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An audit of the abundance, diversity and identification of economically important phyto-nematodes limiting the production of grain and oilseed crops in South Africa

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Updates on the phytonematodes that parasitize maize (staple food and important livestock feed source), groundnut and soybean (important sources of protein and oil) were done for South African production areas. Such interventions focused on the abundance, diversity and identity of nematode pests. Root and soil samples were obtained from 78 commercial maize fields (irrigation and rain-fed); soybean surveys were done for conventional and genetically modified, glyphosate-resistant crops (17 fields in total) and groundnut samples were obtained for diagnostic and research purposes. Phytonematodes were extracted, counted and morphologically identified from soil and plant samples using standard protocols. Molecular species identification was also done, including various DNA sequence protocols and SCAR-PCR (specifically for Meloidogyne spp.). *Meloidogyne* and *Pratylenchus* were identified as the predominant genera infecting maize and soybean. *Meloidogyne incognita*, *M. javanica*, *M. arenaria* were predominant for maize and *M. incognita* and *M. javanica* for soybean. Meloidogyne enterolobii was found also in one maize field and is a first report for local maize despite the crop being listed in international literature as a non- or poor host of this species. Pratylenchus zeae and *P. brachyurus* dominated in samples from maize and soybean crops, with *P. flakkensis*, *P. scribneri* and *P. vulnus* being first reports for soybean in South Africa. Regarding groundnut, *Robustodorus arachidis* was identified for the first time worldwide infecting the crop. Knowledge generated for these crops is important and useful and can be used for planning and deploying management strategies to produce such and other rotation crops, where economically important phytonematodes pose problems to producers and related industries.

Biography

Hendrika Fourie is currently working at the West University as a Lecturer and Researcher. She supervises mentors and trains the Post-Graduate Students and Collaborate with local and international nematologists and experts of other related disciplines regarding nematology-related research.

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