Abstract

Pesticide applications are a serious risk to health, environment and exports, if not applied properly in order to produce healthy grains without pesticide or under maximum residue limits (MRL). The objective of this work was to identify the level of residues that are generated by insecticide application in storage trials in corn and fungicide application in experimental field trials in wheat, their variations and the relationship with the MRLs. The purpose of the storage trials and experimental field in corn and wheat respectively, was to determine whether the management practices currently used in relation to pesticide application results in toxic residues in the grains exceeding MRLs. The insecticide treatments were dichlorvos and deltamethrin plus chlorpyrifos-methyl applied on stored corn grains and the fungicide tebuconazol applied at the wheat field. For pesticide extraction from grains the ‘QuEChERS’ technique was used, while pesticide residues were determined by high resolution gas chromatography with mass detector. In stored corn the residue levels decrease with prolonged storage time of the grains, being below the MRLs. In field experiments the results show high values of tebuconazole residues in wheat grains, exceeding MRLs.