October 2014, Volume 98, Number 10
Page 1432
http://dx.doi.org/10.1094/PDIS-03-14-0243-PDN

Disease Notes

First Report of Fusarium Wilt of Basil Caused by *Fusarium oxysporum* f. sp. *basilici* in Argentina

G. A. Lori, **I. Malbrán**, and **C. A. Mourelos**, Centro de Investigaciones de Fitopatología (CIDEFI-UNLP-CICBA), Facultad de Ciencias Agrarias y Forestales, Universidad Nacional de La Plata, 60 y 119, CC 31, (1900) La Plata, Buenos Aires, Argentina

Annually, ~20 ha of sweet basil (*Ocimum basilicum* L.) are cultivated in greenhouses in the green belt area surrounding La Plata, Argentina, mainly for fresh consumption. In 2004 to 2007, basil plants of cv. Genovese showed wilt symptoms, necrosis of leaves and stems, asymmetrical growth, and discolored vascular tissue in greenhouses in La Plata. In 2007, the same symptoms were observed on plants of cv. Morada grown from seeds that were produced in Italy. Isolations were completed from root, crown, and stem sections of diseased plants of cv. Genovese from three greenhouses in 2004 to 2007, and from commercial seeds, stem sections, flowers, and seeds of diseased plants of cv. Morada in 2007. Seeds and portions of symptomatic tissues were surface-disinfested with 0.5% NaOCl for 1 min, rinsed in sterilized distilled water, air dried, and plated on 2% potato dextrose agar (PDA). Twenty-seven isolates were identified as *Fusarium oxysporum* Schltdl. based on morphological characteristics (4), and the species identification confirmed by PCR assay using a *F. oxysporum* f. sp. *basilici*-specific primer pair, Bik 1 and Bik 2 (1). Vegetative compatibility groups (VCGs) were determined for the 27 isolates through complementation of nitrate-nonutilizing mutants generated from these isolates (2) and paired with two Italian tester strains from an international collection (PVS-Fu 220 and PVS-Fu 125, provided by V. Balmas, Univeristà degli Studi di Sassari, Italy). All 27 isolates from Argentina belonged to VCG 0200. This is a unique VCG for *F. oxysporum* f. sp. *basilici* and has been identified in Israeli, American, and Italian isolates of the fungus (3). To fulfill Koch's postulates, pathogenicity tests were conducted with 12 isolates selected to reflect the multiple sources of fungal recovery, including root, crown, and stem sections, and leaves of diseased plants of cv. Genovese and commercial seeds, stem sections, flowers, and seeds of cv. Morada. Isolates were each grown on moistened (40% w/w), autoclaved, polished rice for 10 days, dried, and ground in a grinder. The number of CFU/g rice was determined by serial dilution plating onto PDA plates. The inoculum was added to autoclaved soil at 10^4CFU/g dry soil. For each isolate, 8 healthy basil seedlings of each of cvs. Genovese and Morada were planted in pots, each containing 1 liter of inoculated soil. The control treatment consisted of 8 basil seedlings of each of the same cultivars planted in autoclaved soil mixed with sterilized, ground, polished rice. Plants were grown in a greenhouse with natural daylight for 45 to 50 days after inoculation. All inoculated plants showed the same symptoms described for the original basil plants. No symptoms were observed on the control plants. *F. oxysporum* f. sp. *basilici* was re-isolated from the vascular tissue of stems of symptomatic plants but not from control plants, and species identification confirmed by PCR assay as previously described. The presence of the pathogen was verified in the seed lot produced in Italy, suggesting that this could have been a source of inoculum that introduced the pathogen into La Plata, Argentina, as supported by the hypothesis that infested seed resulted in spread of a clonal population of *F. oxysporum* f. sp. *basilici* internationally (1). To our knowledge, this is the first report of *F. oxysporum* f. sp. *basilici* infecting sweet basil in Argentina.

References: (1) A. Chiocchetti et al. Plant Dis. 85:607, 2001. (2) J. C. Correll et al. Phytopathology 77:1640, 1987. (3) A. Garibaldi et al. Plant Dis. 81:124, 1997. (4) J. F. Leslie and B. A. Summerell. The *Fusarium*Laboratory Manual. Blackwell Publishing, Ames, IA, 2006.