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DRAGON FRUIT

(Hylocereus spp.) [Article ID: SIMM0188]

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ragon fruit, also known as pitaya or pitahaya, is gaining popularity in many countries due to its vibrant colour and juicy pleasant taste. The benefits of dragon fruit for human health can be explained by its essential nutrients such as vitamins, minerals, dietary fibres and antioxidants. Dragon fruit is also an essential source of betacyanin which serves as a pigment with antioxidative red/purple properties. It is best eaten as raw fresh or dried fruit and sometimes used as a natural coloring agent in various drinks and beverages. Fruit and its young stems and fresh flower buds have been eaten as vegetables, while dried ones are used for local medicine. Fresh and dried skins of dragon fruit are rich in pectins and betalains, making it a natural food thickener and the natural coloring agent. Besides its use as a colouring agent, the processing agent is

highly dominated by its use in the preparation of ice cream, cookies, candies, jam, wines, shake, beverages or as flavor for all kinds of drinks and ingredients of various recipes.

Dragon fruit, which originated from Mexico and South America, recently introduced to India, is considered to be a promising remunerative fruit crop. It is getting tremendous popularity among growers because of its attractive fruit colour and mouth-watering pulp with edible black imbedded inside the pulp seed and nutraceutical value. It has attained the capacity to produce crop from 14-16 months after planting of stem cutting and maintained orchard productivity up to 20 years with long crop cycle from May-December in different flushes every year, strengthening its export potential. It is also a part of urban horticulture because of its beautiful nocturnal showy white flowers which can be used in moon garden. The fruit comes in three types, all with leathery, slightly leafy skin: Hylocereus *undatus* white flesh with pink skin, Hylocereus polyrhizus, red flesh with pink skin and pink skin and Hylocereus megalanthus white flesh with yellow skin.

It is a long day plant with beautiful night blooming flower that is nicknamed as "Noble Woman" or "Queen of the Night". The fruit is also known as Strawberry Pear, Pithaya, Night blooming Cereus, Belle of the night, Conderella plant and Jesus in the Cradle. Fruit is named as pitaya because of the bracts or scales on the fruit skin and hence the name 'Pitaya' meaning 'The scaly fruit'. It has ornamental value due to the beauty of their large creamy white flowers (25 cm) that bloom at night.

BOTANY

Dragon fruit belongs to the botanical family Cactaceae and genus Hylocereus. This

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genus is mainly characterized by climbing vine cactus with aerial roots that bear a glabrous attractive berry with large scales. Hylocereus spp. are diploid (2n=22). The dicotyledonous family Cactaceae comprises of 200 genera consisting of 1500-2000 species, found especially in the semi-desert, hot tropical regions of Latin America. Pitaya is a perennial, epiphytic, climbing cactus with triangular, fleshy, jointed green stems. Each stem segment is composed of three wavy wings with horny scalloped margins. The stem segments may grow up to 20 ft long. Each trough of the scalloped wings has one to three short spines, and some varieties are spinier than others. Aerial roots grow from the underside of the stems, providing anchorage for the plants to climb on walls, rocks, or trees. The night-blooming, yellowish green flowers are about 1 ft long and 9 inches wide, fragrant, bell shaped, and open during the early evening and wilt by daybreak. The flowers open rapidly at around 6:40-7:00 p.m. and with pollination completed, the flower begins to wilt. Pitaya is pollinated by moths in the evening, and hand pollination can enhance fruit set and size. Pitaya fruits are non-climacteric and they are sensitive to chilling injury. Fruits can be harvested 30 days after the fruit set, but it is better to delay harvest, to perhaps as much as 50 days, to allow more sweetness to develop. Dragon fruit plant has wide adaptability and grows well in slightly heavy texture soils. Plants are commonly

propagated by stem cuttings. Flower buds have started emerging 15-18 months after planting and takes 28-30 days for blooming.

Health benefits

This fruit is popular due to its nutritional value, which is a good source of minerals, glucose, fructose, dietary fiber and vitamins. It strengthens the immune system of the human body and is also used in the treatment of diabetes, heart diseases and in maintaining healthy body weight. The yield and nutritional value of dragon fruit vary depending on the species, cultivation practices, growing area and harvesting time. Dragon fruit peel has a high potential to be used as a natural dye. Numbers of commercial growers are gradually increasing in different countries due to getting a lucrative price of their product in the markets. It is a rich source of nutrition such as Vitamin C, calcium, and phosphorus. It has higher medicinal values like reducing hypertension, diabetes. Also it has beneficial effects in carbohydrate metabolism, strengthening of teeth and bones, and helps in formation of heart tissues. It balances the production of blood and its compositional value of total ascorbic acid, total dietary fibre, pectin and content iron reported to increase haemoglobin and erythrocyte level. It also reduces aortic stiffness, colon and prostate cancer. This draws the attention of medical studies toward its role in controlling various diseases and vital health-promoting factors.



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Dragon fruit is a low-calorie fruit that is high in fiber and provides a good amount of several vitamins and minerals. It offers 7 grams of fiber per serving, making it an excellent choice for meeting daily fiber needs. Dragon fruit contains several antioxidants that protect your cells from damage. These include betalains, hydroxycinnamates, and flavonoids. Dragon fruit may promote the growth of healthy bacteria in the gut, which is associated with a healthy gastro-intestinal tract. Dragon fruit's high supply of vitamin C and carotenoids may offer immune-boosting properties.

CONCLUSION

Dragon fruit has wide adaptability and become popular worldwide due to its nutritional value and health benefits. This fruit crop is grown around the year in subtropical and tropical countries under welldrained media to slightly heavy texture soils. This fruit is a good source of minerals, glucose, fructose, dietary fiber and vitamins. All the components of dragon fruits worked all together to strengthen the immune system of the human body. The nutritional value of dragon fruit varies depending on the species, cultivation area and harvesting time. Dragon fruit peel has a high potential to be used as a natural dye. The prospect of the fruit is bright in the global market due to the increasing trend of its consumption. The research on dragon fruit should be intensified and extended by emphasizing its value chain and production aspects for long term perspective.

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