

Imidacloprid and Acetamiprid Residues in Okra and Brinjal Grown in Peri-Urban Environments and Their Dietary Intake Assessment

Authors : Muhammad Atif Randhawa, Adnan Amjad

Abstract : Assessment of insecticides used for growing vegetables in comparison with their safety status was the main purpose of this study. A total of 180 samples of okra (*Abelmoschus esculentus* L.) and brinjal (*Solanum melongena* L.) comprising 30 samples of each vegetable were collected from the peri-urban farming system of Multan, Faisalabad and Gujranwala. The mean value for imidacloprid residues found in brinjal (0.226 mg kg⁻¹) and okra (0.176 mg kg⁻¹) from Multan region were greater than the residues reported from Gujranwala and Faisalabad, showing excessive application of imidacloprid in Multan. Out of total 180 samples analysed for imidacloprid and acetamiprid residues, (90 samples for each of okra and brinjal), 104 (58%) and 117 (65%) samples contained detectable imidacloprid and acetamiprid residues, respectively. Whereas 10% and 15% samples exceeded their respective MRLs for imidacloprid and acetamiprid residues. Dietary intake assessment for imidacloprid and acetamiprid was calculated according to their MPI values 3.84 and 4.48 mg person⁻¹day⁻¹, respectively. The dietary intake assessment data revealed that although a reasonable proportion of samples exceeded the MRLs in studied areas but their consumption was found within safe limit in comparison to values obtained for MPI.

Keywords : Acceptable Daily Intake (ADI), insecticides, Maximum Residual Limits (MRLs), risk assessment, vegetables

Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development

Conference Location : Chicago, United States

Conference Dates : December 12-13, 2020