

Nematode Control Recommendations For Soybean

Nematode surveys conducted on the Delmarva peninsula in the late 1970's demonstrated that there are varied populations of different plant parasitic nematodes on farms throughout Delaware. Threshold levels (nematode numbers at which plant injury may occur) have been established for certain of these nematodes. Nematode counts at or above these threshold levels should be considered as a basis for the implementation of control measures for susceptible crops. There are numerous cultural practices (rotation, fallow, resistant and tolerant varieties, etc.) which will reduce nematode populations. However, at times, such practices are not possible or feasible. When this is the case, the use of chemicals (nematicides) for nematode control should be considered in addition to cultural controls.

THRESHOLD LEVELS (Nematodes in 250 cc (1 cup) soil sample)

Damaging nematode	Fall Sampling	Spring Sampling
Root knot	500+	100+
Lesion	500+	300+
Root knot + lesion	250 + 250	50 + 150
Soybean cyst	1+	1+

(SCN Egg Assays are also conducted and thresholds for sandy soils are 1+)

NOTE:

- When EITHER Root-Knot or Lesion nematodes are present in a soil sample in numbers at or above the threshold level, control should be considered.
- For Root-Knot and Lesion COMBINATIONS, a minimum number of 250 Root-Knot nematodes in the Fall sampling, and 100 Root-Knot nematodes in the Spring sampling should be present before control measures are considered.
- Stunt, Spiral, Lance, Dagger, and Pin nematodes are also often detected in samples assayed from soybean fields. At the present time, knowledge of the need for control measures for these nematodes on soybean is limited. Recommendations for control of these nematodes will be indicated on assay report forms if control is considered advisable.

Cultural Control Measures

- Rotation: May be helpful for nematode problems in general, **BUT** is particularly effective for soybean cyst nematode (SCN). A 2 year rotation with a non-host crop will reduce SCN

populations. See Fact Sheet PP-2 “Soybean Cyst Nematode” for a complete control program for SCN.

2. Resistant Varieties. Probably the most effective control of soybean cyst nematode and root-knot nematode. See Fact Sheet PP-13, “Some Nematode Resistant Soybean Varieties”, for a listing of most resistant varieties available.

3. Green Manures and Soil Amendments. In general, the incorporation of large amounts of soil amendments organic matter into the soil reduces populations of plant-feeding nematodes. The decomposition products of some plants kill nematodes. These include butyric acid released during the decomposition of rye and timothy, and isothiocyanates released during the decomposition of rapeseed and other plants in the genus *Brassica*. Maximum benefit of these “natural” nematicides is obtained when the plant material is incorporated into the soil as green manure. Research in this area is continuing.

Chemical Control Measures

When other methods of control are not feasible, chemical control measures should be considered.

The following nematicide is labeled for use on soybeans:

<u>Nematode</u>	<u>Common Name</u>	<u>Trade names</u>	<u>Formulated Rate</u>	<u>Remarks</u>
Root-knot,	aldicarb	Temik 15G	11-22oz/1,000	Apply granules in a 6-inch band and immediately work into the soil or cover with soil. Plant seed in treated zone. Check label for restrictions on use on some soils and preventing ground water contamination.
stubby root and			linear row ft or	
lesion			10-20 lb/acre	
Soybean cyst				Use of Temik alone for the control of cyst nematodes is not recommended. A 2-year rotation plan using resistant cultivars and nonhost crops is more effective and considerably less expensive.

Caution: The information and recommendations in these fact sheets were developed for Delaware conditions and may not apply in other areas.