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## Quick facts About Corn Nematodes

By Greg Tylka, Department of Plant Pathology

Recent changes in corn production practices in the Midwest may be responsible for an increase in crop damage caused by plant-parasitic nematodes. And new products for corn nematode management will be available to growers in the near future. These recent developments have led to increased interest in corn nematodes among growers and those who advise them.

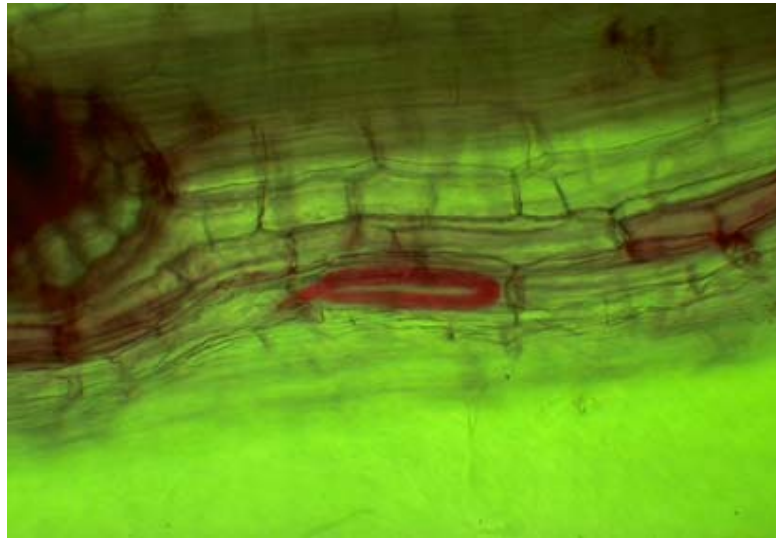
Following are quick facts about plant-parasitic nematodes that feed on corn:

- Nematodes are microscopic worms that live in the soil, but not all soil-dwelling nematodes feed on plants.
- “Corn nematodes” are a group of numerous different species of organisms (see table), just like “corn weeds” or “corn insects.”
- Soils of all textures, not just sandy soils, can have infestations of corn nematodes.
- Some corn nematode species can reduce corn yields by 10 to 20 percent or more.
- The number of corn nematodes thought to cause yield loss vary by species (see table) and range from one worm per half-cup soil (for needle and sting nematodes) to up to 1,000 (for spiral and lesion nematodes).
- Two corn nematode species, the sting nematode and the needle nematode, only occur in soils with greater than 70 percent sand.
- Many species of nematodes that feed on corn also can feed and maintain their numbers on soybeans.
- Many corn nematodes are thought to be native to the Midwest, feeding on prairie grasses before corn was cultivated as a crop.
- Some corn nematodes, called endoparasites, are found only in the roots, not in the soil, during the growing season. (See image below.)
- The population densities (numbers) of corn nematodes may not be at damaging levels when the season begins, but numbers increase throughout the growing season. This is why results obtained from soil samples collected in the spring, before planting, often are not useful.
- Most every field in Iowa has some corn nematodes, but not necessarily at damaging levels.
- Many instances of damage by corn nematodes are small reductions in yield – on the order of 2 to 10 bushels per acre – and such yield loss may be difficult to detect.
- There is a corn cyst nematode that is somewhat akin to the soybean cyst nematode (SCN), which thoroughly infests Iowa and the Midwest. But currently, the corn cyst nematode isn't really a concern or eminent threat to corn production in the Midwest.

**Table 1.**

Common name	Scientific name	Damage threshold
dagger nematode	<i>Xiphinema</i>	30-40 per 100 cm <sup>3</sup> soil
lance nematode	<i>Hoplolaimus</i>	300-400 per 100 cm <sup>3</sup> soil
needle nematode	<i>Longidorus</i>	1 per 100 cm <sup>3</sup> soil
pin nematode	<i>Paratylenchus</i>	???
ring nematode	<i>Criconemella</i>	100 per 100 cm <sup>3</sup> soil
root-lesion nematode	<i>Pratylenchus</i>	1,000 per g root
sheath nematode	<i>Hemicycliophora</i>	???
spiral nematode	<i>Helicotylenchus</i>	500-1,000 per 100 cm <sup>3</sup> soil
sting nematode	<i>Belonolaimus</i>	1 per 100 cm <sup>3</sup> soil
stubby-root nematode	<i>Paratrichodorus</i>	???
stunt nematode	<i>Tylenchorhynchus</i>	100 per 100 cm <sup>3</sup> soil

**Names of nematode species that feed on corn and population densities thought to cause damage to corn (damage thresholds).**



**Endoparasitic nematodes (stained red) inside root tissue.**

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