

Dragon Fruits as a Functional Food

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Recently, a new exotic fruit has entered the tropical fruit market. A dragon fruit is also known as a strawberry pear or pitahaya is a tropical fruit known for its vibrant red skin and sweet, seed-speckled pulp. There are a wide variety of dragon fruits that are derived from *Hylocereus* species, belonging to the family Cactaceae and offering attractive and promising functional properties. In recent years, dragon fruits have gained popularity due to their nutritional and medicinal properties. The nutritional content of dragon fruit makes it one of the tropical super foods. As a super food, dragon fruit has a low calorie count but is high in fibre, antioxidants, phytonutrients, vitamins, and minerals along with healthy fatty acids and probiotics. Fresh dragon fruit contains approximately 82.5 to 83.0% moisture, 0.16 to 0.23 protein, 0.21 to 0.61 fat, and 0.7 to 0.9% fiber. 100g of fresh fruit pulp contains 6.3 to 8.8 mg calcium, 30.2 to 36.1 mg phosphorus, 0.5-0.61 mg iron and 8-9 mg vitamin C.



Figure 1: (a) Fruit of *Hylocereus. polyrhizus* (b) Fruit of *Hylocereus. undatus*

A high level of antioxidant activity is attributed to dragon fruits due to their phenolics and betacyanins content. Fruits with pink flesh have higher phenolics and flavonoids content compared to white fleshed fruits. There are a variety of antioxidants in dragon fruit, such as betalains and hydroxycinnamates, and the fruit contains high levels of vitamin C. Vitamin C

strengthens the immune system by stimulating white blood cell defence against pathogen invasion. It also contains a high level of water-soluble fiber and has significant amounts of potassium, phosphorus, sodium, and magnesium, higher than that of mangosteens, mangoes, and pineapples. The red layer of the fruit has rich sources of vitamins including B1, B2, B3, C and minerals.

The pulp is juicy and contains numerous small black seeds. Among the essential fatty acids found in seeds, 50% are linoleic acid and linolenic acid that are good for the heart and reduce the risks of cardiovascular diseases. The natural oils extracted from the seeds can serve as a mild laxative as well. Although dragon fruit is regarded as a functional food, there is still a lack of information about the levels of bioactive components in fruits of different origin. Various factors determine the content and amount of bioactive compounds in dragon fruits, such as genotype, environmental conditions, maturity, and harvesting location.

The inclusion of dragon fruit in the daily diet may have beneficial effects on stress-related and inflammation disorders, as well as helping to prevent high blood pressure, diabetes, stomach and intestinal problems, and colon cancer. Compared to dragon fruit flesh, the premature stem of dragon fruit has a higher level of ascorbic acid. This may help prevent certain diseases like scurvy, anaemia, and weakness. Red dragon fruit having much iron to increase haemoglobin and erythrocyte levels in pregnant women. There are high levels of calcium and phosphorus in dragon fruit, which help to reinforce bones and play a significant role in tissue development. The flesh of dragon fruit is rich in polysaccharides and mixed oligosaccharides, which help to promote the growth of Lactobacilli and Bifidobacteria. Known as probiotics, these gastrointestinal microflora suppress gastrointestinal pathogen growth. Additionally, dragon fruit acts as a natural probiotic. Globally, this fruit is being cultivated rapidly due to its disease prevention and medicinal properties, as well as its abundance of vitamins and nutrients.

References

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