

Compared benefits of chia seed

Chia is a food rich in omega-3 fatty acids, fiber, antioxidants, and protein. It has fewer carbohydrates when compared to most other grains. Chia seed has an oil content that ranges between 29 and 33 percent. In today's market there are four readily available sources of omega-3 fatty acids: menhaden (an Atlantic fish of the herring family) oil, flaxseed, chia and algae. The omega-3 fatty acid content of chia oil is superior to all other sources:

Chia oil	: 62-64 %
Flaxseed oil	: 58%
Menhaden fish oil	: 29%

The protein content of chia seed is also higher than most cereals:

Chia	: 19-23%
Wheat	: 14%
Corn	: 10%
Rice	: 6.5%
Oats	: 17%
Barley	: 12.5%

The aminoacid balance of chia also compares favorably with that of other cereals, having higher levels of lysine, methionine, and cysteine.

Comparison of the vitamin content of chia with other crops shows that it is higher in niacin than corn, soybeans, rice, and safflower but lower in vitamin A than corn. Thiamin and riboflavin contents are similar to rice and corn but lower than soybeans and safflower.

Chia seeds are an excellent source of calcium, phosphorus, magnesium, potassium, iron, zinc, and copper. It has 6 times more calcium, 11 times more phosphorus, and 4.6 times more potassium than does milk, according the USDA (2001), Brown (2003), and the Instituto Nacional de Alimentos (2003).

Chia is highly enriched with antioxidants to protect its PUFAs from becoming oxidized and going rancid, to the extent that chia seed can be ground to flour and stored at room temperature until use (*Taga, Miller, and Pratt, 1984; Castro-Martinez, Pratt, and Miller, 1986*). The most important antioxidants in chia are chlorogenic acid and caffeic acid as well as myricetin, quercetin, and kaempferol flavonols. These antioxidants have been shown to provide protection to lipids, proteins, and DNA from oxidation, and work to inhibit lipid peroxidation with strong free radical and superoxide scavenging activity. They are more effective than vitamin C and vitamin E in their antioxidant properties (*Kweon, Hwang, and Sung, 2001*). Epidemiological studies have indicated that consumption of high levels of flavonol-rich foods and beverages may protect against cardiovascular disease (*Hertog et al., 1993; Hertog, Kromhout, and Aravanis, 1995; Hertog and Hollman 1996; Cook and Samaman, 1996; Knekt et al., 1996*), stroke (*Keli et al., 1996*), lung cancer (*Knekt et al., 1997*), and stomach cancer (*Garcia Closas et al., 1999*).