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ABUNDANCE OF PLANT-PARASITIC NEMATODES FROM RHIZOSPHERE OF PEPPER PLANTS AS INFLUENCED BY SOIL PHYSICAL AND CHEMICAL PROPERTIES IN PARTS OF NIGER STATE, NIGERIA

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ABSTRACT

A survey was conducted to investigate the effect of physico-chemical properties of soil on the incidence and infestation of plant-parasitic nematodes on Pepper, Capsicum spp from two local government areas (LGAs) of Niger State, Nigeria. One hundred and twenty soil and plant root samples were randomly collected from pepper fields and examined. Results showed that six genera of plant-parasitic nematodes were recorded. The most frequently observed and widely distributed nematode species were Helicotylenchus multicinctum followed by Meloidogyne spp. and Scutellonema bradys with frequencies of occurrence of 48.2, 34.8 and 12.6 % respectively. Highest nematodes population density of 405 in 100 ml soil was recorded from Maje followed by Annaba with 205, both in Magama LGA, while the lowest nematodes of 20 in 100ml soil were recorded from Nagwamatse in Kontagora LGA. Correlation analysis revealed a weak relationship between soil physico-chemical properties and nematode population density with maximum value of r = 0.38. The results also showed that apart from the direct influence of the host plant, soil properties play an important role in the distribution, abundance, and structure of plant parasitic nematode communities. This demonstrates the potential of nematodes as bio-indicator organisms of soil health.

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