

## SCIENTIFIC STUDIES OF HEALTH BENEFITS FROM DRAGON FRUIT

The Dragon plant is a vine, epiphytic cacti of the genus **Hylocereus** that is believed to be native in Central and Southern America and has been brought to Southeast Asian countries including Malaysia, Indonesia, Taiwan, Thailand, Sri Lanka, Bangladesh and Vietnam. Dragon plant has fleshy stems that grow up to 20ft long when matured. Dragon plant may grow from the ground or climb onto trees using aerial roots. Dragon plant bears flowers that only bloom at night. The flowers are ornate and beautiful with fragrant scent. Pitahaya plants can have up to 4-6 fruiting cycles per year. The dragon fruit has spines that grows up to 1 kilogram in weight. Dragon fruit skin may be yellowish to dark red in color with edible flesh that maybe white or red depending on the variety. It has a lot of black small seeds that is also edible.

Pitaya or Dragon fruit is also known to have some health benefits that includes preventing memory loss, anti cancer activity, control of blood glucose level in diabetes, anti-oxidant properties, aids in healing of wounds and others.



### Dragon fruit Medicinal Uses

#### Folkloric health Benefits from Dragon fruit.

- Dragon fruit promotes healing of wounds and cuts.
- Dragon fruit improves appetite.
- Dragon fruit improves eye sight
- Dragon fruit can aid in weight reduction
- Dragon fruit improves memory.

#### Confirmed health Benefits from Dragon fruit.

- Dragon fruit boosts immune system. Dragon fruit is rich in vitamin C and fibers that help provide an overall healthy body.
- Dragon fruit helps in digestion. Because of the richness in fibers, Dragon fruit aids in the digestion of food, Studies also suggest that Dragon fruit promotes the growth of probiotics.
- Dragon fruit help to lower blood glucose levels in type 2 diabetes. Studies also suggest that the the glucose found in Dragon fruit aids in controlling the blood sugar level for diabetes patients.

- Dragon fruit prevent formation of cancer causing free radicals. Dragon fruit is rich in minerals and fibers that aids in digestion, cleans toxic ingredients thus preventing the occurrence of colon cancer.
- Dragon fruit as anti-oxidant. The presence of high level of vitamin C, minerals and pytoalbumin is regarded as relevant in fighting free radicals and possess anti-oxidant properties.
- Dragon fruit helps to control cholesterol level. Dragon fruit is also rich in flavonoids that are known to have favorable effects against cardio related disease.

## **Dragon fruit Mechanism of action in disease treatment and prevention**

### **Pouyrhizus Waste Extract By Using Ultrasonic Solvents Extraction**

Pitaya plants also known as Dragon fruit are rich in naturally-occurring flavonoids, which are primarily found in dragon fruit peel. Flavonoids have a wide range of biological activities, such as cell proliferation-inhibiting, apoptosis-inducing, enzyme-inhibiting, antibacterial, and antioxidant effects (Cook and Samman, 1996; Havsteen, 2002; Middleton and Kandaswami, 1993). Moreover, some findings indicate that flavonoids\ has various clinical properties, such as antiatherosclerotic, antiinflammatory, antitumour, antithrombogenic, antiosteoporotic, and antiviral effects (Cook and Samman, 1996; Havsteen, 2002). Numerous epidemiological studies confirm significant relationship between the high dietary intake of flavonoids and the reduction of cardiovascular risk (Cook and Samman, 1996). The formulation of preventive and healthy nutrition requires information about phenolic and flavonoid composition in the dragon fruit waste.

[http://umpir.ump.edu.my/805/1/Lee\\_Qiao\\_Hui.pdf](http://umpir.ump.edu.my/805/1/Lee_Qiao_Hui.pdf)

### **Proximate analysis of dragon fruit (Hylecereus polyhizus).**

Dragon fruit is also rich in phytoalbumins which are highly valued for their antioxidant properties. Dragon fruit or Hylocereus polyrhizus is rich in fibers, vitamin C, minerals and phytoalbumins which are highly valued for their antioxidant properties. The dragon fruit helps the digestive process, prevent colon cancer and diabetes, neutralize toxic substances such as heavy metal, reduce cholesterol levels and high blood pressure and consumed regularly the dragon fruit can help against asthma and cough. It is also rich with potassium, protein, fiber, sodium and calcium which goods for health than other fruits.

