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Nematodes that limit South African grain production with focus on future perspectives and challenges to manage such pests

Nematode problems experienced by local grain producers escalated during the past decade. Reducing nematode-pest populations, particularly in maize-based cropping systems, is becoming increasingly difficult and pose a serious challenge. Despite the application of highly effective, registered nematicides, extremely high population densities of particularly root-knot nematodes have been recorded from roots/other below-ground plant parts of crops. No single nematode management strategy, not even application of the most effective chemical nematicide, is in many cases successful in reducing extremely high root-knot nematode population densities. Alternative and supplementary strategies have to be exploited and their application carefully planned to complement the responsible use of nematicides. This will assist producers to minimize quality and yield crop losses, and conserve soils. One such strategy that should be relied on in particular is the use of root-knot nematode resistant or poor-host cultivars, while the practice of traditional crop rotation has to be revisited. Removal of weeds also has to receive priority since many weed species maintain root-knot nematodes, particularly during warmer winters. These and other practices are discussed for use in combination with the limited number of nematicides registered on grain crops in South Africa. Producers and related industries have to accept that nematode pests represent a definite production constraint and that these pests hamper the sustainable production of crops, and most importantly adversely affecting food security.

Biography

Hendrika Fourie is a Researcher and Lecturer at the North-West University, South Africa. She has published more than 40 scientific articles in accredited, peer-reviewed journals and serves as an Editorial Board Member. Her research is interdisciplinary, such as plant and animal biodiversity, botany, molecular biology and zoology are integrated in projects.

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