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A survey of plant-parasitic nematodes of yam farms in Awka-North local government area, Anambra state, Nigeria.

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ABSTRACT

Objective: Soil-inhabiting plant parasitic nematodes of yam were investigated in yam fields in Awka-North Local Government Area of Anambra state, Nigeria.

Methodology and Results: Three farmlands each were randomly selected for sampling from the seven communities that make up the study area. Five yam plants were also randomly selected from each farm for sampling. Soil samples around the roots of each plant were collected using a hand trowel at a depth of 15-30 cm. The relative percentage composition of nematodes in soils and yam tubers from each of the sampled communities (in 10mL of extract suspension) was determined at the International Institute of Tropical Agriculture (IITA), Ibadan. The results showed that *Pratylenchus sp.* 140 (40.60%) were the most prevalent species in the soil samples followed by *Meloidogyne sp*. 95 (27.54%), *Scutellonema sp*. 50 (14.50%), *Helicotylenchus spp*. 25 (7.25%), *Criconema sp*. 20 (5.80%), *Radopholus sp*. 10 (2.90%) and cysts of *Heterodera sp*. being the least prevalent with prevalence rate of 5 (1.45%). Similarly, out of the 180 plant parasitic nematodes recovered from the yam tubers, 130 (72.22%) were *Pratylenchus spp*., 40 (22.24%) were *Scutellonema spp*., 5 each (2.78%) were *Meloidogyne spp*. and *Radopholus spp*. respectively. However, *Helicotylenchus spp., Criconema spp*. and cyst nematodes were not encountered in yam tuber samples. Amansea and Isuaniocha had the highest level of both soil and yam parasitic nematode infestation, although difference with respect to percentage composition of nematodes in the samples and the communities were not significantly different ($P>0.05$). However, there was a significant difference ($P< 0.05$) between the number of nematode genera encountered in the soil and tuber samples.

Conclusion and application of results: The presence of these parasitic nematodes in the study area suggests that they can be important pathogens of yams although their presence has usually been neglected. The presence of these plant parasitic nematodes could constitute serious impediments to the growth and yield of yams in Awka-North L.G.A.

Key Words: Soil nematodes, *Meloidogyne*, *Helicotylenchus*, *Dioscorea* spp.