Disease Notes

Infection of Cold-Injured Blueberry Stems by *Botryosphaeria dothidea*. W. O. Cline, Department of Plant Pathology, North Carolina State University, Raleigh 27695-7616. Plant Dis. 78:1010, 1994. Accepted for publication 20 June 1994.

Highbush blueberries (*Vaccinium corymbosum* L.) planted in low-lying high-organic soils in southeastern North Carolina have a history of severe stem blight caused by *Botryosphaeria dothidea* (Moug.:Fr.) Ces. & De Not. (syn. *B. ribis* Gross. & Duggar). Stem blight is generally not observed in new plantings until the second or third season. (1). A 0.2-ha planting (cv. Murphy) in Bladen County was examined biweekly or monthly for the first 3 yr to determine conditions associated with high plant mortality in young bushes. Plants grew profusely and did not become completely dormant, and 139 of 500 bushes were cold injured at first frost in November 1992. Cold-injured stems (about 10–30 cm long) developed a characteristic dead, hook-shaped tip that persisted throughout the following growing season. The presence of *B. dothidea* was confirmed by isolation onto PDA; Koch's postulates were completed with randomly selected isolates inoculated onto the cultivar Bluechip. In 1993, the incidence of *B. dothidea* in stems injured by cold the previous November was 19, 39, and 88% for March, May, and June, respectively. Widespread infection by *B. dothidea* following cold injury could account for past observations of field epidemics 1–2 yr after planting.

Reference: (1) T. C. Creswell and R. D. Milholland. Plant Dis. 71:710, 1987.

Metalaxyl Insensitivity of *Phytophthora erythroseptica* Isolates Causing Pink Rot of Potato in Maine. D. H. Lambert, Department of Plant Biology and Pathology, and B. Salas, Department of Entomology, University of Maine, Orono 04469. Plant Dis. 78:1010, 1994. Accepted for publication 7 June 1994.

Potato (*Solanum tuberosum* L.) fields in Aroostook County, Maine were surveyed for *Phytophthora* tuber rot pathogens during September and October 1993. Although the majority of isolates were *Phytophthora infestans* (Mont.) de Bary, isolates causing pink rot were recovered from six separate fields. Radial growth rates of these strains were determined on metalaxyl (Ridomil 2E)-amended V8 agar incubated in the dark at 21 C for 6 days. Three *Phytophthora erythroseptica* Pethybr. isolates had ED_{50} values greater than 320 µg a.i./ml. The three other isolates, two of which were *P. erythroseptica,* had ED_{50} values less than or equal to 0.1 µg/ml, typical of sensitive strains in other *Phytophthora* species. Whole Katahdin tubers were inoculated with single mycelium plugs, incubated in the dark at 21 C, and halved after 7 days. Symptomatic cross-sectional areas of the five *P. erythroseptica* isolates did not differ significantly ($P = 0.05$). In Maine, metalaxyl has been used for Pythium leak and Phytophthora late blight control since the early 1980s, typically with two applications per year in alternating years. Metalaxyl insensitivity has been detected less frequently in soilborne than in aerial pathogen populations. This is the first report of insensitivity to metalaxyl in *P. erythroseptica.* It was not detected in the western United States in a previous study (1).

Reference: (1) R.W. Stack et al. Phytopathology 83:886, 1993.

Occurrence of *Cercospora zebrina* on Subterranean Clover in South Texas. R. G. Pratt, USDA, ARS, FRU, Box 5367, Mississippi State 39762, and W. R. Ocumpaugh, Texas Agricultural Experiment Station, Beeville 78102. Plant Dis. 78:1010, 1994. Accepted for publication 12 July 1994.

Symptoms of Cercospora leaf spot were observed on numerous cultivars of subterranean clover (*Trifolium subterraneum* L.) (subclover) at Beeville, Texas, from 1988 to 1990. Symptoms included tan lesions with dark borders on leaves, girdling lesions on petioles, and nongirdling, elongate lesions on stems. Isolates obtained by transfers of conidia from sporulating lesions were identified as *Cercospora zebrina* Pass. by conidium and conidiophore morphology (1). Leaves of six cultivars of subclover and 10 cultivars of arrowleaf, berseem, crimson, red, and white clovers were inoculated with aqueous suspensions of conidia of six isolates. Symptoms developed consistently only on subclover. Four cultivars of *T. s. subterraneum* developed numerous lesions in response to all isolates, while cultivars of *T. s. brachycalycinum* (Clare) and *T. s. yanninicum* (Yarloop) developed few or none. Results indicate that *C. zebrina* from subclover in south Texas is host-specialized in pathogenicity and that host resistance is available. This is the first known occurrence of this disease in North America west of Mississippi (1).

