

TURFGRASS TRENDS

Volume 10, Issue 12 • December 2001

DISEASE CONTROL

Root-knot nematodes on turf in the northeastern United States

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For many years, nematodes were not considered to cause significant disease on golf courses, particularly in the Northeast. While there are many reasons for this, management techniques, the subtle nature of most nematode damage (especially in northern climates) and the difficulty in researching nematode problems on a perennial host claim most of the responsibility for this gap in understanding (Nelson, 1995).

It is now known that nematodes can cause significant damage on many turf grasses. However, the diagnosis of nematode symptoms is still difficult and control of these plant pathogens can be time consuming, expensive and inconvenient.

While there are many species of nematodes that attack grasses, I have a particular interest in *Meloidogyne graminis*, a root-knot nematode. While seen infrequently in the past, it seems to be increasing in its incidence, an observation based on turf samples submitted to the University of Rhode Island Turf Diagnostic Lab and the Plant Disease Clinic at the University of Massachusetts.

ABSTRACT

Root-knot nematodes (*Meloidogyne graminis*) are gradually becoming more prevalent on golf courses throughout New England. These nematodes can be particularly damaging to turf, as a result of their intimate relationship with plant hosts. Symptomology is general in nature and difficult to diagnose. Typically, these and other nematodes are considered stress related diseases. Only through soil sampling and extractions can identification be made conclusively. Many grass species have been reported as being susceptible and no genetic resistance effective against *Meloidogyne graminis* has been identified. Control of these organisms can be a perennial problem and Nemacur is the only chemical registered for use on golf courses with nematode problems. Timing of application is also critical for efficacy against root-knot nematodes.

Unlike fungi, many nematode populations develop relatively slowly and damage may only be observed during periods of high stress. In Rhode Island, levels of *Meloidogyne graminis* are still relatively low and this particular nematode is only found sporadically. However, these unique organisms can be difficult to manage when encountered and can develop very high populations in turf. For these reasons, it is worth examining the management and control of these organisms.

Biology

Root-knot nematodes (*Meloidogyne* spp.) are distributed widely throughout the United States and can cause significant damage on a wide variety

IN THIS ISSUE

■ Root-knot nematodes on turf in the northeastern United States.....1

Biology

Distribution

Damage and symptoms

Control

Hopes for the future

■ Mechanical maintenance of bowling greens.....5

Late winter/early spring

Spring

The bowling season

Autumn renovation

Autumn/winter

■ Do "low drift" nozzles work — an update.....10

How about pest control?

Results from recent studies

■ From the editor.....15

I should know better...