is gaining popularity in India as a medicinal and nutritious fruit. It is being eaten with a say of high nutritional properties and remedial over various health problems. The major aim of this study is to explore the research evidences for the assumptions that dragon fruit has high nutritive and medicinal properties.

### Medicinal and Nutritional properties of fruit:

Dragon fruit is considered as a heavenly fruit on the earth with high nutritional and medicinal values. It is considered to lower blood sugars. Eating fruit is considered beneficial for carbohydrate metabolism, strengthening bones and teethes, heart tissues, healthy blood and tissue formation, strengthening immune system, faster healing of

bruises and wounds, respiratory tract infections and even as a mild laxative due to substantial fiber content. Dragon fruit is believed to able to lower cholesterol concentration, to balance blood sugar concentration, to prevent colon cancer, to strengthen kidney function and bone, to strengthen the brain workings, increasing the sharpness of the eyes.

### Fruit pulp:

Dragon fruit has many valuable properties. The fruit pulp contain 87.08 g moisture, 1.1g protein, 0.4 g fat, 11.0 g carbohydrate, 3.0 g fiber, 20.5mg vitamin C, vitamins 0.04mg B1 and 0.05mg B2 , It's also rich in antioxidants and minerals like calcium(Ca) 8.5mg, iron(Fe) 1.9mg , potassium, sodium, etc. (Rahmawati and Mahajoeno, 2009) have reported vitamin C content as high as 6000mg/100 g of fruit pulp.

### Fruit Seeds:

The seeds of dragon fruits are high in polyunsaturated fats (omega-3 and omega-6 fatty acids) that reduce triglycerides and lower the risk of cardiovascular disorders. Eating dragon fruit can help the body to maintain such normal function as ridding the body of toxic heavy metals and improved eyesight. Lycopene, responsible for the red color in dragon fruit, has been shown to be linked with a lower prostate cancer risk.

### Pigment betalains:

Dragon fruit is also considered good source of food dye or food colouring agent. Food colouring agents are required to compensate the colour losses during processing. The health-conscious consumers are preferring natural food dyes over the synthetic one.

Dragon fruit is rich in pigment betalains comprising betacyanins and betaxanthins. Rebecca et al. (2008) not only extracted these pigments but reported great tolerance of these pigments towards the factors causing colour loss during processing. recommended refrigeration at 4°C without light for preserving the dragon fruit peel dye colour upto 3 weeks. Rodriguez et al. (2016) revealed that the antioxidant, anti-inflammatory, antiangiogenic and GST-inducing activities of betalains from red dragon fruit peels were enhanced through carbohydrate encapsulation.

Dragon fruit is gaining popularity in India as a nutritious and medicinal fruit. It is being eaten with a say of high nutritional value and remedial over various health problems. After exploring the available research evidences related to high nutritive and medicinal values of dragon fruit, it can be concluded that dragon fruit is rich in nutrients like vitamin C, B1, B2, B3, high fibre content, minerals like Ca, Fe, P, less carbohydrates and no fats, seeds rich with 50 per cent of essential fatty acids namely, linoleic acid and linolenic acid a necessity in human metabolism and cannot be synthesized from other food components by human body. All these factors are rendering it beneficial for various diseases. Even the stem of dragon fruit tree is found possessing medicinal values. As premature stem of dragon fruit contains higher ascorbic acid, it may have been helpful in preventing the risk factors of certain diseases. Fresh and dried dragon fruit skin both are rich in pectins and betalains making it natural food thickener and natural colouring agent. Of course, a very scanty research references available on the nutritional composition of dragon fruit have hampered the concrete conclusions over some aspects.