

Guava Fruit: A Rich Source of Antioxidant

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Guava (*Psidium guajava*) belongs to Myrtaceae family that is native to Southern Mexico. Now the tree grows in tropical and subtropical areas of the world. Guava fruits are generally consumed as fresh as well as processed forms. The fruit is prominently rich in Vit-C (228 mg/100g), and this fruit provides remarkable antioxidant property. The root, bark, leaf and immature fruits are commonly used as traditional medicine in many countries. The herbs derived from guava plants have been validated by pharmacological studies to possess significant bioactivities like cancer inhibition and prevention. The fruit is a rich source of soluble dietary fibre (5.4 g per 100 g of fruit, about 14% of DRA), which makes it a good bulk laxative. The fibre content helps protect the colon mucosa by decreasing exposure time to toxins as well as binding to cancer-causing chemicals in the colon.

Polyphenols are widely distributed in the many fruits and serve as biological benefits such as antioxidant, anti-inflammatory and anti-carcinogenic activities. It was noticed that the highest values of antioxidant activity were found in fruits with a high phenolic compound concentration. The polyphenols, most of which are flavonoids, are present mainly in ester and glycoside forms [1]. In the case of guava, free elagic acid and glycosides of myricetin and apigenin are found to be present [2]. Polyphenol content highest in guava peel (10.36 g/100 g). The pink flesh cultivar has a fair amount of vitamin A (beta-carotene). Some vitamin B such as thiamine (B1), riboflavin (B2), niacin and pantothenic acid are also found in the fruit. Pink guava fruit provides 5204 µg of lycopene, nearly twice the amount than in tomatoes (2573 µg/100g).

The pink flesh guava is also rich in antioxidants that help to reduce the incidence of degenerative diseases such as arthritis, arteriosclerosis, cancer, heart disease, inflammation and brain dysfunction. In addition, antioxidants were reported to retard ageing [3] besides preventing or delaying oxidative damage of lipids, proteins and nucleic acids caused by reactive oxygen species. These include reactive free radicals such as superoxide, hydroxyl, peroxy, alkoxyl, and non-radicals such as hydrogen peroxide and hypochlorous acid. They scavenge radicals by inhibiting initiation and breaking of chain reaction, suppressing formation of free radicals by binding to the metal ions, reducing hydrogen peroxide, and quenching superoxide and singlet oxygen [4]. Total soluble phenolics, vitamin C, lycopene and total carotenoids were found to be correlated with the total antioxidant capacity (TAOC) of hydrophilic extracts from

guava fruits, whose TAOC is measure by using six different assays: DPPH, N-dimethyl-p- phenylenediamine (DMPD), ferric-ion-reducing antioxidant powder (FRAP), trolox equivalent antioxidant capacity (TEAC), oxygen radical absorbance capacity (ORAC), and total oxidant scavenging capacity (TOSC). The phenolic content in guava peel displayed ten times higher antioxidant capacity than that in guava pulp and the hydrophilic extracts of guava exerted the highest antioxidant capacity.

The guava leaves extracts have more interest in the discovery of novel cancer inhibitors and bioactive constituents with antimicrobial, antidiabetic, cardioprotective, neuroprotective, hepatoprotective and antioxidant activities. All the ethanol, chloroform and hexane extracts and essential oil of guava leaves have demonstrated anticancer and antioxidant potentials on many tumor cell lines. The leaves are inedible but young leaves can be brewed to make a kind of tea that affords potentially significant health benefits.

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