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Nematodes from terrestrial, freshwater and brackish water habitats in Belgium: an updated list with special emphasis on compost nematodes

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Abstract

A study of nematodes from a semi-artificial and controlled composting process in Eastern Flanders revealed 35 taxa, 21 of which were new records for Belgium. An updated checklist of free-living, plant-parasitic and entomopathogenic nematodes from terrestrial, freshwater and brackish water habitats in Belgium is presented. The Belgian non-marine nematofauna comprises 418 taxa, representing 4 subclasses, 14 orders, and 76 families. In total 127 new records were added: i.e. 21 from the newly explored compost habitat, 7 from freshwater samples and 99 from published data in literature.

Key words: Nematoda, nematofauna, terrestrial, freshwater, brackish water

Introduction

The Belgian nematofauna has been relatively well studied. Coomans (1989) reviewed the nematofauna of Belgium, excluding the animal-parasitic nematodes. However, this list was published in a, to modern standards, relatively poorly accessible national publication. More recently, Bert *et al.* (2003) published an updated checklist of the Tylenchomorpha from Belgium, with the addition of 42 species, based on new data together with data from Bert & Geraert (2000) and Coosemans (2002). However, for the free-living Belgian nematodes, the list of Coomans (1989) was never updated or revised to reflect recent taxonomic changes.

Here, we present a taxonomically updated checklist of free-living, plant-parasitic and entomopathogenic nematodes from Belgium, including records from literature and new records from compost and freshwater habitats. This resulted in a list of 418 species, 127 of which are new compared to the lists of Coomans (1989) and Bert *et al.* (2003). 21 records from compost are new to the Belgian fauna.

Materials and methods

The species list has mainly been compiled based on compost samples, on a limited number of freshwater samples and on literature data. For compost, nine composting processes were sampled at different time points; these include five processes according to the Controlled Microbial Composting method (= farm composting), three small-scale processes in barrels, and one industrial green waste composting process. Seven additional samples of mature composts were analyzed from one green waste process and six farm composting processes. For more detailed information on the sampling and processing methods of the samples, see Steel *et al.* (2010) and Steel *et al.* (2012). The new records of freshwater nematodes included here are the result of ca. thirty randomly taken samples from freshwater habitats (ponds, lakes, cannals, etc.), collected using a square-like jar (5 x 5 x 13 cm) connected to a long stick in the framework of a project to collect species specific SSU rDNA sequences of freshwater nematodes. The list presented here includes information on habitat: T= terrestrial, C= compost, Fw= freshwater, Bw= brackish water and Bs= brackish soil. However, this information is not exhaustive and does not exclude presence in other

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