

Queensland tropical fruit

The healthy flavours of North Queensland



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Queensland tropical fruit—the healthy alternative

While Queensland tropical fruits are visually attractive and taste delicious, they are also very good for us. Fruit and vegetable consumption is known to help protect against certain cancers and heart disease, and ongoing research is showing benefits against many other diseases including diabetes and osteoporosis. As a result, health and governing bodies across the world are implementing schemes to increase consumption of these foods.

Queensland Primary Industries and Fisheries (QPIF) encourage industry and retailers to promote the health benefits of Queensland tropical fruit—not only increasing the marketability of these products, but also contributing to a healthier society.

This booklet features the health benefits of eating particular tropical fruits with regard to the nutritional composition—i.e. the percentage of recommended dietary intake (RDI) of vitamins and the percentage of daily intake (DI) of fibre.

In addition, it includes summaries of the scientific literature on the potential benefits of fruit consumption, indicated by animal and human studies. These summaries have been titled ‘Health property literature’ and indicate the state of knowledge—they do not constitute health claims or medical advice.

The absence of scientific literature in some instances highlights the scope for future research, particularly of the fruits that are lesser known in Western countries. This presents an opportunity to invest and participate in research that will fill this gap and promote tropical fruit as a healthy alternative—unlocking the health benefits that may prevent disease.

QPIF is one of Australia’s leading research and development organisations. To invest in science or register your interest in a collaborative project, contact QPIF on 13 25 23 or visit www.dpi.qld.gov.au

In addition to this booklet, you may like to read another of QPIF’s publications—*Tropical Tastes: Fruits, foods and flavours of north Queensland*. It is a great consumer reference containing background and general information about many of North Queensland’s exotic flavours.

Notes

- The nutritional composition data is from the United States Department of Agriculture National Nutrient Database for Standard Reference (www.nal.usda.gov) and *Fruits of warm climates* (1987) by J F Morton, unless otherwise indicated.
- The percentages of the recommended dietary intake of vitamins and the percentages of the daily intake of fibre (present in the edible portion of the fruit) have been included where they are equal to or greater than 10% (in the stated serving size), as defined by Food Standards Australia and New Zealand, for adults on a daily diet of 8700 kJ (*Australian New Zealand Food Standards Code*, standards 1.1.1 and 1.2.8). The serving size has been based on the typical size of the edible portion from average fruit(s) or given as 100 g.



Abiu (*Pouteria caimito*)

Abiu is a good source of:

- niacin (34% of the RDI per 100 g)
- vitamin C (122% of the RDI per 100 g).



Avocado (*Persea americana*)

A typical avocado (201 g) is a good source of:

- fibre (45% of the DI)
- vitamin C (50% of the RDI)
- vitamin K (52% of the RDI).

Health property literature

Diets supplemented with avocado have been seen to protect against chemically induced liver damage¹ and improve wound healing.² In an animal study, ingestion of avocados significantly improved plasma lipid concentrations, with lowered triglycerides, increased HDL-cholesterol and changes in HDL-cholesterol that may improve its protective action on arteries.³ However, no changes to plasma lipids were observed in humans eating avocado.⁴



Banana (*Musa spp.*)

Medium to large bananas (more than 118 g) are a good source of:

- vitamin C (more than 25% of the RDI)
- vitamin B6 (more than 27% of the RDI).

A typical plantain (*Musa paradisiacal*) cooking banana (179 g) is a good source of:

- vitamin C (82% of the RDI)
- vitamin B6 (33% of the RDI).

They are also sources of:

- folate (20% of the RDI)
- niacin (12% of the RDI)
- fibre (14% of the DI)
- vitamin A (13% of the RDI).



Health property literature

A meal of bananas has been shown to significantly decrease plasma and lipoprotein lipid peroxidation.⁵ In Cavendish bananas this antioxidant activity may be due to the content of dopamine (2.5–10 mg/100 g).⁶

Banana consumption has shown protective activity against cancer-causing agents in lab animals.⁷ There is a considerable body of research supporting the health benefits associated with the consumption of plantains. A New Zealand research group has proposed that consuming plantains, amongst other fruit and vegetables, may be responsible for the lower incidence of colorectal cancer in Polynesians living in New Zealand.⁸ Anti-cancer activity has been seen in animal feeding trials.⁹ Plantains have also been shown to remedy persistent diarrhoea¹⁰, inhibit chemically induced rises in blood-pressure in lab animals¹¹, and have anti-ulcer effects in a variety of animal models.¹²



Black sapote (*Diospyros digyna*)

The black sapote is a good source of vitamin C—100 g of the fruit contains 480% of the RDI.



Breadfruit (*Artocarpus altilis*)

Breadfruit is a good source of vitamin C—100 g of the fruit contains 72% of the RDI.



Carambola or starfruit (*Averrhoa carambola*)

Carambola is a good source of vitamin C—a typical large carambola (124 g) contains 107% of the RDI.

Health property literature

Carambola pomace, when included in lab animal diets as a source of dietary fibre, has shown potential benefits to gut health.¹³ However, consumption of carambola and carambola juice should be carefully considered in people with kidney problems, as the oxalate in carambola can cause renal failure and seizures.¹⁴ It also inhibits liver enzyme activity that can alter prescription drug effects.





Custard/sugar apple (*Annona reticulata*/*Annona squamosa*)

Custard apple is a good source of vitamin C—100 g of the fruit contains 91% of the RDI.

Health property literature

Consumption of sugar apple flesh by both normal and diabetic lab animals improved blood lipid profile and decreased specific enzymes that indicate improved liver function and a protective effect on the liver and heart.¹⁵ An increase in glucose tolerance was also shown in the diabetic lab animals.



