

10-21-2017

Sampling for Nematodes that Feed on Corn Not Advised in the Fall

Gregory L. Tylka

Iowa State University, gtylka@iastate.edu

Follow this and additional works at: <https://lib.dr.iastate.edu/cropnews>

 Part of the [Agricultural Science Commons](#), and the [Agriculture Commons](#)

Recommended Citation

Tylka, Gregory L., "Sampling for Nematodes that Feed on Corn Not Advised in the Fall" (2017). *Integrated Crop Management News*. 2471.

<https://lib.dr.iastate.edu/cropnews/2471>

The Iowa State University Digital Repository provides access to Integrated Crop Management News for historical purposes only. Users are hereby notified that the content may be inaccurate, out of date, incomplete and/or may not meet the needs and requirements of the user. Users should make their own assessment of the information and whether it is suitable for their intended purpose. For current information on integrated crop management from Iowa State University Extension and Outreach, please visit <https://crops.extension.iastate.edu/>.

Sampling for Nematodes that Feed on Corn Not Advised in the Fall

Abstract

Lately there have been lots of questions asked about sampling fields for plant-parasitic nematodes that feed on corn. This diverse group of microscopic worms includes some species that cause yield loss at very low population densities (numbers), other species that are not harmful until population densities reach many hundreds or more per 100 cm³ (a little less than a half-cup) of soil, and still other species that are not thought to be harmful to corn at all.

Disciplines

Agricultural Science | Agriculture

IOWA STATE UNIVERSITY

Extension and Outreach

Integrated Crop Management

Sampling for Nematodes that Feed on Corn Not Advised in the Fall

October 21, 2017

Lately there have been lots of questions asked about sampling fields for plant-parasitic nematodes that feed on corn. This diverse group of microscopic worms includes some species that cause yield loss at very low population densities (numbers), other species that are not harmful until population densities reach many hundreds or more per 100 cm³ (a little less than a half-cup) of soil, and still other species that are not thought to be harmful to corn at all.

It is common for Iowa fields to have several species of plant-parasitic nematodes present at low numbers. It's only when numbers reach damaging levels that symptoms of injury will appear.

Unfortunately, fields cannot be sampled in the fall to assess the situation. Sampling to check for damaging levels of nematodes needs to be done during the growing season - ideally when symptoms of damage are seen. Following are guidelines on how to collect samples for assessing the potential for damage and yield loss caused by nematodes that feed on corn.

What type of sample should be collected?

Up until V6 growth stage of corn - collect soil and root samples

- Use a soil probe and collect cores that are at least 12 inches long.
- Collect 20 or more soil cores to represent an area.
- Collect soil cores from within the root zone of plants showing symptoms of damage. Combine (but do not mix) the soil cores and place them in a sealed plastic bag labeled with permanent marker.

- Also collect, with a shovel, the root mass from 4 to 6 plants with symptoms of damage (see Figure). Take care not to strip off the smaller, seminal roots. The tops of the plants can be cut off and discarded. Place the roots in a sealed plastic bag labeled with permanent marker.
- Protect the samples from physical jarring and keep the samples cool (room temperature or below).



Figure: Young corn plant collected to test for plant-parasitic nematodes in root tissue.

From V6 through R3 (milk) corn growth stage - collect soil samples

- Use a soil probe and collect cores that are at least 12 inches long.
- Collect 20 or more soil cores to represent an area.
- Collect soil cores from within the root zone of plants showing symptoms of damage. Combine (but do not mix) the soil cores and place them in a sealed plastic bag labeled with permanent marker.
- Protect the samples from physical jarring and keep the samples cool (room temperature or below).

From R4 (dough) corn growth stage to harvest - sampling is not recommended

There is not a reliable relationship between damage or yield loss and the number of nematodes present in soil and roots once the corn crop reaches the R4 growth stage. Therefore, sampling is not recommended after this point in the growing season.

Where to send samples?

Several private laboratories and most land-grant university plant diagnostic laboratories or clinics process samples and determine the identities and numbers of plant-parasitic

nematodes present. A [list of the university laboratories](#) and their contact information can be found online.

At Iowa State University, the facility's location and address are: Plant and Insect Diagnostic Clinic, Room 327 Bessey Hall, 2200 Osborn Drive, Iowa State University, Ames, IA 50011.

The test for nematodes that feed on corn from the ISU Plant and Insect Diagnostic Clinic is called the complete nematode count. Samples sent to the ISU Clinic should be accompanied by a [Nematode Sample Submission Form](#) (ISU Extension Publication "PIDC 32").

Management options if damaging levels of nematodes are found

If damaging population densities of nematodes are found, there is nothing that can be done during the season to manage the nematodes and lessen the yield loss. Management options for future corn crops include use of soil-applied Counter[®] 20G nematicide and/or seed treatments such as Avicta[®], Votivo[®], and NemaStrike[™]. Use of these management options must be decided upon before the corn crop is planted.

Links to this article are strongly encouraged, and this article may be republished without further permission if published as written and if credit is given to the author, Integrated Crop Management News, and Iowa State University Extension and Outreach. If this article is to be used in any other manner, permission from the author is required. This article was originally published on October 21, 2017. The information contained within may not be the most current and accurate depending on when it is accessed.

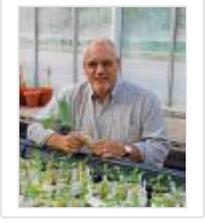
Category: [Plant Diseases](#)

Crop:

[Corn](#)

Tags: [nematodes](#) [sampling for nematodes](#)

Author:

Greg Tylka Professor

Dr. Greg Tylka is a professor in the Department of Plant Pathology and Microbiology at Iowa State University with extension and research responsibilities for management of plant-parasitic nematodes. The focus of Dr. Tylka's research program at Iowa State University is primarily the soybean cyst n...