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# Identification of Root-knot Nematode Species Infecting Banana and Grape Orchards in Ismailia Governorate, Egypt

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**Abstract**

Samples of banana and grape roots infected with root-knot nematode, Meloidogyne spp. were collected from three different regions viz. Abou-Khalifa, Abou-Swair regions and Faculty of Agriculture Experimental Farm; representing Ismailia governorate, Egypt; and extracted females were used to identify detected root-knot nematode populations by using perineal patterns and SCAR-PCR techniques. Examination of the perineal patterns of the root-knot nematode females revealed the presence of three different species of *Meloidogyne*. Four root-knot nematode populations were identified as *M. incognita* from banana roots in Abou-Khalifa region, from grape roots in Abou-Swair region and from banana and grape roots in Faculty of Agriculture Experimental Farm. One root-knot nematode population was identified as *M. arenaria* from grape roots in Abou-Khalifa region. While, one root-knot nematode population was identified as *M. javanica* from grape roots in Abou-Swair region. On the other hand, using Sequence Characterized Amplified Region (SCAR) based PCR assays and DNA Gel Documentation System (D.G.D.S) programme analysis to identify the detected root-knot nematode populations showed the same previous results and easily differentiates the species *M. incognita*, *M. arenaria* and *M. javanica*. A 1200 bp fragments were detected by four root-knot nematode populations from banana roots in Abou-Khalifa region, grape roots in Abou-Swair region and from banana and grape roots in Faculty of Agriculture Experimental Farm. These populations were identified as *M. incognita*. While, a 420 bp fragment was detected by one root-knot nematode population and identified as *M. arenaria* from grape roots in Abou-Khalifa region. In addition to, a 670 bp fragment was detected by one root-knot nematode population and identified as *M. javanica* from grape roots in Abou-Swair region.

**Keywords:** *Meloidogyne* spp, root-knot nematode

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