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NEMATODES ASSOCIATED WITH OLIVE TREES (*OLEA EUROPEA* L.) IN EASTERN CASPIAN SEA REGION OF IRAN

A. Taheri, T. Davarian and S.J. Sanci

Department of Plant Protection, Faculty of Crop Sciences, Gorgan University of Agricultural Sciences and Natural Resources, Basidj square, 49138-15739, Gorgan, Iran, e-mail: t_davarian@yahoo.com

In a two years nematodes survey program on olive during 2003-2005, more than 180 soil and root samples were collected from the rhizosphere of olive seedlings and trees in eastern Caspian Sea region of Iran. Nematodes were extracted by sieving and centrifugal sugar floatation technique (Jenkins, 1964), then fixed and transferred to glycerine according to Seinhorst method (De Grisse, 1969) and mounted on permanent slides. Nematodes were studied under the light microscope equipped with drawing tube. In this study, 15 species belonging to 13 genera were identified. There were 11 species of Tylenchina, 1 species of Aphelenchina, 1 species of Dorylaimida and 2 species of Rhabditida. In Tylenchina, 18.7% of populations were endoparasites, 71.2% were ectoparasites and 11.1% were nonparasitic forms. The most economically important species was *Meloidogyne javanica* and the most dominant species with high population and distribution was *Helicotylenchus psuedorobustus*.

RESEARCHES ON SPECIES AND RACE DETERMINATION OF ROOT-KNOT NEMATODES (*MELOIDOGYNE* SPP.) FOUND IN GREENHOUSE OF SAMSUN, TURKEY

T. Kati and S. Mennan

¹Ondokuz Mayıs University, Agricultural Faculty, Plant Protection Department, 55139, Samsun, Turkey, e-mail: tuba_1980@hotmail.com, smennan@omu.edu.tr

A survey was conducted in totally 150 greenhouses between July and September 2004 and 2005 for determination presence and infestation level of root-knot nematodes in Bafra and Çaramba plains (Middle Black Sea Region) of Samsun, Turkey. It was found that, 80 greenhouses (53%) were infected with root-knot nematodes with different infested level. Tomato (*Lycopersicon esculentum* L.), cucumber (*Cucumis sativus* L.), eggplant (*Solanum melongona* L.), pepper (*Capsicum annuum* L.), bean (*Phaseolus vulgaris* L.) and lettuce (*Lactuca sativa* L.) were the most producing vegetables in surveyed greenhouses. The highest infected vegetable was cucumber (58%) and tomato (26%) in greenhouses. Kinloch Gall index (0-5) was applied to the infected roots and it was observed that, almost half of the infected greenhouses were highly infested (43.3%). The percentage of gall indexes were determined 16.6%, 13.8%, 19.4% and 6.9% respectively. *M. incognita* (57.2%), *M. arenaria* (33.3%) and *M. hapla* (9.5%) were identified using perineal pattern of females. Race determination was applied by North Carolina Host Test to greenhouses in which single species had been found. *M. incognita* race 4 and race 2 and *M. arenaria* race 1 was found resulting race determination in Bafra plain greenhouses to be present of 38.5% of greenhouses.

DISTRUBUTION AND INFESTATION RATES OF CYST NEMATODES (*HETERODERA* SP.) IN CABBAGE GROWING AREAS IN SAMSUN

S. Mennan¹, Z. Handoo² and O. Ecevit¹

¹ Ondokuz Mayıs University, Agricultural Faculty, Plant Protection Department, 55139, Samsun, Turkey, e-mails: smennan@omu.edu.tr, osmane@omu.edu.tr

² USDA, ARS, Nematology Laboratory Bldg. 011A, Rm 159, Barc-West, Beltsville, MD, 20705, e-mail: handooz@ba.ars.usda.gov

Cabbages are cultivated over 7058.5 ha in Samsun (northern part of Turkey). White head (*Brassica oleracea* L. var. *capitata* L. subvar. *alba*), red head cabbage (*Brassica oleracea* L. var. *capitata* L. subvar. *rubra*), and kale (*Brassica oleracea* L. var. *acephala*) are the most produced varieties and the annual yield production for 2004 of white head, red head cabbages and kale are 87.628, 60.106 and 41.113 t respectively. A survey was conducted in the Samsun (Middle Black Sea Region) of Turkey to study the occurrence and percentage of cysts nematodes associated with cabbages (*Brassica* spp.) in 2002, 2004 and 2005. A total of 101 soil and root samples were analyzed and it was found that 45 fields (44.55%) were infested with cysts nematodes. After identification process by using second stage juveniles, cysts and females, *Heterodera cruciferae* Franklin was found as the most common (77.77%) and 9 fields were infested with *Heterodera mediterranea* Vovlas, Inserra and Stone, and just only 1 field (2.22%) was determined infested with both *H. cruciferae* and *H. mediterranea*. Among cabbages varieties, red head cabbages were the most infected (70.58%) and white head was second (58.06%). It was so interesting that, just only 3 (8.33%) kale growing areas were found as an infected with *H. cruciferae*. The highest population level was 947 cysts/l soil in white head cabbages filed for *H. cruciferae* and 1160 cysts/l soil in red head cabbages filed for *H. mediterranea*. *H. mediterranea* was the first report for Turkey and white and red head cabbages also were the first hosts for *H. mediterranea*.

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RELATIONSHIP OF POPULATION DENSITIES OF SUGAR BEET CYST NEMATODE AND SUGAR BEET YIELD IN MICROPLOTS

S. Fatemy¹ and R. Parvizi²

¹ Nematology Department, Plant Pests and Diseases Research Institute, P. O. Box 1454, Tehran, 19395, Iran, e-mail: sfatemy@yahoo.com

² Plant Pests and Diseases Research Laboratory, Agricultural Research Center, Uromieh, West Azarbaijan, Iran

Most of the sugar consumed in Iran derives from sugar beet that is cultivated on about 180000 ha with an average yield of 5 million metric tons per year. Continuous cultivation of sugar beet is one of the major factors in maintaining high population levels of nematode in the field, and in some of very infested areas low yield of less than 10 tones/ha or failure of crop to grow has been attributed to *H. schachtii*. Management measures are necessary to decrease damages caused by *H. schachtii* and this requires information on the yield of sugar beet as affected by a range of population densities of the nematode. Differences in tolerance limits indicate the need for information related to local environmental conditions, such information is lacking in Iran. In two microplot experiments tolerance of sugar beet to different population densities of *Heterodera schachtii* was determined. Plots contained soil infested with 0, 0.25, 0.50, 1, 2, 4, 8, 16, 32, 64, or 128 eggs of *H. schachtii*/g soil, planted with one sugar beet seedling in early April and harvested after 7 months. Average tolerance limits of sugar beet to *H. schachtii* was 0.8 egg/g soil and average yield losses of 20%, 50% and 80% occurred at initial population densities of 5, 14 and 40 eggs/g soil. Maximum average reproduction rate of 83 fold occurred at 0.25 eggs/g soil and the largest nematode density happened at the highest inoculum density.