

Phylogenetic relationships among *Trichodorus* and *Paratrichodorus* species

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ABSTRACT

Trichodorid nematodes of the genera *Trichodorus* and *Paratrichodorus* are known natural vectors of *Tobacco Rattle Virus* (TRV) to many agronomically important crops. Previous taxonomic studies have reported several trichodorids, including virus-vector species, from Portugal. The trichodorid group is well defined taxonomically but little is known regarding the molecular phylogenetic relationships of species belonging to these two genera. The aim of this study is therefore to determine the phylogenetic relationships among many of the trichodorid species occurring in continental Portugal and six non-indigenous trichodorid species, based on 18S rDNA gene sequences. A comprehensive survey for trichodorids was carried out in Portugal and ten species (five *Trichodorus* and five *Paratrichodorus*) were identified using classical taxonomy. Representative specimens from each species were selected for molecular studies. DNA was extracted from individual nematodes, a minimum of two per population, and using appropriate primer sets the 18S rDNA gene was isolated and subsequently sequenced. The 18S rDNA gene from six non-indigenous trichodorid species was also sequenced. A multiple sequence alignment was produced and used as a basis of a Maximum Likelihood phylogenetic analysis. With one exception, the resultant phylogenetic tree clearly separated both genera and species into groups that agree with currently accepted taxonomy of the Trichodoridae. However, populations of *P. minor* appeared more closely associated with *Trichodorus* species than other *Paratrichodorus* species.

ROME, ITALY, 14-18 June 2004

Proceedings

(<http://www.esn-symposium.ba.cnr.it>)

ABSTRACT poster (pp.107-108)