

## **Integrative diagnosis of root-lesion nematodes of the genus *Pratylenchus***

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Root-lesion nematodes of the genus *Pratylenchus* are migratory endoparasites that are distributed worldwide and are regarded as severe constraints of many crops. Proper identification of these nematodes (> 70 species) is critical for their management and phytosanitary purposes. The morphological separation of *Pratylenchus* species is complicated due to their high morphological plasticity, the small number of the differential characters available and high intraspecific variability of some of these characters. During the last decades, new approaches based on biochemical, molecular and phylogenetic analyses have provided powerful tools to nematode systematics and reliable identification of *Pratylenchus* spp. In particular the ITS, 18S and 28S ribosomal regions have been largely used to discriminate among different populations and species of *Pratylenchus*. The need for applying a polyphasic approach to characterize *Pratylenchus* species, and, in addition, to demonstrate the existence of cryptic or complex species, which are morphologically indistinguishable but genetically divergent, has been shown in recent morphological and molecular studies of members of this genus. The findings of these studies, conducted in the last decade, have produced a great number of new sequences and taxa used for testing hypotheses of phylogenetic relationships within *Pratylenchus* and have emphasized the importance of polyphasic taxonomy as a better strategy to delimit species and to infer phylogenetic relationships in this complex group of nematodes.

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