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Research Note

First report of *Mesocriconema xenoplax* (Nematoda: Criconematidae) in Greece and first record of *Viburnum* sp. as a possible host for this ring nematode

E. KARANASTASI[1], Z. A. HANDOO[2], E. A. TZORTZAKAKIS[3]

[1]Nematology Laboratory, Department of Entomology & Plant Zoology, Benaki Phytopathological Institute, St. Delta 8, 14561, Kifissia, Greece, Email: *E.Karanastasi@bpi.gr*; [2]Nematology Laboratory, USDA, ARS, BARC-West, Bldg. 011A, Rm. 159, Beltsville, MD 20705, USA; [3]Nematology Laboratory, Plant Protection Institute, N.AG.RE.F., PO BOX 2228, Heraklion, Crete, Greece

Summary

In 2005, root and soil samples were collected from the rhizosphere of *Viburnum* sp. plants in the yard of a house in Kifissia, Attica, Greece. The plants showed symptoms of yellowing and declining and all were dead within, approximately, one year. The roots were infected with the fungus *Rosellinia necatrix*. Several specimens of a ring nematode were recovered from soil and identified as *Mesocriconema xenoplax* based on morphological and morphometrical analysis of females. The nematode had been previously found on grapevines in Samos and Crete islands. This is the first report of *M. xenoplax* in Greece and the first record of *Viburnum* sp. as a host for this ring nematode. Additional information regarding distribution of this nematode in Greece is needed.

Keywords: Greece, morphometrics, ring nematode, *Rosellinia necatrix*, *Viburnum*, grapevine.

The plant parasitic nematode *Mesocriconema xenoplax* [=*Criconemoides xenoplax* (Raski, 1952) Loof & De Grisse 1989] has a world-wide distribution and a wide host range, comprising grapevine, all *Prunus* species, walnut, lettuce, carnation, pine and grasses (http://plpnemweb.ucdavis.edu/Nemaplex/Taxadata/G150S1.htm). Till now, it has not been recorded from any ornamental shrubs or bushes.

Despite its wide spread, there is no published information on the presence of the species in Greece. In fact, the whole family Criconematidae has only rarely been detected in former surveys: *C. informis*, *C. morgens* and *Criconemoides* sp. (Koliopanos & Kalyviotis-Gazelas, 1969; Kalyviotis-Gazelas, 1971; Kyrou, 1972; Koliopanos & Kalyviotis-Gazelas, 1973; Koliopanos & Vovlas, 1977; Koliopanos & Kalyviotis-Gazelas, 1979).

In 2005, a few *Viburnum* sp. diseased plants were found at the yard of a house located in Kifissia Attica, Greece (38^{o} 09' 15''North, 23^{o} 46' 97'' East). The plants showed symptoms of yellowing and subsequent declining and within, approximately, one year, these plants died. In order to identify the problem and protect the other plants, root and soil samples were collected from the rhizosphere and examined. The roots were infected with the fungus *Rosellinia necatrix*.

The nematodes were extracted from soil following the sieving and decanting technique with overnight recovery in water-filled Baermann funnels (Brown & Boag, 1988). After 24 h, the nematodes were collected and identified to genus level. Besides a high population of an unidentified species of the family Criconematidae, few specimens of the genera *Tylenchorhynchus* and *Helicotylenchus* were also recovered. Fifteen females were individually hand-picked, heat-killed in a water bath at 60 ^{o}C, fixed with cold fixative (1 % formalin, 1 % glycerol) and mounted on glass slides for species identification (Karanastasi et al., 2000)

The morphology (Fig. 1) and measurements of 15 females were consistent with the description of *M. xenoplax* (Raski, 1952) Loof & De Grisse 1989: **L** = 0.59 mm (0. 56 – 0.67); **a** = 13.2 (12 – 15); **b** = 4.2 (4.0 – 4.3); **c** = 21.0 (19.0 – 23.4); **V** = 92 (91 – 93%); **stylet** = 81.0 (77.5 – 85.0); **total body annules** = 109 (104 – 116); **excretory pore** on 27 – 29th annule from anterior end; **vulva** located on 8 – 9th annule from end of body, generally on 7 – 8th annule; **anus** located at 6 – 7th annule from end of body.

