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417-P First detection of two new, unnamed root-lesion nematodes *Pratylenchus* spp. 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
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Root-lesion nematodes (RLN; *Pratylenchus* spp.) are important nematode pests on soybean. In 2015 and 2016, 17 soil samples were collected from two different soybean fields in Richland County, ND. All six samples from Field-1 contained RLN ranging from 125 to 2,000/kg of soil. Ten of the 11 samples collected from Field-2 had RLN from 150 to 875/kg of soil. Infested soil samples from these two fields were used to inoculate a soybean cultivar, Barnes, in four replicates. After 15 weeks of growth at 22°C in a greenhouse room, nematodes were extracted from soil using the sugar centrifugal flotation method and from roots using the Whitehead tray method. The final RLN populations were found to have increased greatly. The reproduction factor of RLN was 5.02 for Field-1 and 3.76 for Field-2, indicating that these nematodes infect and reproduce well on this soybean cultivar. Individual RLN were hand-picked and examined morphologically and molecularly for species identification. The *Pratylenchus* sp. in Field-1 differs from four morphologically closely related *Pratylenchus* spp. including *P. convallariae*, *P. pratensis*, *P. fallax*, and *P. flakkensis*. The *Pratylenchus* sp. in Field-2 differs from *P. flakkensis* and three other morphologically closely related *Pratylenchus* spp. including *P. alleni*, *P. hexincisus*, and *P. gibbicaudatus*. The root-lesion nematode species in Field-1 is distinct from that in Field-2. According to both morphological and molecular observations, these two North Dakota *Pratylenchus* spp. populations represent new species able to parasitize soybean and new records of the two *Pratylenchus* spp. in the literature.