Title of Article: Nematicidal Effects of Carbofuran and GC-MS Analysis of its Residue in Pineapple Fruits

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Abstract

Concerns over the safety of food items from fields treated with nematicides had risen in recent times. In this study, two field experiments arranged in a Randomized Complete Block Design were conducted to assess the efficacy of poultry manure and carbofuran in suppressing nematode population and determine the residual presence of the nematicide in pineapple fruits. Three poultry manure rates (0, 20 and 25 metric tonnes per hectare) and carbofuran treatments (0, 3.0 kg a.i/ha and 3.4 kg a.i/ha) were applied to two naturally infested pineapple fields. Twenty core soil samples per plot were collected from plants rhizosphere at 3, 6, 9, 12, 15 and 18 months after planting. Fifty grams each of chopped pineapple samples from the carbofuran-treated and untreated plots was extracted with 20ml of ethyl acetate solution for fruit analysis to determine the residual presence of carbofuran using Gas Chromatography-Mass Spectrometry (GC-MS). The study indicated that poultry manure and carbofuran significantly ($P \leq 0.05$) suppressed nematode population in both locations and promoted crop yield. The GC-MS test showed that carbofuran and its metabolites were not detected in the pineapple fruits, suggesting that carbofuran is not likely to constitute dietary risks to consumers of fruits from treated plots