

Field Facts: Nematodes

There are more than a million species of nematodes, and while crop-damaging plant-parasitic nematodes are a relatively small part of the soil nematode population, they can be very problematic for farmers' fields.



Common Name Scientific Name	Symptoms and Conditions for Development
Root-Knot Nematode <i>Meloidogyne spp</i>	<ul style="list-style-type: none"> • Multiple crop hosts, including corn and soybeans • Endoparasitic, spending the majority of life inside roots • Form small galls or knots on roots
Soybean Cyst Nematode <i>Heterodera glycines</i>	<ul style="list-style-type: none"> • The most problematic soybean nematode pest – soybean fields can suffer more than 50% yield loss – but not considered a threat to corn yield • Infests root vascular tissue to produce below-ground cysts
Root-Lesion Nematode <i>Pratylenchus spp.</i>	<ul style="list-style-type: none"> • Multiple crop hosts, including corn and soybean • Make roots prone to fungal and oomycete infection • Causes pruned roots and necrotic roots below ground, stunted and discolored plants above ground
Stubby-Root Nematode <i>Trichodoridae</i>	<ul style="list-style-type: none"> • Prefers corn roots but will feed on soybean and other crops • Causes shortened roots from feeding on growing root tips • Damage can resemble herbicide burn, such as yellowing and stunting
Needle Nematode <i>Longidoridae</i>	<ul style="list-style-type: none"> • Considered a devastating pest in the Midwest • Prefers corn roots but will feed on other grassy crops • Causes shortened and pruning of finer roots • Migrates deeper into soil as temperatures rise
Dagger Nematode <i>Xiphinema spp.</i>	<ul style="list-style-type: none"> • Multiple crop hosts, including corn and soybean • Some species live for 4-5 years • Feeding leads to root damage, stunting and chlorosis

FAST FACTS

- There are more than one million species of nematodes. Some (such as root-lesion nematodes) feed on a variety of plant species, reducing the benefits of crop rotation on nematode infestation. Others (such as soybean cyst nematodes) have limited hosts.
- Nematodes are a critical threat to corn and soybeans. They are nearly invisible and cause damage that can be difficult to spot until it's too late.
- Nematodes fall into one of three feeding patterns that cause damage to crops:
 - Ectoparasites feed from outside of the plant and move along the root system to find new food material.
 - Endoparasites fully penetrate the root and feed within the root.
 - Semi-endoparasites feed on the outside and inside portions of the plant root, causing below-ground damage.

CONTROL TIPS

Nematodes can be managed through a combination of approaches.

- 1. Cultural practices:** Crop rotation with non-host crops.
- 2. Genetics:** Plant a soybean variety with a nematode-resistant gene and/or one that is rated for nematode field tolerance.
- 3. Seed treatments:** Choose an option with strong protection against nematodes, like Lumialza® nematocide seed treatment or ILEVO® seed treatment.



Roots from corn plants infested with root lesion nematode (*Pratylenchus brachyurus*) 42 days after emergence.



Untreated Lumialza nematocide seed treatment

Lumialza nematocide seed treatment increases above-ground plant vigor, height and biomass when nematodes are present.

Lumialza®

NEMATOCIDE SEED TREATMENT

A **biological nematocide** that protects crops by creating a **living bio-barrier** around the plant's roots to keep nematodes away for **more than 80 days**.

Has been shown to **improve yield by up to 9 bu/A in high-pressure environments**. Even in low-pressure settings, it can be a smart addition to seed, boosting yield by 3.7 bu/A.*

Has a **favorable environmental profile** if applied according to label recommendations. It is safe and compatible with naturally occurring soil microorganisms and is effective on target nematode species at low use rates.

*Data is based on 10-state, broad-acre, head-to-head, strip trial comparing Lumialza nematocide seed treatment vs. non-nematocide seed treatment utilizing the same insecticide and fungicide recipe in seed-applied technology replicated and strip trial data. Yield improvements ranged from 3 to 9 bu/A depending on nematode species and population, in 184 low-stress and 54 moderate- to high-stress locations.

ILEVO®

Seed Treatment

Has been shown to be **highly effective against both soybean cyst nematode (SCN) and sudden death syndrome (SDS)**, both of which threaten soybean yields.

At hatching, ILEVO seed treatment **reduces nematodes by 96%** and it continues to work across the nematode life cycle.

Has been **tested in combination with the Corteva soybean seed protection blends C-1019FI and C-1020FI**. It makes an excellent partner to those treatments for farmers who are facing SCN pressure in addition to fungal and insect threats.

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