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Home > Plant Disease > Table of Contents > Full Text HTML
Previous Article | Next Article

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DISEASE NOTES

First Report of *Meloidogyne partityla* Infecting Water Oak (*Quercus nigra*) in Florida

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ABSTRACT

In 2009 and 2014, roots presumably infected with root-knot nematodes (*Meloidogyne* spp.) were collected from water oak (*Quercus nigra*), Alachua County, FL, and sent to the Nematode Diagnostic Laboratory, Division of Plant Industry, Florida Department of Agriculture and Consumer Services, Gainesville, FL. Small galls were observed on secondary and tertiary roots, large galls were found only on secondary roots. Females were found inside of the galls and egg masses were outside. Nematode species were identified using both morphological and molecular analyses. A notably thickened region between the stylet cone and stylet shaft in males ($n = 10$) and swollen rectums with deep longitudinal grooves were present in second-stage juveniles ($n = 20$): two defining morphological characteristics reported in the original description of *Meloidogyne partityla* (Kleynhans 1986). Perineal patterns of females and body length and width, stylet, and tail length of second stage juveniles ($n = 20$) were consistent with that previously reported for *M. partityla*. At least 10 single females were extracted from roots and molecular identification was performed using isozyme and DNA analyses. Isozyme phenotypes (EST = Mp3; MDH = N1a) were identical to earlier reports of this species (Brito et al. 2008). An amplicon of 530 bp was produced with mtDNA primers C2F3 (5'-GGTCAATGTTTCAGAAATTTGTGG-3') and 1108 (5'-TACCTTTGACCAATCAGCT-3') (Powers and Harris 1993), which coincided to previously published data for *M. partityla* (Powers et al. 2005). Based on the result attained with the mtDNA primers, two regions were subsequently chosen to sequence to confirm species identification. First, a region in the ribosomal ITS was amplified with ITS-1 F (5'-CGCAGTGGCTTGAACCGG-3') and a species-specific primer, MpSpec (5'-TGAACCTTTATTGGTGAAAG-3') (Stamler 2009). This primer set produced a fragment of 630 bp, identical to *M. partityla* found infecting pecan in Arizona, Florida, Georgia, New Mexico, Oklahoma, and Texas (GenBank Accession No. KR047556) (Stamler 2009; Brito 2008). Secondly, the 18S region was amplified and sequenced (KT825143) using primers 18Ss1.2 (5'-GGCGATCAGATACCGCCCTAGTT-3') and 18SR2B (5'-TACAAAGGGCAGGGACGTAAT-3') (Baldwin et al. 1997). A GenBank BLAST search produced a 99% match to an isolate of *M. partityla* from New Mexico (AY757874.1). This finding strengthens the hypothesis that this nematode species can survive in the wild on hosts

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First Report of *Meloidogyne partityla* Infecting Water Oak (*Quercus nigra*) in Florida — Plant Disease
outside of Juglandaceae. This is of particular importance when establishing both new pecan
nurseries and orchards. To our knowledge, this is the first report of *M. partityla* occurring
on *Q. nigra*.

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