Mesocriconema xenoplax (Fig. 2) has been formerly identified from grapevine on the islands of Samos and Crete. In 1995, the species was identified from a population from Samos sent to Dr N. Vovlas, C.N.R., Bari, Italy, but was not reported at that time. Another population was found in Samos in an adjacent vineyard and morphometrics were recorded in three females. Two years

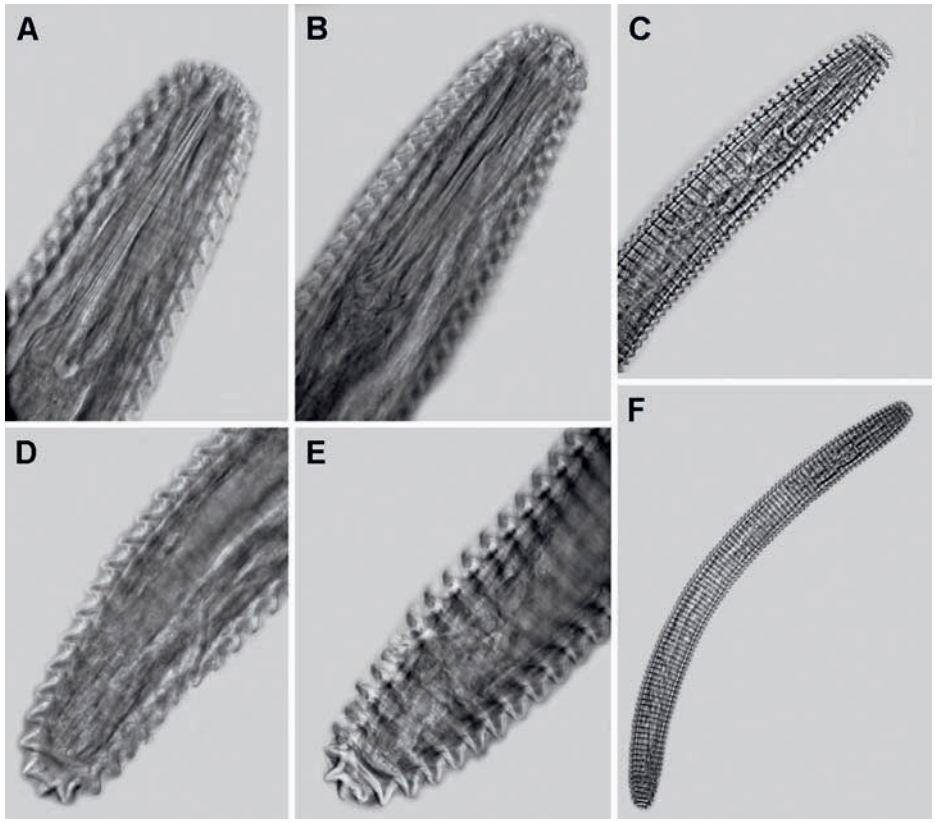

Fig. 1. *Mesocriconema xenoplax* female. A, B, C - Anterior end. D, E - Tail.

later, a few specimens were recorded from grapevine in Crete and three females were also examined. The range of morphometrics of the six females from both populations were within these presented in the description of Orton Williams (1972): **L** = 0.54 – 0.63mm; **a** = 11.3 – 12; **b** = 3.9 – 4.2; **c** = 17 – 19; **V** = 91 – 93 %; **stylet** = 76 – 78; **total body annules** = 106 – 109; **excretory pore** on 26 – 29th annule from anterior end; **vulva** located on 8 – 9th annule from end of body; **anus** located at 6 – 7th annule from end of body. These reports and data on morphometrics, are based on limited number of females and are published here for the first time.

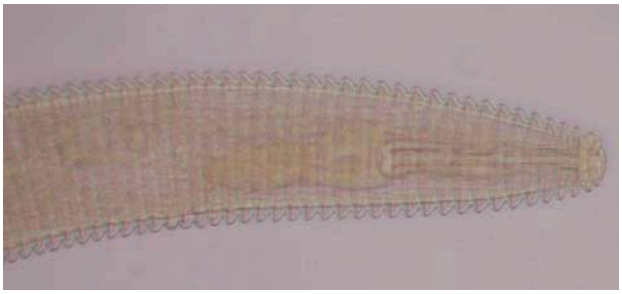

Fig. 2. Anterior end of a *Mesocriconema xenoplax* female from Samos, Greece.

Considering the high number of soil samples from all parts of Greece examined daily at the Benaki Phytopathological Institute for the presence of plant parasitic nematodes, *M. xenoplax* is currently considered as a rare species in Greece. Furthermore, surveys in vineyards of Samos and Crete indicated that the nematode had a restricted presence in certain soils. More importantly, this is the first record of the ring nematode *M. xenoplax* inhabiting the roots of *Viburnum* sp. plants. Furthermore, the nematode population was moderately high and the cause of plant death may be due not only to the ring nematode but also to the fungus *R. necatrix*.

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