

# Disease Notes

## Diseases Caused by Nematodes

### First Report of *Aphelenchoides besseyi* Causing Leaf Spot on Yam (*Dioscorea cayenensis*) in Brazil

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Plant Dis. 104:3083, 2020; published online as <https://doi.org/10.1094/PDIS-03-20-0511-PDN>. Accepted for publication 2 June 2020.

The main yam (*Dioscorea cayenensis*) production fields in Brazil are located in the northeastern region, particularly in the States of Paraíba, Pernambuco, Alagoas, and Bahia. From 2017 to 2019, yam plants showing angular dark brown lesions on leaves, associated with severe defoliation, were observed in a field inspection of yam production in the states of Alagoas and Sergipe. Samples of symptomatic leaf tissue were collected and immersed in distilled water in Petri dishes for 4 h. Subsequently, an aliquot of water suspension was examined under an inverted light microscope, and nematodes with morphological characters of the genus *Aphelenchoides* were observed. Nematode population densities were up to 113 specimens per gram of tissue. Identification to the species level was based on morphological and morphometric characteristics according to descriptions by OEPP/EPPPO (2017) and through a molecular approach based on sequencing of the D2/D3 rDNA region with the universal primers D2A and D2B (Al-Banna et al. 1997) and using the species-specific primer pair Abess\_11F/Abess\_11R

(GTATTCAATCCCGGACACT/CATCCTGTTCGGGCATAGTT) for *Aphelenchoides besseyi* located in the 28S rDNA (Sercero 2020). An amplicon of 745 bp (accession no. MK880169) showed 99.79% identity with known sequences of *A. besseyi* (KX622689, KY123700, and KX356776), and the PCR with the species-specific primer resulted in a fragment of 570 bp, characteristic of *A. besseyi*. Morphologically, females were slender with a short stylet (11.2 µm long), lateral field with four incisures, and conoid tail with star-shaped mucro. A pathogenicity test was performed in three plants, and three leaf discs containing infected tissue were deposited and fixed with adhesive tape on the abaxial surface of each of the three healthy leaves of *D. cayenensis*, which were kept in a humidity chamber for 72 h. Plants were maintained in a greenhouse, and after 20 days similar symptoms to those observed under field conditions were detected. Specimens of *A. besseyi* were extracted from the greenhouse-grown plants, fulfilling the modified Koch's postulates. Control plants did not show any symptoms, and nematodes were not recovered from them. *A. besseyi* has been reported in *D. trifida* in Guadeloupe (Kermarrec and Anais 1973). However, to our knowledge, this is the first report of *A. besseyi* parasitizing foliage of *D. cayenensis* in Brazil.

#### References:

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The author(s) declare no conflict of interest.

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**Keywords:** leaf nematode, tuber crop, pathogen detection

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