

# INTEGRATIVE TAXONOMIC STUDY OF THE VIRUS VECTOR FAMILY TRICHODORIDAE FROM THE IBERIAN PENINSULA, AN APPARENT CENTRE OF SPECIATION

W. Decraemer<sup>1</sup>, J.E. Palomares-Rius<sup>2</sup>, C. Cantalapiedra<sup>2</sup>, B.B. Landa<sup>2</sup>, I.  
Duarte<sup>3</sup>, T. Almeida<sup>4</sup>, N. Vovlas<sup>5</sup> and P. Castillo<sup>2</sup>

<sup>1</sup>Royal Belgian Institute of Natural Sciences, B1000 Brussels, Belgium

<sup>2</sup>Institute of Sustainable Agriculture, CSIC, 14080 Cordoba, Spain

<sup>3</sup>Escola Superior Agrária de Coimbra, 3040-316 Coimbra, Portugal

<sup>4</sup>Universidade do Minho, 4710-057 Braga, Portugal

<sup>5</sup>Istituto per la Protezione delle Piante, Sede di Bari, CNR, 70126 Bari, Italy

Trichodoridae are polyphagous root ectoparasites occurring worldwide. Their major pest status is as virus vector of Tobraviruses. Currently, the family has 102 species classified within 6 genera. 88% of the species belong to the didelphic genera (females with two well developed genital branches) with the genus *Trichodorus* being the largest in number of species (56). *Trichodorus* species predominantly occur in temperate regions. Surveys for trichodorids were carried out in cultivated and natural habitats in Spain and compared with the trichodorid fauna from Portugal. A comparative morphological study was carried out together with molecular analyses based on nuclear ribosomal RNA genes (D2-D3 expansion segments of 28S and partial 18S gene). Characteristic for the Iberian Peninsula is the high number of morphologically closely resembling species but clearly separated molecularly (cryptic species), characterized in males by slightly ventrally curved spicules with a mid-blade constriction with bristles and females with relatively large vaginal sclerotized pieces, quadrangular to triangular in shape. Molecular analyses demonstrated that D2-D3 expansion segments are suitable diagnostic markers for Trichodoridae. Comparative morphology and molecular analyses provide support for the Iberian Peninsula as an apparent centre of speciation. South Africa is another known centre of speciation of *Trichodorus*.