

Population Behaviour of Pineapple Nematodes in Fields Amended with Carbofuran and Poultry Manure

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Soil nematodes are bio-indicators of ecosystem conditions and soil health. Studies to determine the influence of seasonal variation on the population behaviour of plant-parasitic nematodes in pineapple fields amended with carbofuran (0, 3.0, and 3.4 kg a.i/ha) and poultry manure (0, 20, 25 metric tonnes per hectare) was conducted at National Horticultural Research Institute, Ibadan and Federal University of Agriculture, Abeokuta, Nigeria. The investigation was conducted in 2009 and 2010. Initial nematode composition of soil in the experimental sites was determined prior to planting, twenty core soil samples per plot were also collected from the rhizosphere of pineapple plants at 3, 6, 9, 12, 15 and 18 Months After Planting (MAP) to determine the soil nematode density for each month. The prominent plant-parasitic nematodes found in association with pineapple in the two fields include; *Rotylenchulus reniformis*, *Pratylenchus brachyurus*, *Helicotylenchus dihystra* and *Scutellonema brachyurum*. Initial low populations of *R. reniformis* and *P. brachyurus* were recorded in the first year of pineapple establishment but the soil nematode density increased significantly in the second year of cultivation. Although low population of the soil nematodes were recorded during the dry seasons, the soil nematode density increased progressively as the rain became more established, with the peak densities coinciding with rainfall peaks. Soil amendment with 3.4kg a.i/ha carbofuran gave higher nematode suppression in the two locations. Apart from improving the soil nutrient status, soil amendment with poultry manure also suppressed nematode population in the two pineapple fields. The study indicates that amendment with poultry manure is an environmentally safe alternative to chemical nematicides in the bid to promote sustainable agriculture.