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418-P First detection of the spiral nematode *Helicotylenchus microlobus* on soybean in North Dakota **G. YAN (1), D. Huang (1), A. Plaisance (1), Z. A. Handoo (2)**. (1) North Dakota State University, Department of Plant Pathology, Fargo, ND, USA; (2) USDA-ARS, Mycology and Nematology Genetic Diversity and Biology Laboratory, Beltsville, MD, USA

Spiral nematodes (*Helicotylenchus* spp.) are common plant-parasitic nematodes in fields of many crops. In 2015 and 2016, 12 soil samples were collected from a soybean field in Richland County, ND. Nematodes were extracted from soil using a sugar centrifugal flotation method. Spiral nematodes were found in 11 of the samples, ranging from 125 to 3,300 per kg of soil. One soil sample with 1,500 spiral nematodes per kg was planted with two soybean cultivars, Sheyenne and Barnes, each in four replicates. After 15 weeks of growth at 22°C in a greenhouse room, the population of spiral nematodes increased substantially. The final density was $9,300 \pm 1,701$ spiral nematodes per kg of soil for Sheyenne and $9,451 \pm 2,751$ for Barnes. The reproductive factor in Sheyenne and Barnes was 6.2 and 6.3, respectively, demonstrating that this spiral nematode reproduces well on these two soybean cultivars. Individual spiral nematodes were examined morphologically and molecularly for species identification. The spiral nematode was identified as *Helicotylenchus microlobus* according to morphological and morphometric characteristics. The species identity was further confirmed by the ITS rDNA sequence. This nematode had only 91% sequence similarity to seven isolates of *H. pseudorobustus*, a spiral nematode species very closely related to *H. microlobus* in morphology. The *H. microlobus* nematode was reported as one of the most commonly observed spiral nematodes in soil samples in Minnesota and all 13 soybean cultivars tested except Hawkeye were rated as hosts. This finding represents the first occurrence of *H. microlobus* in North Dakota.