Health Safety of Guava Produced in Selected Guava Production Systems

Archchi U.E., Weerakkody W.A.P.* **and Gunawardane C.R.**[1]
Department of Crop Science,
Faculty of Agriculture, University of Peradeniya, Peradeniya, Sri Lanka

Guava (*Psidium guajava Linn*.) is one of the principal tropical fruits which is largely consumed in Sri Lanka in the fresh form. It is also one of the fruits that has a high export potential. Addressing the question of "health safety of guava fruits" under different crop management conditions was found to be a timely important topic because consumer concerns over the fresh fruit quality and health safety have increased substantially in recent years. Therefore, this study was conducted to determine whether there is a correlation between crop management intensity level (High, Medium, Low) and the fruit qualities and pesticide residue levels of guava. For the qualitative assessments, guava samples were collected from farmer fields at harvesting maturity stage. Total Soluble Solid (TSS), titratable Acidity (TA), fruit volume, fruit weight, fruit diameter, fruit firmness, L*, a*, b* values, and residue levels of commonly used pesticides were quantified in fresh samples. Residues of pesticides were analyzed by Gas chromatography-Mass Spectrometry. The results indicated that the residues of common pesticides were not detected in any of the samples. Meanwhile, the crop management intensity level (High, Medium, Low) was found to be not significant ($P<0.05$) on the selected quality parameters of fresh guava. Low rate of application of pesticides due to high cost and adhering to safety guidelines were found to be the most probable reasons for this situation. It can be concluded that the present-day crop management in guava cultivations does not have any harmful effect on fresh fruits with respect to pesticide residues. However, this conclusion needs verification through repeated studies using a better sampling strategy, before recommending the health safety of fresh guava fruits in Sri Lanka.

Keywords: Crop Management, Gas chromatography-Mass Spectrometry, Guava, Pesticide residue

[1]National Institute of Post-Harvest Management, Jayanthi Mawatha, Anuradhapura, Sri Lanka
*wapweerakkody@agri.pdn.ac.lk