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Suppressing Sting Nematodes Using Botanical Extracts

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Objective

Investigate whether sting nematode can be controlled by applications of selected plant extracts to soil and whether irrigation would enhance the effectiveness of control.

Summary

Golf courses often provide an ideal environment for elevated populations of sting nematode: sandy soil, warm temperatures, ample soil moisture and susceptible turfgrass cultivars. Under these conditions, sting nematode can cause loss of turfgrass which reduces playing quality and possibly revenue. In anticipation of the restricted availability of commercial products for nematode control, botanical extracts may provide a way to suppress sting nematodes.

In laboratory experiments, known populations of sting nematodes were exposed to shoot or root extracts from spotted spurge, poinsettia, lantana, tall lettuce, and golden rod plus a seed meal extract from wild mustard. Following application of the extracts, selected pots were irrigated to ensure proper infiltration and distribution of the extract.



Results

- Plant extracts from members of the Euphorbiaceae and seed meal extract from wild mustard families can be a potential alternative for nematode suppression if the environment in which they are applied will sustain the compounds.
- Plants producing isothiocyanate compounds (seed meal extract from wild mustard) appear more likely to reduce a plant parasitic nematode population in a naturally infested soil than the members of the Euphorbiaceae family selected for investigation in this study.
- Irrigation appears important in distributing the nematicidal extract and in protecting plants from severe shoot and root phytotoxicity.



Funded by



Published in GCM, September 2007, pages 94-97.