

Overview on Guava Leaves

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Abstract: *The guava (Psidium guajava L.) is a significant tropical fruit found in regions such as India, Indonesia, Pakistan, Bangladesh, and South America. It belongs to the Myrtaceae family. Health benefits of guava plant leaves attributes to a variety of phytochemical they contain such as quercetin, avicularin, apigenin, guaijavarin, kaempferol, hyperin, myrecetin, gallic acid, catechin, epicatechin, chlorogenic acid, epigallocatechin gallate, and caffeic acid. Guava leaves boast a rich content of both organic and inorganic compounds, including various secondary metabolites. Leaves containing compounds mostly serve as effective fungi static or bacteriostatic agents. Guava leaves extracts have undergone scrutiny for their adverse biological activities, encompassing antidiabetic, anticancer, antioxidant, antimicrobial, lipid-lowering, and hepato-protection effects. The extract from guava leaves serves medicinal purposes, addressing conditions like cough, diarrhea, oral ulcers, and swollen gums wounds. Quercetin, identified as the primary antioxidant in guava leaves, is pivotal for its spasmolytic activity. The purpose of the review is to consolidate all the information available on the phytochemical and pharmacological activities and nutritional profile of guava leaves considering the phytochemical profile and positive effects of guava leaves, there is potential for their incorporation on ingredients in the formulation of functional foods and pharmaceuticals.*

Keywords: Essential oils, Polysaccharide's, Psidium guajava, Anti-inflammatory, Anti-oxidant, Medicinal.

REFERENCES

- [1] Kumar M., Saurabh V., Tomar M., Hasan M., Changan S., Sasi M., Maheshwari C., Prajapati U., Singh S., Prajapat R.K., et al. Mango (*Mangifera indica* L.) leaves: Nutritional composition, phytochemical profile, and health-promoting bioactivities. *Antioxidants*. 2021; 10:299. doi: 10.3390/antiox10020299.
- [2] Arai S., Yasuoka A., Abe K. Functional food science and food for specified health use policy in Japan: State of the art. *Curr. Opin. Lipidol*. 2008; 19:69–73. doi: 10.1097/MOL.0b013e3282f3f505. [PubMed] [CrossRef] [Google Scholar]
- [3] Chen, H.Y.; Yen, G.C. Antioxidant activity and free radical-scavenging capacity of extracts from guava (*Psidium guajava* L.) leaves. *Food Chem*. 2007, 101, 686–694.
- [4] https://www.ncbi.nlm.nih.gov/core/lw/2.0/html/tileshop_pmc/tileshop_pmc_inline.html?title=Click%20on%20image%20to%20zoom&p=PMC3&id=5412476_ijms-18-00897-g001.jpg
- [5] Fu HZ, Luo YM, Li CJ, Yang JZ, Zhang DM. Psidials A-C, three unusual meroterpenoids from the leaves of *Psidium guajava* L. *Org Lett*. 2010;12(5):5135–8.
- [6] Taylor P, Pino JA, Agüero J, Marbot R, Fuentes V, Pino JA, et al. Leaf oil of *Psidium guajava* L. from Cuba. *J Essential Oil Res*. 2001; 13:61–2.
- [7] Kokate CK, Gokhale SB, Purohit AP. *Pharmacognosy*. 32nd ed. Nirali Prakashan: New Delhi: 2005.111-13.
- [8] <https://www.researchgate.net/profile/Venkatachalam-Karthikeyan>
- [9] https://www.researchgate.net/publication/304451735_PHARMACOGNOSTICAL_AND_PHYTOCHEMICAL_STUDIES_ON_THE_LEAVES_OF_Psidium_guajava_Linn-HAFSI_VARIETY
- [10] https://specialtyproduce.com/produce/Guava_Leaves_8500.php
- [11] Dutta P., Kundu S., Bauri F.K., Talang H., Majumder D. Effect of bio-fertilizers on physico-chemical qualities and leaf mineral composition of guava grown in alluvial zone of West Bengal. *J. Crop Weed*. 2014;10:268–271. [Google Scholar]

