Consider nematode feeding as cause for poor corn growth

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Consider nematode feeding as cause for poor corn growth

**Abstract**
Plant-parasitic nematodes can cause serious damage to corn. There are numerous species that occur in Iowa, including those with common names like the dagger, lance, lesion, needle, spiral, stubby-root, and stunt nematodes. Symptoms of nematode damage on corn include stunting and/or yellowing of foliage, uneven tasseling, and stunting, swelling, and/or browning of roots.

**Keywords**
Plant Pathology

**Disciplines**
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Plant-parasitic nematodes can cause serious damage to corn. There are numerous species that occur in Iowa, including those with common names like the dagger, lance, lesion, needle, spiral, stubby-root, and stunt nematodes. Symptoms of nematode damage on corn include stunting and/or yellowing of foliage, uneven tasseling, and stunting, swelling, and/or browning of roots.

Because the symptoms of nematode damage to corn are not unique and could be caused by many different factors, nematode damage to corn can only be confirmed through analysis of soil and root samples. And for most nematode species, their numbers increase during the first half of the growing season, peak sometime during midseason, and then decline later in the growing season. To determine if nematode damage is responsible for poor corn growth, it is necessary to determine the number of nematodes in an affected field when the numbers are near or at their peak and to compare those numbers to established damage thresholds. Consequently, soil and root samples should be collected in the middle of the growing season (mid- to late July). One exception to this situation is the needle nematode, which moves down into the soil profile in the heat of summer and is more easily detected at greater numbers in samples collected in the spring and fall. But experiences in the ISU Plant Disease Clinic over the past few years indicate that this nematode can be detected in soil and root samples collected in July and August.

To check for possible nematode damage to corn, collect a soil core or small shovelful of soil from the upper 12 inches of the soil profile from the root zone of 10 or more plants within the area suspected of being damaged by the nematodes. Also collect the roots from around 4 or 5 affected plants. Soil and roots should be placed in a moisture-proof bag and submitted for processing as soon as possible. Be sure to keep the samples cool until they are sent for processing and avoid sending samples late in the week to prevent their storage in hot conditions in transit over the weekend. Submitting a companion soil and root sample collected from nearby, healthy-looking corn plants often provides a helpful comparison.

Soil samples for analysis of corn nematodes can be sent to the ISU Plant Disease Clinic, 323 Bessey Hall, Iowa State University, Ames, IA 50011. The test for corn nematodes is called a complete nematode count. Samples 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.

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