Biology and Potential Hosts of a Novel Root-Knot Nematode in Southern California Turf

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Plant parasitic nematodes are tiny roundworms that typically live in soil or in plant tissues. They feed on living plant cells and cause plant diseases that are often difficult to identify or mistaken for other biotic or abiotic causes. Major problems with plant parasitic nematodes in California turf grasses typically have been confined to relatively few golf courses in the Bay area and in the Coachella Valley with either the stem gall nematode, *Anguina pacificae* or the Sting nematode, *Belonolaimus longicaudatus*, respectively. The recent discovery of high population densities of root-knot nematodes (*Meloidogyne* spp.) and their devastating symptoms in bentgrass putting greens of two Coachella Valley golf courses have raised new concerns for golf course managers.

We are currently investigating the identity of the root-knot nematode species with morphological keys and molecular tools. While it is certainly not one of the widely distributed root-knot nematode species that occur in agronomic fields of this region, identification has proven so far quite difficult. Consequently we are uncertain if it is a new species, a recent strain introduction with limited distribution, or an established pathogen flourishing under particularly disease-conducive conditions. If it is a new species or an exotic species, this may trigger regulatory actions.

Of particular interest is the host range of this root-knot nematode as selection of appropriate resistant or tolerant turfgrass varieties may provide an opportunity to mitigate the problem. Cool-season grasses, such as bentgrass, are more prone to show root-knot nematode disease symptoms than warm season grasses when parasitism of the roots adds another burden to the overall stress caused by the extreme environmental conditions in California's inland deserts. Additionally, microorganisms that take advantage of a root-knot nematode-diseased root system might further enhance root disease and decay.