

## **Tropical Treasure: Noni May Thwart Cancer, Improve Mood**

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Noni's story begins more than 2,000 years ago. Ancient sea-goers--who eventually settled in what is now Polynesia--carried the fruit on board canoes that they used to traverse the oceans.

As you can imagine, space on board these canoes was limited, but according to the International Noni Communication Council (INCC), noni was considered essential because of its healthful properties, so they made room for it. The ancient settlers and their descendants have used noni as a cultural, religious and medicinal drink for thousands of years, but it has been only in the past 15 years or so that the United States has seen its noni market grow, allowing Westerners to reap the healthful benefits of this tropical fruit.

### Ancient Traditions

Many believe that "real" noni is derived solely from the island of Tahiti, although the fruit is native to the entire region of Polynesia and grows in countless tropical locales including Hawaii, Southeast Asia and Australia. Known as *Morinda citrifolia* in Latin and by the common name of Indian mulberry, noni grows on trees and is small--approximately the size of a lemon--with a waxy-looking, yellow-green skin. Reportedly, noni juice isn't a pleasant thing to drink: its flavor has been called "terrible" and "objectionable," and it was once likened to "rancid cheese."

Despite its bitter flavor and strong smell, noni has been used by traditional South Seas islanders as a healing tonic of sorts for centuries to mend ailments ranging from fevers to broken bones. However, more than one report indicated that sick Polynesians only resorted to using noni juice for its healing properties if all other treatments had failed.

On the bright side, 21st-century food technology allows noni's flavor to be improved by reducing the off-notes and/or adding other fruit flavors such as strawberry-kiwi, raspberry or papaya.

## Cancer Fighter?

In terms of modern western medicine, noni is believed to be an immune-booster and a potential therapeutic agent against cancer.

Brian Issell, MD, director of the clinical sciences program at the Cancer Research Center of Hawaii in Honolulu, is currently conducting a Phase I trial of noni in patients with advanced cancer. Developed with support from the National Institutes of Health (NIH), the trial was set up to investigate how different doses of freeze-dried noni capsules affect cancer patients, both in terms of tolerance and potential toxicities as well as enhancement of quality of life.

"One of the reasons I became interested in doing the Phase I study of noni was because some of my cancer patients said that noni made them feel and function better, but there were a lot of inconsistencies," Issell recently told Better Nutrition.

"Because of this, we're also conducting quality-of-life measures as part of the study. We're hoping to identify the best dose based on quality-of-life measures, which we will subsequently propose for further studies," he said.

Issell added that the Phase I trial will also measure noni's chemical profile, as well as absorption and excretion levels, to offer support for the standardization of future noni products.

In addition to Issell's human trial, there have been in vitro and in vivo studies published about noni's anticancer effects. A 2001 paper that was published in the Annals of the New York Academy of Sciences, for example, clearly, demonstrated specific anticancer and antioxidant effects in mice that were given noni supplements.

In a 2003 issue of the journal Angiogenesis, researchers from the Louisiana State University Health Sciences Center in New Orleans reported that both 5 percent and 10 percent concentrations of noni were able to prevent angiogenesis, the biochemical process during which blood vessels are formed to furnish tumors with a blood supply.

Noni may also fight cancer by stimulating the immune system. In fact, noni's polysaccharide constituents are known to be immunomodulators, according to researchers at the John A. Burns School of Medicine at the University of Hawaii in

Honolulu. Their December 2003 publication in the journal *Phytotherapy Research* indicated that a noni extract produced a cure rate of 25-45 percent in an animal tumor model. This effect was enhanced when the noni extract was used in combination with chemotherapeutic drugs.

#### Additional Data

Aside from cancer and immunity, noni has also been studied for its effect in emotional and mental wellness. Researchers from the Beijing Institute of Pharmacology and Toxicology published a paper in the January 2003 issue of *Life Sciences* that indicated that noni's oligosaccharides possess antidepressant properties.

Further, a 2001 study that was published in the Chinese journal *Acta Pharmacologica Sinica* by researchers at Beijing's Institute of Pharmacology and Toxicology indicated that noni supplementation had prevented pathological changes in an animal model of chronic stress.

While there is a need for continuing noni research, particularly in humans, there is no denying the fruit's loyal following. In fact, INCC predicts the US noni market will top the \$1 billion mark within the next 2 years. And, with advances in flavoring and food technology, the bitter taste is no longer a hindrance for enjoying this healthful tropical fruit. From an immune boost to a mood lift, noni offers more than just a piece of the islands.