<http://www.freepatentsonline.com/article/American-Journal-Applied-Sciences/208166316.html>

## **The Nutrition and Health Benefits of Tropical Fruits with Special Reference to Red Pitaya**

This study indicates hypocholesterolemic effect of tropical fruits including dragon fruit or pitaya as shown in-vivo and human intervention trial, therefore it has a potential of reducing the risk factor for CHD (dyslipidemia)

Soluble fiber increase fecal bile acids losses and chemodeoxycholic acid synthesis and appear to be the best substantiated mechanism by which fiber lowers serum cholesterol.

Other factors that may have contributed to the cholesterol-lowering effects are the plant sterol and phytochemical present in fruits that interfere with cholesterol metabolism

These effects maybe attributed by the active components present in the pitaya fruit such as antioxidant, polyphenolics, thiols, and their antioxidative activity from the betacyanin contents (Wybraniec & Mizrahi, 2002).

<http://www.scielo.br/pdf/sa/v70n4/a06v70n4.pdf>

[http://www.ifrj.upm.edu.my/18%20\(01\)%202011/\(28\)%20IFRJ-2010-060%20Jamilah%20UPM\[1\].pdf](http://www.ifrj.upm.edu.my/18%20(01)%202011/(28)%20IFRJ-2010-060%20Jamilah%20UPM[1].pdf)

<https://www.ncbi.nlm.nih.gov/pubmed/12358484>

The present study results revealed that both treatments (Red pitaya fruit and Lovastatin drug) showed a similar effect in increasing HDL-C and lowering TC, TG and LDL-C level

[http://www.madamsun.com/files/Download/The nutrition and health benefits of tropical fruits with special reference to red pitaya.pdf](http://www.madamsun.com/files/Download/The%20nutrition%20and%20health%20benefits%20of%20tropical%20fruits%20with%20special%20reference%20to%20red%20pitaya.pdf)

## **Dragon fruit confers prebiotic benefits**

The researcher concluded that dragon fruit may be used as an ingredient in functional food and nutraceutical products for the overweight individuals and diabetic prevention management. Meanwhile, the prebiotic effect of dragon fruit should be tested in clinical studies with both the raw and extracted flesh for comparison.

[http://findarticles.com/p/articles/mi\\_m0887/is\\_12\\_29/ai\\_n56719678/](http://findarticles.com/p/articles/mi_m0887/is_12_29/ai_n56719678/)

## Wound healing properties of *Hylocereus undatus* on diabetic rats.

Aqueous extracts of leaves, rind, fruit pulp and flowers of *Hylocereus undatus* were studied for their wound healing properties. Wound healing effects were studied on incision (skin breaking strength), excision (percent wound contraction) and the nature of wound granulation tissues, which were removed on day 7 and the collagen, hexosamine, total proteins and DNA contents were determined, in addition to the rates of wound contraction and the period of epithelialization. In streptozotocin diabetic rats, where healing is delayed, topical applications of *H. undatus* produced increases in hydroxyproline, tensile strength, total proteins, DNA collagen content and better epithelization thereby facilitating healing. *H. undatus* had no hypoglycemic activity. Copyright © 2005 John Wiley & Sons, Ltd.

<http://onlinelibrary.wiley.com/doi/10.1002/ptr.1724/abstract;jsessionid=6F4BF99B4BA76679BBF030DA132FCB20.d02t01>

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## Dragon fruit Warnings and Side Effects

- Dragon fruit is generally a nutritious fruit that is a good source of vitamins and minerals.
- There are no reported side effects in consuming dragon fruit.
- Dragon fruit is safe for consumption even by pregnant and breast feeding mothers.



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## Postharvest Quality of Dragon Fruit (*Hylocereus* spp.) after X-ray Irradiation Quarantine Treatment

The quality of three dragon fruit clones (*Hylocereus* spp.) was determined after x-ray irradiation for disinfestation of quarantine pests. Fruit were treated with irradiation doses of 0, 200, 400, 600, or 800 Gy and stored for 12 days at 10 °C. Irradiation did not affect soluble solids content, titratable acidity, or fructose concentrations. Glucose, sucrose, and total sugar concentrations decreased linearly as dose increased. Minimal softening occurred in the outer flesh layers for fruit treated with 400 or 600 Gy irradiation. Surface color, peel injury, and bract appearance differed among the three clones with irradiation stress, but in all cases, visible changes were minor. Fruit decay was absent or minimal, and disease ratings were not affected by irradiation. Irradiation treatment of dragon fruit at doses 800 Gy or less would ensure visual and compositional quality while providing quarantine security.

<http://hortsci.ashspublications.org/content/43/7/2115.full.pdf>