

Plant Disease Notes

Root-Knot Nematode on Snap and Lima Beans

Root-knot (*Meloidogyne spp.*) nematodes (RKN) are the most common plant parasitic nematodes that damage fresh market beans in Alabama. Other nematode species such as root-lesion (*Pratylenchus spp.*), stubby root (*Trichodorus spp.*), reniform (*Rotylenchus reniformis*), and cyst (*Heterodera spp.*) are also found in Alabama fields and gardens but are not as damaging as RKN.

Symptoms. All plant parasitic nematodes that attack beans cause similar aboveground symptoms. Plants are often stunted though this rarely occurs uniformly over an area. Nematodes are usually distributed unevenly within a field or garden often resulting in stunted plants in circular or oval patches.

Leaves on infected plants are typically pale green to yellow in color. They often wilt during the warmest part of the day or during periods of drought. Symptoms are most severe in light, sandy soils. High plant parasitic nematode populations can often result in lower yields. Occasionally the plant dies.

Belowground symptoms of RKN damage appear as galls, knots, or swellings. Galls vary in size from the head of a pin up to ½ inch in diameter on larger roots. Galls cannot be removed as they are comprised of root tissue.

Galls on severely infected roots may fuse causing the root system to appear malformed. The disruption in normal root growth and root activity affects a plant's ability to take up water and essential nutrients resulting in the aboveground symptoms described previously.

If a nematode problem is suspected but no galling is observed, then another nematode species may be involved. To confirm this a soil sample taken from the affected area must be analyzed for nematodes by a diagnostic laboratory. Contact your county Extension agent for information on the proper way to take and ship a soil sample for nematode analysis.

Persistence and Transmission. Nematodes survive in the soil from year to year and become active as soil temperatures increase in the spring.

Control. Root-knot nematode is best controlled by using the following strategies:

- Use resistant or tolerant varieties. This is the most effective control of root-knot nematode. The lima bean variety Nemagreen is considered resistant to RKN. The snap bean variety Harvester is considered tolerant. Other varieties that are resistant or tolerant to RKN may become available after this report is published.

- Crop rotation. Rotations with non-host crops is an inexpensive way of reducing damaging levels of nematodes. Because RKN has a wide host range, however, a grower is limited to what crops he can rotate with. Usually a grass crop such as corn or clean fallowing is best. Use a nematode suppressive crop such as marigolds or velvetbean as a rotation alternative.

- Soil solarization can be effective in sterilizing the soil when environmental conditions are favorable.

- Use a nematicide. The nematicide “Mocap” is also registered for use on snap and lima beans.

Contact your county Extension agent for more information on soil solarization, nematode suppressive crops, and the proper use of a soil nematicide.



Your Experts for Life

ANR-1010

Edward J. Sikora, *Extension Plant Pathologist*, Professor, Entomology and Plant Pathology; **Joseph M. Kemble**, *Extension Horticulturist*, Associate Professor, Horticulture; and **Ellen M. Bauske**, former *Extension Associate*, all with Auburn University

Use chemicals only according to the directions on the label. Follow all directions, precautions, and restrictions that are listed.

For more information, call your county Extension office. Look in your telephone directory under your county's name to find the number.

Issued in furtherance of Cooperative Extension work in agriculture and home economics, Acts of May 8 and June 30, 1914, and other related acts, in cooperation with the U.S. Department of Agriculture. The Alabama Cooperative Extension System (Alabama A&M University and Auburn University) offers educational programs, materials, and equal opportunity employment to all people without regard to race, color, national origin, religion, sex, age, veteran status, or disability.

Web Only, **Revised Nov 2004**, ANR-1010

© 2004 by the Alabama Cooperative Extension System. All rights reserved.