PLANT-PARASITIC NEMATODES IN SOUTHWESTERN ONTARIO IN 1961

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A total of 290 soil and root samples were submitted for diagnosis, to the Nematology Section, Research Station, Harrow, in 1961 by provincial extension officers and growers. This is the largest number on record. In general, the root lesion nematode, Pratylenchus penetrans and the northern root-knot nematode, Meloidogyne hapla, were the predominant forms encountered.

The root lesion nematode, Pratylenchus penetrans was again widely distributed on flue-cured tobacco in the Delhi area. A total of 126 samples were submitted for examination. The importance of this nematode in the production of flue-cured tobacco can be gauged by the increased use of nematicides for its control; from approximately 50 acres treated in 1958 to 1500 acres in 1961. Sixty-five samples of eggplant received from the Harrow-Leamington district were all infested with **P.** penetrans. Samples from five greenhouses of chrysanthemums and three fields of tomatoes in the Leamington area showed high populations of the same nematode,

The incidence of the northern root-knot nematode, Meloidogyne hapla, in southwestern Ontario continues to increase. A greater number of the samples submitted in 1961 were found to be infested with this nematode and new areas of infestation were found in widely separated areas in the province.

For the first time in many years M. hapla was found in fields, of flue-cured tobacco near Delhi. This nematode was known to occur in the area prior to the introduction of a rye-tobacco rotation (3) but it has not been reported on tobacco since 1943 (1). In 1961, six tobacco samples from Mt. Brydges and two from Houghton were moderately to heavily infested with M. hapla. The nematode is not expected to occur in a rye-tobacco rotation since rye is an immune crop, but it is likely that vetch and other weeds that occur in many rye fields would allow a build-up of nematode populations. The economic importance of the root-knot nematode in flue-cured tobacco could not be assessed because of the invariable presence of Pratylenchus penetrans.

The degree of infestation of M. hapla on carrot in the Thedford, Jeanette's Creek and Bradford Marshes was much the same as in 1960(2). However, additional areas of infestation were found at all locations. The severity of damage to carrots appears to depend on the preceeding crop, being most severe following potatoes and least severe following onions, Five acres of carrots on sandy soil near Alliston were severely damaged by M. hapla.

Seventeen samples of eggplant from the Harrow-Leamington area were slightly to heavily infested with M. hapla. Although onions are not usually affected by this nematode, two. acres of onions, following a crop of potatoes, were severely stunted by a heavy infestation.

The southern root-knot nematode, Meloidogyne incognita, is the predominant nematode species in greenhouses in southwestern Ontario. This pest occurs each year on cucumbers, tomatoes and lettuce. In 1961, tobacco seedlings in one greenhouse at Learnington were infested with M. incognita.

Since the discovery of the bulb and stem nematode, Ditylenchus dipsaci, in the Leamington Marsh in 1957, annual surveys have been carried out to determine its status, In 1961, a survey of fifteen farms that had previously

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been found to be infested showed that a total of nine acres on three of the farms remain infested. In each case, the grower had ignored the control recommendations and had continued to plant onions each year. Those growers who had followed the recommended two-year rotation with a non-susceptible crop harvested onions in 1961 that were completely free of nematode injury. This survey has confirmed the findings of 'laboratory and greenhouse studies at Harrow that D, dipsaci cannot survive in soils where non-host crops are grown for two seasons.

Literature Cited

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