New York State Integrated Pest Management Program

Factors That Induce Forking in Carrots

Dr. George Abawi, Dept. of Plant Pathology,
NYS Agricultural Experiment Station, Geneva, NY

Carrots are an important commodity in New York. In 1996, carrots were grown on 1,700 acres in New York, valued at $2,915,000 (New York Agricultural Statistics Service, Albany, NY). Consumers and wholesale buyers demand high quality carrots, including proper size, no blemishes, and, most important, perfect shape. Several factors have been reported or suggested to negatively affect both the yield and quality of carrots, including various pests and disease organisms as well as a number of soil factors such as excess soil moisture, high water table, compacted/stony soils, soil fertility, fertilizer placement, and excess liquid manure applications. We have been especially interested in the causes contributing to forked, galled and stubby roots of carrots.

It has been previously reported that root-knot nematodes cause forking and galls (knots) on the tap and fibrous roots as well as on the surfaces of the carrots. Over the past two years, we have been extensively studing the distribution, damage, and cost-benefit of controlling the Northern root-knot nematode (*Meloidogyne hapla*) in New York under a NAPIAP (National Agricultural Pesticide Impact Assessment Program) funded project. This nematode was found widespread on carrots and causing significant losses on carrots grown on organic and mineral soils. Depending on the field, infection by this nematode ranged from 17.9 to 82.1% and percentage of unmarketable yield varied between 4.3 and 35.6%. The application of the nematicide Vydate at the recommended rate significantly reduced the infection of the nematode, especially on tap roots, resulting in a higher marketable yield.

For a printed copy of the entire report, please contact the NYS IPM office at:

IPM House
630 W. North St.
New York State Agricultural Experiment Station
Geneva NY 14456
315-878-2353