

DETERMINATION OF PESTICIDE RESIDUES IN VEGETABLES COLLECTED FROM DIFFERENT AREAS OF BOGURA DISTRICT IN BANGLADESH

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Executive Summary

The study was conducted to analyze pesticide residues in country bean and yard long bean collected from Raja Bazar, Gabtali Bazar, Sonatola Bazar, Mohasthangor Bazar and Shibganj Bazar of Bogura district from November, 2017 to February, 2018. The collected samples were analyzed using Quick, Easy, Cheap, Effective, Rugged and Safe (QuEChERS) extraction technique and Gas Chromatography coupled with Flame Thermionic Detector for the determination of commonly used pesticide residues (i.e., Chlorpyrifos, Dimethoate and Quinalphos) in 35 samples of country bean and 35 samples of yard long bean. Among the analyzed samples of country bean, 4 samples (11% of the total number of samples) contained pesticide residues of Quinalphos and 31 samples (89% of the total number of samples) contained no detectable residue of pesticides. Among these 4 samples, 2 had residues above the Maximum Residue Limit (MRL) and 2 had residues below the MRL set by European Commission. Out of 35 samples of yard long bean, 5 samples (14% of the total no. of samples) contained residues of Chlorpyrifos, Dimethoate and Quinalphos and 30 samples (86% of the total number of samples) contained no detectable residue of pesticides. Among these 5 samples, 2 had residues of Dimethoate and Quinalphos above the MRL and 2 had residues of Dimethoate below the MRL and 1 sample contained two pesticide residues, these were Dimethoate and chlorpyrifos. In this sample, the level of detected Dimethoate residue was above the MRL, while the level of detected Chlorpyrifos residue was below the MRL in this contaminated sample. Quinalphos and Dimethoate were detected in most of the contaminated country bean and yard long bean samples, while Chlorpyrifos was also detected. This study reflects a randomized scenario of pesticide contamination in vegetables especially in country bean and yard long bean available in the local markets of Bogura district.

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