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Spring Sampling OK for Two Corn Nematode Species

Gregory L. Tylka

Iowa State University, gltylka@iastate.edu

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Spring Sampling OK for Two Corn Nematode Species

Abstract

Plant-parasitic nematodes can damage corn. Each year, several instances of this are discovered in Iowa. More frequent cropping of corn following corn and less frequent use of soil-applied insecticides that might have provided some nematode control may result in more instances of nematode damage to corn this growing season. Also, nematodes are more damaging to corn (and other crops) during hot, dry conditions, so if a [drought occurs in Iowa](#) in 2008, damage to corn from nematode feeding may be more common.

Keywords

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Spring Sampling OK for Two Corn Nematode Species ICM News

April 1, 2008

By Greg Tyłka, Department of Plant Pathology

Plant-parasitic nematodes can damage corn. Each year, several instances of this are discovered in Iowa. More frequent cropping of corn following corn and less frequent use of soil-applied insecticides that might have provided some nematode control may result in more instances of nematode damage to corn this growing season. Also, nematodes are more damaging to corn (and other crops) during hot, dry conditions, so if a **drought occurs in Iowa** in 2008, damage to corn from nematode feeding may be more common.

Assessing whether nematodes are damaging corn requires determining what species are present in a field and what their population densities (numbers) are when the numbers are at their highest. For most plant-parasitic nematodes that feed on corn, numbers increase through the first half of the growing season. So samples should be collected mid season, when nematode numbers likely are greatest, and then the numbers can be

compared to damage thresholds established for corn. Spring sampling is not recommended for most corn nematode species.



Corn seedlings damaged by needle nematode in southeast Iowa (photo Tom Hillyer).

However, Iowa fields with 70 percent or more sand content might be infested with the needle and/or the sting nematode (both species are restricted to sandy soils), and these nematodes migrate down into the soil in the middle of summer, when soils are warmest. So if damage from needle or sting nematode is suspected in a sandy field, samples should be collected in the spring or fall, not in the summer. Needle and sting nematode could be missed in mid-season samples.

To test for needle or sting nematode, collect 20 or more 12-inch-deep soil cores in the spring. Sampling can be done prior to planting. If sampling is done after crop emergence and damage to the young crop is seen, collect the soil cores from the root zone of corn plants within the area being damaged.

Soil cores should be mixed well, then placed in a moisture-proof bag and submitted for processing as soon as possible. Root tissue, which is required for an accurate diagnosis of corn nematodes in mid season, is not needed when sampling specifically for needle and/or sting nematode in the spring.

Samples for nematode diagnosis can be sent to the ISU Plant and Insect Diagnostic Clinic, 327 Bessey Hall, Iowa State University, Ames, IA 50011. The test for all corn nematodes, including needle and sting nematodes, is called a complete nematode count. Samples sent to ISU should be accompanied by a completed *Plant Nematode Sample Submission Form* (ISU Extension publication PD 32), and a check for the \$30 per sample processing fee.

For more information about corn nematodes, an ISU Extension publication titled *Nematodes That Attack Corn in Iowa* (PM 1027) is available online.

Greg Tylka is a professor of plant pathology with extension and research responsibilities in management of plant-parasitic nematodes.

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Greg Tylka *Professor*

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