Durian (*Durio zibethinus*)

Durian is a good source of:

- vitamin C (49% of the RDI per 100 g)
- thiamin (34% of the RDI per 100 g).

Health property literature

In lab animals fed a high-cholesterol diet, durian has been shown to inhibit lowering of plasma antioxidant activity, and rises in lipids and glucose.¹⁶



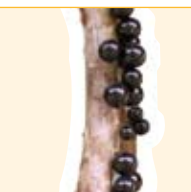
Guava (*Psidium guajava*)

Guava is a good source of vitamin C—a typical guava (55 g) provides over 300% of the RDI.

Health property literature

Guava has a high antioxidant capacity and consumption over a four-week period has shown increases in serum antioxidant status.¹⁷

In studies where guava has been included as a dietary intervention for hypertensive patients, there has been a significant lowering of blood pressure and improvement of lipid profiles.¹⁸



Jaboticaba (*Myrciaria cauliflora*)

Jaboticaba is a good source of vitamin C—100 g of the fruit contains 57% of the RDI.



Jakfruit (*Artocarpus heterophyllus*)

Jakfruit is a source of vitamin A—100 g of the fruit contains 19% of the RDI.¹⁹



Lime (*Citrus latifolia*, *Citrus aurantifolia*, *Citrus hystrix*)

A lime is a good source of vitamin C—a typical lime (67 g) contains 49% of the RDI.

Health property literature

Lime juice has been reported to improve iron absorption.



Longan (*Dimocarpus longan*)

A longan is a good source of vitamin C—100 g of the fruit contains 210% of the RDI.



Lychee (*Litchi chinensis*)

A lychee is a good source of vitamin C—six average-sized fruit provide the RDI.

Health property literature

Freeze-dried lychee added to the diet of lab animals has shown protective effects against chemically induced liver damage.²⁰



Mamey sapote (*Pouteria sapota*)

Mamey sapote is a good source of vitamin C (60% of the RDI per 100 g). It is also a source of:

- fibre (10% of the DI per 100 g)²¹
- vitamin A (20% of the RDI per 100 g)²¹
- niacin (20% of the RDI per 100 g).



Mango (*Mangifera indica*)

A typical mango (207 g) is a good source of vitamin C (143% of the RDI). It is also a source of:

- vitamin A (11% of the RDI)
- vitamin K (11% of the RDI)
- vitamin E (23% of the RDI)
- vitamin B6 (17% of the RDI)
- niacin (12% of the RDI)
- folate (15% of the RDI)
- fibre (12% of the DI).

Health property literature

Mango-supplemented diets have shown promotion of liver health and inhibition of the effects of cancer-causing agents.²²



Mangosteen (*Garcinia mangostana*)

Health property literature

Dietary mangosteen has minimised the effects of a high-cholesterol diet in lab animals, with significantly lower total cholesterol, LDL-cholesterol and triglycerides.²³



Papaya (*Carica papaya*)

A typical small papaya (152 g) is a good source of:

- vitamin C (235% of the RDI)
- folate (29% of the RDI).

It also contains:

- vitamins A and E (11% of the RDI).

Health property literature

Consumption of red-fleshed papaya has increased antioxidant activity in the heart muscles.²⁴ Papaya juice, fed to lab animals, has been seen to lower lipid oxidation and increase the total antioxidant power of the blood.²⁵





Passionfruit (*Passiflora edulis*)

Passionfruit is a good source of vitamin C and fibre—four passionfruit (18 g each) provide 54% and 25% of the RDI and DI respectively.

Health property literature

Passionfruit pulp contains alkaloids that may be responsible for the relaxing effect felt after consumption.²⁶



Persimmon (*Diospyros kaki*)

A typical persimmon (168 g) is a good source of vitamin C (31% of the RDI) and a source of vitamin A (11% of the RDI).

Health property literature

Increased antioxidant capacity was seen in both the liver and skin of lab animals that were fed persimmon powder.²⁷

Consumption of persimmon has shown protective effects against a high-cholesterol diet.²⁸ Persimmon peel powder, in diabetic animals, has been seen to lower food intake, blood glucose and improve lipid profiles.²⁹ Frequent intake of persimmon has been associated with lower indices of age-related oxidative stress.³⁰



Pineapple (*Ananas comosus*)

Pineapple is a good source of vitamin C—100 g of the fruit contains 120% of the RDI.

Health property literature

Consumption of pineapple juice has improved the metabolism and clearance of blood lipoprotein particles in lab animals.³¹



Pitaya (*Hylocereus undatus*—white flesh and *Hylocereus costaricensis*—red flesh)

Pitaya is a good source of vitamin C—100 g of the white- and red-fleshed fruit contain 33% and 140% of the RDI respectively.³²



Pummelo (*Citrus grandis*)

Pummelo is a good source of vitamin C—100 g of the fruit contains 150% of the RDI.

Health property literature

The fruit and juice is known to increase absorption of certain drugs that can lead to increased therapeutic effects, but may also magnify side effects.



Rambutan (*Nephelium lappaceum*)

Rambutan is a good source of vitamin C—100 g of the fruit contains 75% of the RDI.



Rollinia (*Rollinia deliciosa*)

Rollinia is a good source of vitamin C—100 g of the fruit contains 82% of the RDI.



Sapodilla (*Manilkara zapota*)

A typical sapodilla (170 g) is a good source of:

- vitamin C (62% of the RDI)
- fibre (30% of the DI).



Soursop (*Annona muricata*)

Soursop is a good source of vitamin C—100 g of the fruit contains 51% of the RDI.

Health property literature

Soursop contains alkaloids that may be responsible for the relaxing effect felt after consumption.³³



Star apple (*Chrysophyllum cainito*)

Star apple is a source of vitamin C—100 g of the fruit contains 20% of the RDI.

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