

Title of Article: Studies on the Distribution of Plant-parasitic Nematodes Associated with Pineapple in Delta, Imo and Cross River states of Nigeria

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Outlet: Australian Journal Of Basic And Applied Sciences (AJBAS)

Date:

Abstract

Background: Plant-parasitic nematodes are important pests of horticultural crops causing damage and significant reduction in the crop yield of pineapple. A survey was conducted to determine the types, frequency and population distribution of plant-parasitic nematodes associated with pineapple in some pineapple-producing states in Nigeria. A total of 30 farms were sampled from Delta, Imo, and Cross-River States using the Agricultural Development Project in each state as a pilot to locate representative farmlands in the States. Soil samples for the survey were collected from the rhizosphere of the pineapple plants with the aid of a soil auger to a depth of about 15 cm and within a 25 cm radius from the base of the pineapple plants. Vermiform nematodes were extracted from 200g each of the composite samples using a modified Baermann extraction tray set-up. **Objective:** To provide an update on the diversity and population distribution of plant-parasitic nematodes associated with pineapple in Delta, Cross River and Imo states of Nigeria. **Result:** Fourteen species of Plant-Parasitic Nematodes (PPN) were found associated with pineapple from the fields surveyed as follow: *Pratylenchus brachyurus*, *Meloidogyne incognita*, *Rotylenchulus reniformis*, *Helicotylenchus dihystera*, *Scutellonema brachyurum*, *Tylenchus* sp., *Hoplolaimus pararobustus*, *Criconemoides limitaneum*, *Paratylenchus minutus*, *Gracilacus* sp., *Hemicycliophora* sp., *Aphelenchus* sp., *Aphelenchoides* sp. and *Xiphinema nigeriense*. The most prominent phytophagous nematode found in association with pineapple on all the fields was *P. brachyurus* with frequency ratings of 100%, 92% and 87% from Delta, Imo and Cross-river states respectively. *Meloidogyne* sp., *Pratylenchus reniformis* and *Rotylenchulus reniformis* were also frequently encountered in the three states. *Gracilacus* sp. was recorded on pineapple for the first time in Nigeria. **Conclusion:** The study indicated a widespread distribution of PPN on pineapple in south-south and south-east Nigeria which could be a factor responsible for low yields recorded in some pineapple fields. Therefore, there is an obvious need for pineapple farmers to control plant-parasitic nematodes for improved crop yield.