

ABSTRACT

The plant-parasitic nematodes *Rotylenchulus reniformis*, *Pratylenchus brachyurus*, *Aglenchus costatus*, *Ditylenchus* sp., *Aphelenchoides* sp., *Macrosposythonia ornata* and *Tylencholaimus* sp. were found in samples obtained from the two major soybean growing areas in Trinidad. *R. reniformis* and *A. bicaudatus* were found on soybean at Field B, University of the West Indies, St. Augustine. *R. reniformis* occurred most frequently.

Soil and root populations of *R. reniformis* and soil populations of *A. bicaudatus* were higher in Piarco Clay Loam than in Chaguaramas Sandy Loam, 8 weeks after inoculation and at plant maturity, when these nematodes were introduced at three inoculum levels. However, root populations of *A. bicaudatus* were not appreciably different in the two soil types. Highest soil populations were obtained at the highest inoculum level, but the highest root populations were obtained at the lower inoculum levels.

*R. reniformis* completed its life-cycle in 13-17 days and 15-17 days after sowing, in Jupiter and Improved Pelican soybean varieties, respectively. A higher invasion rate was observed for the nematode in Jupiter than in Improved Pelican.

In a one-year study, highest root and rhizosphere populations of *R. reniformis* and *A. bicaudatus* were recorded during May-June. Multiple regression analysis showed that



population densities of *R. reniformis* and root populations of *A. bicaudatus* were more influenced by rainfall and relative humidity and rhizosphere population densities of *A. bicaudatus* by rainfall and temperature, than by other combinations of environmental factors.

The nematicide, Vydate-L, effectively reduced soil plant-parasitic nematode population densities. Significant increases in growth and yield were obtained when Jupiter and Improved Pelican were grown in plots treated with the nematicide. Dry weights of seeds of Jupiter and Improved Pelican were increased by 40.4% and 64.8%, respectively, on nematicide treatment. It is concluded that plant-parasitic nematodes can be a limiting factor in soybean production in Trinidad.