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First Report of *Sclerotinia sclerotiorum* Infection on *Cuphea*. T. J. Gulya, USDA-ARS Northern Crop Science Laboratory, Fargo, ND 58105; R. W. Gesch, USDA-ARS North Central Soil Conservation Research Laboratory, Morris, MN 56267; C. A. Bradley and L. E. del Rio, Department of Plant Pathology, North Dakota State University, Fargo 58105; and B. L. Johnson, Department of Plant Sciences, North Dakota State University, Fargo 58105. Plant Dis. 90:1554, 2006; published on-line as DOI: 10.1094/PD-90-1554A. Accepted for publication 13 September 2006.

Species of the genus *Cuphea* (family Lythraceae) are being developed as potential domestic sources of medium length fatty acids (lauric and capric) for use in industrial lubricants and detergents. During September 2004, patches of dead plants were observed in test plots of *Cuphea* sp. cv. PSR-23 (1) (*Cuphea viscosissima* Jacq. × *C. lanceolata* W.T. Aiton) near Morris, MN and Prosper, ND, approximately 200 km apart. Seed yield in the diseased Morris field was 78 kg/ha compared with 516 kg/ha in nearby, nonaffected fields of the same variety, for an 85% yield reduction. Stems were split open to reveal long, cylindrical sclerotia as much as 8 mm long. Isolations from diseased stem tissue and sclerotia were identified as *Sclerotinia sclerotiorum* (Lib.) de Bary and produced typical sized sclerotia (4 to 6 mm in diameter) after 7 days growth on potato dextrose agar (PDA). *Cuphea* PSR-23 plants were grown in the greenhouse in individual pots for 5 weeks and then inoculated. Three inoculation methods were used. For the first method, ascospores of a sunflower isolate of *S. sclerotiorum* were sprayed onto blooming flowers and foliage at a rate of 5,000 spores per ml. The inoculated plants were kept in a dark, 18°C mist chamber for 48 h and then returned to a greenhouse maintained at 24/20°C, day/night temperatures. All 20 inoculated plants were visibly colonized by *Sclerotinia* sp. after 3 days, and all plants were dead by 7 days. The second inoculation used the petiole inoculation technique employed by canola researchers (2). The blade from the third leaf was excised and a micropipette tip containing an agar disk of mycelia of the *Cuphea* isolate was placed over the cut end of the petiole. Five days after inoculation, all 30 inoculated plants were dead, while none of the 10 control plants (using sterile agar disks on the cut petiole) were affected. Isolations were made from diseased plants inoculated by all methods, and *S. sclerotiorum* colonies were observed on PDA medium with typical sclerotia from 4 to 6 mm in diameter. The third inoculation method tested root infection. *S. sclerotiorum* was grown on autoclaved proso millet (*Panicum miliaceum* L.) seed for 7 days, and 5 g of colonized millet seed was placed in a hole 6 cm from the base of a *Cuphea* plant, with one plant per 3.7 liter pot. Sunflower (*Helianthus annuus* L.; oilseed hybrid Cargill 270) plants served as inoculated controls. None of the 20 *Cuphea* plants were infected via soil inoculations compared with 70% of 30 sunflower plants that developed basal stalk rot and wilt within 2 weeks after inoculation. To our knowledge, this is the first report of *S. sclerotiorum* infection on *Cuphea* sp., and is believed to be the first report of infection on any genus within the Lythraceae (loosestrife family). With over 100 annual and perennial species in the genus *Cuphea*, the possibility of *Sclerotinia* spp. resistance needs to be investigated to further develop this potential oilseed crop.

References: (1) S. J. Knapp and J. M. Crane. Crop Sci. 40:299, 2000. (2) J. Zhao et al. Plant Dis. 88:1033, 2004.