

## RELATIONSHIP OF NEMATODES TO YIELD OF MAIZE GROWN UNDER DIFFERENT CULTIVATION REGIMES

MAHFOUZ M. ABD-ELGAWAD

*Pests & Plant Protection Department,  
National Research Centre, Dokki, Giza, Egypt.*

### Abstract

Relationships between population densities of different nematode species at harvest and yield of maize were examined for 4 cropping sequences on sandy loam soil in Ismailia, Egypt. Correlations calculated between the total plant-parasitic nematode population densities and yield were not significant for individual cropping sequences tested; whereas among the individual genera, population densities of *Helicotylenchus pseudorobustus* only had significant ( $P=0.05$ ) negative correlation with yield in two cropping sequences. Log-transformed nematode densities, however, revealed additional negative correlation between maize yield and density of *Heterodera zae*. The general relationship was described by  $Y = 409.1283 - 1.2113 X_1 - 0.7330 X_2 + 0.2430 X_3 + 0.2429 X_4$  where  $Y$  = yield or ear weight (g/plant),  $X_1$ ,  $X_2$ ,  $X_3$  and  $X_4$  nematode population densities of *Helicotylenchus pseudorobustus*, *Heterodera zae* juveniles, *Pratylenchus brachyurus* and *Tylenchorhynchus latusper* 100 cm<sup>3</sup> soil at harvest; respectively ( $P = 0.0628$ ). Accordingly, maize yield loss estimate caused by the nematodes was 63 g/plant. At harvest, no significant correlations were found between population densities of the different nematode species in each site including a cropping sequence. Yield components of individual maize cv. Giza 2 plants were more than that produced by cv. Double hybrid 202.