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DISEASE NOTES



First Report of a Leaf Spot Disease Caused by *Alternaria protenta* on the *Datura stramonium* in Serbia

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Datura stramonium L. (jimsonweed) is an invasive and competitive annual weed and a potential reservoir host of pests and pathogens in agricultural fields. During a survey of potato growing fields in the municipality of Maglić, Vojvodina Province, typical *Alternaria* symptoms on leaves of *D. stramonium* were observed among the potato plants in September 2016. The incidence of diseased plants ranged from 12 to 70%. The symptoms started as small, round, light brown spots with chlorotic haloes, which gradually enlarged to 0.3 to 2 cm in diameter, becoming irregular and sometimes having a dark brown border. Isolates were obtained by placing small pieces of surface-sterilized infected tissues (immersed in 1% sodium hypochlorite for 1 min and rinsed with sterilized water) on V8 medium for 7 days at 23°C with a 12-h photoperiod. The five isolated colonies were circular, smooth, gray to brownish black, with concentric zones of very intensive sporulation. Conidiophores were branched, solitary or in small groups, brown to olivaceous brown, ranging from 125 to 230 µm. Mature conidia were olivaceous brown, long ovoid or long

ellipsoid, 102 to 113 μm long and 16 to 29 μm wide, with five to 12 transverse septa and zero to three longisepta. Beak dimensions were 62 to 98 μm long and 6 μm wide at the base apex to 2 μm on the top of the beak. Two-beak conidia were noticed with a frequency of 28%. Based on morphological characteristics, all isolates were identified as *Alternaria protenta* Sorauer (Simmons 2007). To further identify the pathogen, PCR was used with the *A. solani*-specific primer set OAsF7 and OAsR6 (Gannibal et al. 2014). A single unique band of 164 bp was amplified for all five isolates. To confirm the pathogen's identity, PCR was carried out with isolate JB 46-1 using primers ITS1/ITS4 (White et al. 1990), *gpd1/gpd2* (Berbee et al. 1999), and RPB2-5F2/fRPB2-7cR (Woudenberg et al. 2013). The ITS, GAPDH, and RPB2 sequences were deposited in GenBank under accession numbers KY913819, KY913818, and MH454660, respectively, and BLAST analyses showed 100% nucleotide sequence identity with the corresponding gene regions of *A. protenta* strain CBS 116651 (KC584217, KC584139, and KC584430). A pathogenicity test was carried out with isolates JB



... used as controls were sprayed with sterilized distilled water in a similar manner. Inoculated plants were kept in a moist chamber for 2 days with 90 to 100% relative humidity. Leaf spot symptoms, brown lesions with chlorotic halos, similar to those previously observed in naturally infected plants, appeared 5 days postinoculation for all inoculated plants. No symptoms were observed on the inoculated control plants. To fulfill Koch's postulates, lesions were excised, surface sterilized, and plated on water agar, and the fungus emanating from the infected tissues was identified as previously described. To our knowledge, this is the first report of *A. protenta* causing leaf spot on *D. stramonium* in Serbia. According to previous reports, *A. protenta* can also cause leaf spot disease on potato (Ayad et al. 2017; Landschoot et al. 2017; Woudenberg et al. 2014). The fact that jimsonweed coexists in close proximity with potato plants may have a potentially important economic impact on cultivation of solanaceous crops if left uncontrolled and unmonitored. Therefore, constant management practices are required to control the threat that *D. stramonium* weed and its diseases might present.

The author(s) declare no conflict of interest.
