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ASSESSMENT OF DISEASE INCIDENCE, FREQUENCY AND DENSITY OF ROOT-KNOT NEMATODES ASSOCIATEDWITH TOMATO ROOTS IN SINDH, PAKISTAN

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Abstract

Survey of 37 tomato localities of 8 districts of Sindh, Pakistan *viz.,* Hyderabad, Mirpurkhas, Badin, Thatta, Nawabshah, Larkana, Shikarpur and Khairpur was carried out for assessment of disease incidence, identification of root-knot nematodes associated with tomato roots as well as to observe their frequency and density for determining their occurrence and geographical distribution in Sindh, Pakistan. The root-knot disease incidence (%) was estimated by observing 1850 apparently diseased plants. The incidence was recorded with varying degree from 0 to 60 %. The highest disease incidence (60 %) was recorded in Hoosri followed by Usman Shah (58 %) in district Hyderabad and the lowest (2 %) at Rattodero and Chatto Mangi (Larkana and Shikarpur districts respectively), but there were no root-knot symptoms at Dhamrah, Banguldero, Sattar Bhutto (district Larkana) and Madeji (district Shikarpur). On an overall basis, the maximum incidence was recorded from Hyderabad (56.0 %) followed by Badin (49.2 %), Thatta (45.2 %), Mirpurkhas (39.6 %), Nawabshah (36.8 %) and Larkana (30.4 %) districts; with the lowest at Shikarpur and Khairpur districts (1.0 and 1.2 % respectively). Three root-knot nematode species viz., *Meloidogyne incognita, M. javanica* and *M. arenaria* were identified in association with tomato roots. *M. incognita* was found to be predominant with maximum frequency (52.0 to 100 %), density (285 to 355) and prominence value (205.51 to 289.05), followed by *M. javanica* and *M. arenaria*. Their frequency (%), density and prominence value ranged between 30.4 to 40.0, 140 to 165 and 86.85 to 251.31, respectively for *M. javanica* and remained between 2.3 to 9.5, 35 to 85 and 5.3 to 26.19 for *M. arenaria*. All the three species were found associated with tomato root samples taken from Hyderabad, Mirpurkhas, Badin, Thatta, Nawabshah and Khairpur districts, but *M. javanica* and *M. arenaria* were not found in samples collected from Larkana and Shikarpur districts.