



Conference Abstract

# Nematode diversity in four crop types (pea, apple, lavender and rose) in southern Bulgaria

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## Abstract

Nematodes represent one of the largest phyla in the animal kingdom and are a key component of the soil microfauna (organisms with body width <0.2 mm). Being a widespread and diverse group, they display a wide range of adaptations and lifestyle traits. Their functional role in soil food-webs is mostly related to their feeding type. The majority of terrestrial nematodes feed on plant roots, bacteria and fungi, while a small group of plant associated species spend part or their whole life cycle in roots. Some plant-feeding species are known as important pests that can parasitize various crops causing adverse effects on yield and production quality. Their effective management requires accurate detection and identification. In the frame of the National Research Program "Healthy Foods for a Strong Bio-Economy and Quality of Life", selected groups of soil nematodes are used as bioindicators for assessing soil and plant health, and ecosystem services in several agricultural ecosystems. Nematode communities from four crop types (pea, apple, lavender and rose) in southern Bulgaria managed by conventional and organic farming were sampled and investigated. Here we present some preliminary results on pea, lavender and rose associated nematode diversity. Multiple core samples from 18 sampling plots were collected in June 2019. Nematodes were isolated from 200 g of soil by decanting and sieving method, fixed, dehydrated and mounted on permanent slides. Overall, over 60 genera belonging to five trophic groups were identified. Approximately half of the nematode genera found are obligatory plant- and plant/fungus feeders. Parasitic nematodes were represented by 12 genera, some of which include important pests known

to cause severe damages on crops e.g. *Meloidogyne* Goeldi, 1889, *Pratylenchus* Filipjev, 1934, *Pratylenchoides* Winslow, 1958 and *Tylenchorhynchus* Cobb, 1913.

## Keywords

plant-parasitic nematodes, conventional agriculture, organic agriculture, *Pisum sativum*, *Rosa damascena*, *Lavandula officinalis*

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