

# Noni

## (*Morinda citrifolia*)

**What is Noni?:** Noni (*Morinda citrifolia*) is a tree that is native in Southeast Asia and Australia. It is grown throughout the tropics. All components of the tree can be used including the fruit, leaves and root. The fruit has a strong smell and bitter taste so it is not consumed for enjoyment, rather eaten during famine or for the perceived medicinal benefits of the fruit.

Noni is one of the Hawaiian names for this fruit, but is known by many other names: cheese fruit, great morinda, Indian mulberry, nunaakai, dog dumpling, mengkudu, Kumudu, pace.

**Storage and preparation methods:** The fruit is available year round and no special storage methods are required. The fruit can be eaten raw with salt or cooked with curry. The seeds are eaten when roasted.

In the U.S. it is most commonly consumed as Noni juice, in a pill as a supplement or as a powder.

It is currently available in some products including a beverage by *Snapple* and a diet bar made by *Think! Diet Bars*. These are available in supermarkets and the juice can be found in some ethnic grocery stores.

Supplements are readily available online.

**Nutrition Properties:** The nutritional content is highest in the fruit and the powder form. The fruit and powder are high in carbohydrates and fiber as well as vitamin C, niacin, iron and potassium. Vitamin A, calcium and sodium are also present in moderate amount.

Noni juice contains only small amounts of carbohydrates and vitamin C is the only micronutrient present (2 oz of juice contains 40 kcal, 10 g of CHO and no fiber).

The phytochemicals present in noni include lignans, oligo- and polysaccharides, flavonoids, iridoids, fatty acids, scopoletin, catechin, beta-sitosterol, damnacanthol and alkaloids.

**Health Claims:** Traditionally, the leaves and root were used to treat menstrual cramps, diabetes, liver disease and urinary tract infections. The leaves can be used as a laxative.

Websites selling noni juice and supplements claim that noni has antibacterial, antiviral, antifungal, antitumor, antihelmin, analgesic, hypotensive, anti-inflammatory, blood-glucose regulating and immune enhancing properties.

**Anti-tumor** The phytochemicals found in noni have been tested in labs using isolated cancer cells where they have shown promise in inhibiting the proliferation of isolated tumor cells<sup>1</sup> and tumor cells in rats<sup>2</sup> no tests on humans have been performed.

**Anti-inflammatory:** A recent laboratory study of noni juice demonstrated that it has some ability to inhibit inflammatory precursors in vitro and in vivo<sup>3</sup> however no studies in humans have been conducted.

**Blood-glucose regulation:** A recent study of diabetic rats demonstrated better glucose control with rats receiving 4 ml/kg each day<sup>4</sup> (comparable to a 150 lb person consuming 9 oz, containing 45 g carbohydrate). A human study was conducted with patients from Papua New Guineans noted better self-reported blood glucose control in those consuming noni, however this study was small and based on a questionnaire<sup>5</sup>.

**Conclusion:** While noni has been used for traditional medicine, there are no randomized control studies performed on humans. Initial testing in laboratories using isolated cells and rats appear promising however this is not strong enough evidence to put into practice.

At Harborview, patients are most commonly using noni juice because they believe it will assist them in managing their diabetes. The research is not strong enough to support the use of noni juice for treating diabetes.

Additionally, patients rarely consider the effect the carbohydrates from the juice will affect their blood glucose since they see it as medicine. For these patients, who often have limited income, noni juice is not a good use of resources that could be put toward purchasing other food.

## References

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