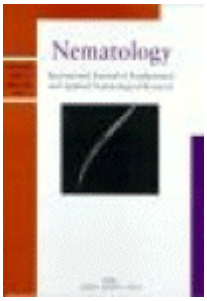
Molecular and morphological characterisation of *Sphaeronema alni* Turkina & Chizhov, 1986 (Nematoda: Sphaeronematidae) from Spain compared with a topotype population from Russia



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Abstract:

The occurrence of a male-less population of *Sphaeronema alni* parasitising chestnut (*Castanea sativa*) roots and inducing a stelar syncytium is reported for the first time in Pola de Somiedo (Oviedo province), Spain. Morphometric and molecular characters of the Spanish population matched those of a topotype population from Russia. SEM observations showed swollen females having the first lip annulus wider than the second and appearing as a cap-like, circumoral elevation. The second-stage juveniles, having a single band in the lateral fields, were characterised by a non-annulated dome-shaped lip region derived from the fusion of the oral disc with all the lip sectors and lip annuli, and showing slit-like amphidial apertures and an oval prestoma. The sequences of the D2-D3 expansion segments of 28S rRNA, partial 18S rRNA and ITS rRNA gene for the Spanish and topotype populations of *S. alni* were congruent and matched those deposited in GenBank for another population from Germany, thereby confirming their conspecificity. A PCR-RFLP profile of D2-D3 of 28S rRNA for identification of this species was also provided. The phylogenetic relationships between *S. alni* populations and representatives of the suborder Criconematina, as inferred from analysis of partial

18S rRNA and D2-D3 of 28S gene sequences obtained in this and previous studies, indicated that *S. alni* formed a basal clade on the majority consensus Bayesian phylogenetic trees, standing together with *Meloidoderita* sp. or alone. These findings provide additional evidence of the need to clarify the position of *Sphaeronema* within Criconematina and its relationships with representatives of Tylenchulinae.

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