OPEN ACCESS Freely available online

Medicinal & Aromatic Plants

ISSN: 2167-0412

Editorial

Guava (*Psidium guajava L.*) Leaves: Medicinal Uses and Phytochemical Profile

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EDITORIAL

Psidium guajava (L.) belongs to the Myrtaceae family, which is grown with various medicinal and nutritive properties. Different parts of the guava tree, i.e., roots, leaves, bark, stem, and fruits, have been beneficial for treating health conditions in many countries. *Psidium guajava* L. is rich in vitamin A, Vitamin B, vitamin C, iron, phosphorus, calcium and minerals; the higher vitamin C content in guava may help in improving the immune system and maintain the health of blood vessels, whereas vitamin B plays an important role in improving blood circulation, nerve relaxation, and cognitive function stimulation. It also contains high content of organic and inorganic compounds like secondary metabolites e.g. anti-inflammatory, anti-oxidants, anti-viral, polyphenols compounds. Its leaves, seeds, along with the pulp are used to treat certain respiratory and gastrointestinal disorders, while the fruit pulp is utilized to enhance platelets count in patients suffering from dengue fever. The leaf's extract is being used as a medicine in cough, diarrhoea, oral ulcers and in some swollen gums wound and also be considered for their health benefits which are recognized to their excess of phytochemicals, such as essential oils, polysaccharides, minerals, vitamins, enzymes, triterpenoid acid alkaloids, steroids, glycosides, tannins, flavonoids and saponins, avicularin, quercetin, apigenin, hyperin, kaempferol, guaijaverin, gallic acid, epigallocatechin gallate, myricetin, epicatechin, catechin, chlorogenic acid, and caffeic acid. The size of seeds is very small and they are edible. Guava plant used for the treatment of diarrhoea, diabetes, hypertension, gastroenteritis, dysentery and pain relief. It also helps in the curing of cancerous cells and help to prevent skin aging. Due to these biological events it is can be quite supportive for the inhibitions and treatments of infections. Ethanolic extract of guava can increase the sperm quality and quantity and can be used for the dealing of infertile males.

Guava leaves (GLs) are a rich source of various health-promoting micro- and macronutrients as well as bioactive compounds. Guava leaves are a rich source of essential oils and volatile compounds. The major constituent of guava leaves essential oil includes 1,8-cineole and trans-caryophyllene. The essential oils of Tunisian *Psidium guajava* leaves and stems were determined by Gas Chromatography coupled to Mass Spectrometry GC-MS. The major compounds in stem oil were α-humulene, Germacrene D and Valerenol. Essential oil of guava leaves from the Philippines was found to contain a different profile, with limonene, β-pinene, β-caryophyllene, and longicyclene. In study, sixty-four different compounds were determined in essential-oil extracted from guava leaves by Gas Chromatography–Mass Spectrometry (GC-MS). Among them, caryophyllene (24.97%) was found to be predominantly present, which acts as an anti-oxidant, anti-cancer, anti-inflammatory, and antimicrobial agent. Guava leaf polysaccharides (GLPs) can be isolated using ultrasound-assisted extraction. Guava leaf polysaccharides contain about uronic acid and reducing sugars. GLPs are soluble in water, while insoluble in organic solvents like ethanol, diethyl ether, ethyl acetate, acetone, and chloroform. GLPs are also found to be beneficial in treating type-2 diabetes mellitus symptoms.

In Asian countries guava leaves are popular as traditional source of medicine due to their anti-hyperglycemic effect. Research studies on the hypoglycemic effects of guava leaf extract, due to the presence of its phenolic compounds, were shown to improve vascular dysfunction in mice with diet-induced obesity.

Leaves of guava are documented as a source of natural compounds and its extracts have been extensively studied for their high levels of anti-oxidant, anti-cancer, hypoglycemic, and other biological activities. Presence of numerous bioactive chemical compounds and other phenolic compounds to enhance and stabilize different physiological and metabolic functions in the human body.

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Received: March 24, 2021, **Accepted:** April 26, 2021, **Published:** April 30, 2021

Citation: Devika M (2021) Guava (*Psidium guajava L.*) Leaves: Medicinal Uses and Phytochemical Profile. Med Aromat Plants (Los Angeles) 10: 383.