LOUISIANA HOME LAWN SERIES

A guide to maintaining a healthy Louisiana lawn

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Nematodes

Description

Nematodes are microscopic wormlike animals that live in soil, roots and water. Though most nematodes are beneficial, some species can injure plants.

Nematode species that are known to infest turfgrass in Louisiana:

- Sting nematodes (*Belonolaimus spp.*) feed outside of the root, are thought to inject a toxin into the root and are mainly found in very sandy soils.
- Stubby-root nematodes (*Paratrichodorus spp.*) feed on the outside of the root at the root tip. This reduces root growth in sandy soils.
- Lance nematodes (*Hoplolaimus spp.*) feed on cortical and epidermal cells of the root and may move inside the roots of turfgrass.
- Ring nematodes (*Criconemella spp.*) feed on the outside of roots and are known to infest several turfgrass species.
- Root-knot nematodes (*Meloidogyne spp.*) produce knots or galls on roots. On turf, galls are usually small and can be difficult to distinguish.
- Spiral nematodes (*Helicotylenchus spp.*) usually cause injury to turfgrass when the turfgrass is under stress.

Identification

It is difficult to identify nematode injury in turfgrass because nematodes feed underground. However, symptoms such as turfgrass spotting can be observed above ground. The adjacent table specifies which nematode species are commonly found in bermudagrass, centipedegrass, St. Augustinegrass and zoysia turfgrasses. Spiral nematodes are commonly found in all turfgrasses but seldom cause injury if the turfgrass is well maintained.

Turfgrass Species	Nematode Species
Bermudagrass	Lance, ring and root-knot
Centipedegrass	Sting, stubby, lance and ring
St. Augustinegrass	Stubby, lance and ring
Zoysia	Stubby, lance and ring

Swollen root tips from root-knot nematodes.

Spotty nematode injury in turfgrass.

Indicators of Nematode Presence

Injury can be observed any time of the year, but nematode populations and injury will fluctuate during the winter months and the growing season and in varying environmental conditions. During severe periods of stress that can weaken the turfgrass, nematode injury will be more severe. Injury is greatest when large numbers of nematodes survive the winter and early spring, which results in root injury early in the year. Symptoms of injury tend to show up in the same locations each year as:

- Necrotic, stunted or discolored roots.
- Areas of turfgrass injury that tend to increase in size over time.
- Slowed turfgrass growth, even after irrigation and fertilization are applied.
- Thinned turfgrass stand, often appearing discolored and weak.

Cultural Control Practices

One way to reduce nematode injury and accelerate turfgrass recovery is to maintain a healthy lawn through proper fertilization and irrigation and regular mowing. Never apply more than 1 pound of nitrogen per 1,000 square feet per application, and always follow soil test recommendations for proper fertility.

Irrigate infrequently and deeply while taking rainfall into account. Mow regularly, but never remove more than one-third of the leaf blade height at one mowing. Under stressful environments or during recovery from nematode injury, consider raising the mowing height. If thatch becomes excessive, dethatching may be necessary to improve conditions. Other practices, such as breaking up hardpans and soil aeration, can reduce turfgrass stress. Manage insects, weeds and plant pathogens before they cause extensive injury. Properly maintaining a lawn through these cultural practices promotes a dense and vigorous turfgrass and can increase tolerance to insect injury.

Chemical Control Practices

In addition to cultural practices, nematicide applications may be required to achieve effective nematode control. See the table below for a list of the active ingredients and product trade names labeled for use in home lawns. When using any nematicide, you must follow the manufacturer's labeled directions. For more information regarding insecticides for turfgrass insect pests, please reference the Louisiana Insect Pest Management Guide at the LSU AgCenter website, www.lsuagcenter.com.

Nematicide Active Ingredients
Bacillus firmus (Nortica)
fluensulfone (Nimitz Pro G)
fluopyram (Idemnify)

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