

50 ppm and more. In lesser concentrations (5 ppm and 25 ppm) activity and survival periods were slightly more. The optimal pH was found to be 5.4-5.8 suggesting its compatibility to an acidic habitat.

**EFFECT OF SIMULTANEOUS INOCULATIONS AND PRIOR ESTABLISHMENT OF *HETERODERA ZEAЕ MELOIDOGYNE INCOGNITA* AND *TYLENCHORHYNCHUS VULGARIS* SINGLY AND IN COMBINATION ON PENETRATION OF *H. ZEAЕ* AND *M. INCOGNITA* INTO MAIZE ROOTS:** R. K. Kaul and C. L. Sethi, Division of Nematology, Indian Agricultural Research Institute, New Delhi-12.

Three day old seedlings of maize (cv. Ganga-5) were inoculated with 50 larvae of *H. zeaе* or *M. incognita*, either singly or in combination with 50 individuals each of the species in glass vials (7.5 x 2.5 cm). The experiment comprised of six treatments. Similarly in an another experiment comprising of 12 treatments, 3 day time interval was given to one or two of the species to establish themselves before addition of the inoculum of the 3rd species. The observations on the number of larvae penetrated into root system were recorded at one day interval for 7 days. Penetration continued upto 7 days with the majority penetrating by 4th day. In case of simultaneous inoculations, *M. incognita* did not seem to interfere with penetration of *H. zeaе*. As against this *M. incognita* was adversely affected by the presence of *H. zeaе* occurring singly or in combination with *T. vulgaris*. Even though presence of *T. vulgaris* in simultaneous inoculations tended to increase penetrations of both the endoparasites to varying degrees, its earlier establishment affected their penetration adversely. In general prior establishment of any of the species, either singly or in combination, significantly reduced the invasiveness of both the other species. Larval penetration of both the nematodes was more whenever these were inoculated earlier.

**POPULATION FLUCTUATIONS AND VERTICAL DISTRIBUTION OF *XIPHINEMA INSIGNE* LOOS, 1949 IN SOIL AROUND THE ROOT OF *CITRUS AURANTIFOLIA* L.:** B. Mukherjee, R. Mukherjee, and M. K. Dasgupta, Plant Pathology Laboratory, College of Agriculture, Visva-Bharati University, Sriniketan-731236 (W.B.)

Seasonal population fluctuations of *Xiphinema insigne* was studied in a fifteen years old citrus orchard in West Bengal during 1978-79. Composite soil