

UNIVERSITY OF DELAWARE

COOPERATIVE

# EXTENSION Root-Knot Nematodes in Delaware

Eboni Traverso and Dr. Alyssa Koehler

#### Introduction

- Root-knot nematodes (RKN, *Meloidogyne* spp.) are microscopic roundworms that feed on plant roots.
- RKN prefer sandy soils and are present in many Delaware fields, particularly those with a history of vegetable production.
- *M. incognita*, the Southern root-knot nematode, is the most common RKN species in the region.
- Once RKN are established in a field, they are very difficult to fully eliminate and must be managed using an integrated approach.

### Identification and Diagnosis

- Above-ground symptoms can include stunting (Fig. 1), wilting, chlorosis or yellowing of the leaves, decreased plant vigor, and uneven growth throughout the field.
- Symptoms of RKN can be confused with nutrient deficiencies and a number of other diseases.
- Roots of susceptible plants can be examined for the presence of swellings called galls (Fig. 2).
- Galls may vary in size and disrupt water and nutrient uptake in the plant.
- If nematode damage is suspected, soil should be sampled at sites where symptoms are found and sent for testing.

### Host Range

- The host range of RKN is over 3,000 plant species, making crop rotation difficult.
- In addition to agronomic crops, this host range includes many grass and weed species.
- Rotation to varieties developed with resistance to RKN is the most effective way to rotate hosts.
- Planting resistant varieties can help lower nematode populations before planting a more susceptible crop.



Figure 1: Soybean plants from the same field with various levels of stunting due to infection by root-knot nematodes.



Figure 2: Tomato root system with galling from southern root-knot nematode.

## **Management Options**

- Integrated management approaches may include:
  - Host resistance
  - Chemical controls (nematicides, fumigants, seed treatments, etc.)
  - Biological controls
  - Cultural controls (crop rotation, cover-cropping, tillage, fallow periods, etc.)

This document is brought to you by the University of Delaware Cooperative Extension, a service of the UD College of Agriculture and Natural Resources — a land-grant institution. This institution is an equal opportunity provider. Reference to commercial products or trade names does not imply endorsement by University of Delaware Cooperative Extension or bias against those not mentioned. For recommendations for your state please contact your local Cooperative Extension agent.