

“Maryland Dividends”
Maryland Agricultural Experiment Station
College of Agriculture & Natural Resources
Premiums returned on investments in research, education and outreach.

Sustainable Management Alternatives for Root Knot Nematodes.
State General Funds, SARE



For more information about this project please contact:

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For additional information about this topic, please visit
<http://www.mdipm.umd.edu>



Sustainable Management Alternatives for Root-Knot Nematodes: Root galling in susceptible pepper roots resulting from Root-knot nematode infection.

Research Team:

Kathryn Everts, Robert Kratochvil and Sandra Sardanelli

Region of Impact:

State, Regional

Program Description:

Fields in Maryland (MD) cropped repeatedly to vegetables have reportedly experienced significant losses due to root knot nematodes, *Meloidogyne* spp.. Root knot nematodes affect more than 2,000 species of plants including forage crops, small grains, fruits, vegetables, field crops, nursery crops, and turf grasses. This wide host range makes crop rotation in vegetable production difficult where RKN is among the principal yield-limiting diseases. Root galling is often accompanied by stunting, chlorosis, and wilting that results in decreased quality and yield of vegetable crops. Where high population densities of this nematode exist, damage can be so severe as to result in crop failure. Historically, chemical nematicides have been the primary management tactic. However, loss of many nematicides due to environmental concerns and the costs of re-registration has focused attention on the development of alternative methods for nematode management.

Cooperators on the project include specialists in Agronomy, Entomology, Nematology and Vegetable Pathology. Using a combination of on-farm and field micro-plot experiments, this project explores sustainable management alternatives including the use of cover crops, non-host crops, reported nematode suppressive crops used as green manure, soil amendment of poultry litter, and alternative economic crops.

Project Classification:

1. Competitive Agricultural Systems in a Global Economy
4. Greater Harmony Between Agriculture and the Environment

Program Benefits:

The refinement of routine nematode sampling recommendations, validation of alternative nematode management tactics and demonstration of their economic benefits provide growers with additional tools for reducing pesticide use, lowering control costs and crop losses, and providing a more sustainable strategy for managing nematodes in vegetable and field crop rotation.

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**Sustainable Management Alternatives for Root Knot Nematodes.
(continued)**



Sustainable Management Alternatives for Root-Knot Nematodes: Field Studies.

Implementation of successfully tested tactics into currently used rotations will improve soil quality, reduce production inputs such as fumigation and insecticides, and prevent losses due to nematodes. Results are presented at grower meetings and summarized in various educational materials for delivery to the vegetable industry. Cost and benefits of integrating each management tactic into existing rotation systems are compiled by researchers and provided to growers.