- [12] Kim S.Y., Kim E.A., Kim Y.S., Yu S.K., Choi C., Lee J.S., Kim Y.T., Nah J.W., Jeon Y.J. Protective effects of polysaccharides from *Psidium guajava* leaves against oxidative stresses. *Int. J. Biol. Macromol.* 2016;91:804–811. doi: 10.1016/j.ijbiomac.2016.05.111. [PubMed] [CrossRef] [Google Scholar]
- [13] Jassal K., Kaushal S. Phytochemical and antioxidant screening of guava (*Psidium guajava*) leaf essential oil. *Agric. Res. J.* 2019;56:528. doi: 10.5958/2395-146X.2019.00082.6. [CrossRef] [Google Scholar]
- [14] Rahman Z., Siddiqui M.N., Khatun M.A., Kamruzzaman M. Effect of guava (*Psidium guajava*) leaf meal on production performances and antimicrobial sensitivity in commercial broiler. *J. Nat. Prod.* 2013;6:177–187. [Google Scholar]
- [15] Thomas L.A.T., Anitha T., Lasyaja A.B., Suganya M., Gayathri P., Chithra S. Biochemical and mineral analysis of the undervalued leaves—*Psidium guajava* L. *Int. J. Adv. Sci. Res.* 2017;2:16–21. [Google Scholar]
- [16] Shabbir, H.; Kausar, T.; Noreen, S.; Hussain, A.; Huang, Q.; Gani, A.; Su, S.; Nawaz, A. In vivo screening and antidiabetic potential of polyphenol extracts from guava pulp, seeds and leaves. *Animals* 2020, 10, 1714.
- [17] Rahman, Z.; Siddiqui, M.N.; Khatun, M.A.; Kamruzzaman, M. Effect of guava (*Psidium guajava*) leaf meal on production performances and antimicrobial sensitivity in commercial broiler. *J. Nat. Prod.* 2013, 6, 177–187.
- [18] Alberts, B.; Johnson, A.; Lewis, J.; Raff, M.; Roberts, K.; Walter, P. Protein Function. In *Molecular Biology of the Cell*, 4th ed.; Garland Science: New York, NY, USA, 2002.
- [19] Lonnie, M.; Hooker, E.; Brunstrom, J.; Corfe, B.; Green, M.; Watson, A.; Williams, E.; Stevenson, E.; Penson, S.; Johnstone, A. Protein for life: Review of optimal protein intake, sustainable dietary sources and the effect on appetite in ageing adults. *Nutrients* 2018, 10, 360.
- [20] Thomas, L.A.T.; Anitha, T.; Lasyaja, A.B.; Suganya, M.; Gayathri, P.; Chithra, S. Biochemical and mineral analysis of the undervalued leaves—*Psidium guajava* L. *Int. J. Adv. Sci. Res.* 2017, 2, 16–21.
- [21] Jassal, K.; Kaushal, S. Phytochemical and antioxidant screening of guava (*Psidium guajava*) leaf essential oil. *Agric. Res. J.* 2019, 56, 528.
- [22] Adrian, J.A.L.; Arancon, N.Q.; Mathews, B.W.; Carpenter, J.R. Mineral composition and soil-plant relationships for common guava (*Psidium guajava* L.) and yellow strawberry guava (*Psidium cattleianum* var. *Lucidum*) tree parts and fruits. *Commun. Soil Sci. Plant Anal.* 2015, 46, 1960–1979.
- [24] <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8066327/>
- [25] Soliman, F.M.; Fathy, M.M.; Salama, M.M.; Saber, F.R. Comparative study of the volatile oil content and antimicrobial activity of *Psidium guajava* L. and *Psidium cattleianum* Sabine leaves. *Bull. Fac. Pharm. Cairo Univ.* 2016, 54, 219–225.
- [26] Jassal, K.; Kaushal, S. Phytochemical and antioxidant screening of guava (*Psidium guajava*) leaf essential oil. *Agric. Res. J.* 2019, 56, 528.
- [27] Mazumdar S., Akter R., Talukder D. Antidiabetic and antiarrhoeal effects on ethanolic extract of *Psidium guajava* (L.) Bat. leaves in Wister rats. *Asian Pac. J. Trop. Biomed.* 2015;5:10–14. doi: 10.1016/S2221-1691(15)30163-5. [CrossRef] [Google Scholar]
- [28] Punia S., Kumar M. Litchi (*Litchi chinensis*) seed: Nutritional profile, bioactivities, and its industrial applications. *Trends Food Sci. Technol.* 2021;108:58–70. doi: 10.1016/j.tifs.2020.12.005. [CrossRef] [Google Scholar]
- [29] Luo Y., Peng B., Wei W., Tian X., Wu Z. Antioxidant and anti-diabetic activities of polysaccharides from guava leaves. *Molecules.* 2019;24:1343. doi: 10.3390/molecules24071343. [PMC free article] [PubMed] [CrossRef] [Google Scholar]
- [30] Eidenberger T., Selg M., Krennhuber K. Inhibition of dipeptidyl peptidase activity by flavonol glycosides of guava (*Psidium guajava* L.): A key to the beneficial effects of guava in type II diabetes mellitus. *Fitoterapia.* 2013;89:74–79. doi: 10.1016/j.fitote.2013.05.015. [PubMed] [CrossRef] [Google Scholar]
- [31] Chen H.Y., Yen G.C. Antioxidant activity and free radical-scavenging capacity of extracts from guava (*Psidium guajava* L.) leaves. *Food Chem.* 2007;101:686–694. doi: 10.1016/j.foodchem.2006.02.047. [CrossRef] [Google Scholar]
- [32] Kim S.Y., Kim E.A., Kim Y.S., Yu S.K., Choi C., Lee J.S., Kim Y.T., Nah J.W., Jeon Y.J. Protective effects of polysaccharides from *Psidium guajava* leaves against oxidative stresses. *Int. J. Biol. Macromol.* 2016;91:804–811. doi: 10.1016/j.ijbiomac.2016.05.111. [PubMed] [CrossRef] [Google Scholar]

- [33]Naseer S., Hussain S., Naeem N., Pervaiz M., Rahman M. The phytochemistry and medicinal value of Psidium guajava (guava) Clin. Phytosci. 2018;4:32. doi: 10.1186/s40816-018-0093-8. [CrossRef] [Google Scholar]
- [34]Soliman F.M., Fathy M.M., Salama M.M., Saber F.R. Comparative study of the volatile oil content and antimicrobial activity of Psidium guajava L. and Psidium cattleianum Sabine leaves. Bull. Fac. Pharm. Cairo Univ. 2016;54:219–225. doi: 10.1016/j.bfopcu.2016.06.003. [CrossRef] [Google Scholar]
- [35] <https://www.webmd.com/vitamins/ai/ingredientmono-1133/guava>
- [36]https://pharmeasy.in/blog/guava-fruit-benefits-amazing-uses-of-guava-leaves/#Benefits_of_guava_leaves