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Morphological and molecular study of *Cryptaphelenchus* sp. (Nematoda, Ektaphelenchinae) associated with dead and dying pine trees in Iran

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Statement of the Problem: Currently several pests, mostly species of bark beetles are known that are responsible for pine trees decline in parks of city of Tehran. During our extensive samplings, the pine nematode, Bursaphelenchus xylophilus was not recovered in Iran, and the only recovered species of the genus Bursaphelenchus till date, is B. mazandaranense, recovered from natural forests of northern Iran. Following or continued samplings from not surveyed parks, an aphelenchid nematode population with small body size was recovered from bark and wood samples of dead Pinus spp., having galleries of bark beetles in city of Tehran. Detailed studies revealed it belongs to the genus *Cryptaphelenchus*, and represents and unknown species.

Methodology & Theoretical Orientation: Nematodes were extracted, and permanent slides were made according to common methods. For molecular studies, two genomic regions were sequenced and molecular phylogenetic studies were performed. Findings: Detailed morphological studies revealed the recovered population belongs to an unknown species. The new species is morphologically compared with the species of the genus having short postvulval uterine sac (PUS) and similar body end morphology. In molecular phylogenetic analyses using partial sequences of SSU and LSU rDNA D2/D3 fragments, the new species formed a clade with two and three isolates in SSU and LSU trees, respectively.

Conclusion & Significance: The morphological differences of the recovered population and currently known species of the genus, confirmed it belong to a new species of the genus. However, their impact on pine pests' biology, or the type of their relation is still unknown. Currently available data and our new observations confirm the genus *Cryptaphelenchus* has a mycetophagous feeding habit, and thus, the relation of the bark beetles, ektaphelenchid nematodes and tentative plant pathogenic fungi and their impact on pine trees health needs further detailed studies.

Biography

Majid Pedram is an assistant professor on Plant Nematology (taxonomy) in Tarbiat Modares University, Iran; and has his expertise in molecular taxonomy of plant parasites/associated nematodes. His studies on occurring of plant parasitic nematodes have yielded in increasing of our knowledge on occurring of plant parasitic nematode species in agricultural and natural regions of Iran, especially economically important forests in northern regions of the country. Most of his recovered new species of plant parasitic nematodes are published in several specialized Plant Pathology or Nematology or Zoology journals.

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