Reference: (1) R. G. Pratt. Phytopathology 74:1152, 1984.

First Report of Squash Leaf Curl Virus on Watermelon in Texas. T. Isakeit and N. L. Robertson, Department of Plant Pathology and Microbiology, Texas A&M University, Weslaco 78596, and College Station 77843, respectively; J. K. Brown, Department of Plant Sciences, University of Arizona, Tucson 85721; and R. L. Gilbertson, Department of Plant Pathology, University of California, Davis 95616. Plant Dis. 78:1010, 1994. Accepted for publication 14 July 1994.

In fall 1993, watermelon plants (*Citrullus lanatus* (Thunb.) Matsum. & Nakai) from all of 24 fields surveyed in eight south Texas counties exhibited curled, blistered, yellowed, mottled leaves and small, deformed fruit. Disease incidence ranged from 75 to 100%, and yield losses were 30–100%. The disease was associated with whitefly (B biotype of *Bemisia tabaci* (Gennadius), syn. *B. argentifolii* Bellows & Perring) infestation. Geminiviral nucleic acids were detected from symptomatic leaves in nine of 18 plants by squash blot hybridization analysis with a general DNA probe for whitefly-transmitted geminiviruses. No other viruses were detected in these plants by electron microscopy or PAGE analysis of viral minipurification extractions. Geminivirus DNA-A component fragments were amplified by PCR with degenerate primers and sequenced. A DNA fragment (450 bp) from a conserved region of the coat protein gene was 95 and 98% identical to fragments of two isolates of squash leaf curl virus (SLCV) from California (D) and Arizona (AZ), respectively. The common region sequence (determined from a 1.1 kbp DNA-A fragment) was 94% identical to that of a different California SLCV isolate (#490-4). Total nucleic acids isolated from diseased leaves were treated with RNase and inoculated into zucchini squash (*Cucurbita pepo* L. var. *melopepo* (L.) Alef.) and pumpkin (*C. pepo* var. *pepo*) plants using a particle delivery system. Typical SLCV symptoms developed in both hosts after 9 days. Adult whiteflies were allowed to feed on symptomatic plants for 24 hr followed by a 48-hr inoculation access period on pumpkin seedlings. Typical SLCV symptoms developed in these plants 9–10 days later. This is the first report of a whitefly-transmitted geminivirus infecting cucurbits in Texas.

A New Host Race of *Meloidogyne chitwoodi* from California. H. Mojtahedi and G. S. Santo, Washington State University, Irrigated Agriculture Research and Extension Center (IAREC), and C. R. Brown, USDA-ARS, IAREC, Prosser, WA 99350; and H. Ferris and V. Williamson, Department of Nematology, University of California, Davis 95616. Plant Dis. 78:1010, 1994. Accepted for publication 27 June 1994.

Meloidogyne chitwoodi Golden et al consists of two host races. Race 1 does not reproduce (reproductive factor [RF]: final number of eggs ÷ initial inoculum of 5,000 eggs per pot < 0.1) on Thor alfalfa, and race 2 does (RF > 1) (2). Both races cause serious damage to potato, but neither reproduces (RF < 0.1) on clonal selection PI275187.10 of *Solanum bulbocastanum* Dun., a wild potato species used as a source of resistance in our breeding program (1). Fourteen field isolates of *M. chitwoodi* collected from a potato production area in the Pacific Northwest failed to reproduce (RF < 0.1) on *S. bulbocastanum.* However, an isolate from Tulelake, California, (CAMC2) reproduced (RF = 7 and 11) on *S. bulbocastanum* in two greenhouse experiments. Esterase enzyme pattern and RF of CAMC2 on Columbian tomato, 51; Stephens wheat, 36; Florunner peanut, 0; NC95 tobacco, 0.01; California Wonder pepper, 0.01; Charleston Gray watermelon, 0.3; and Deltapine cotton, 0, were typical of *M. chitwoodi* races 1 and 2. However, CAMC2 was more similar to race 2, in that Thor alfalfa was a suitable host (RF = 12). This host race of *M. chitwoodi,* which reproduces on resistant *S. bulbocastanum,* was designated race 3.

References: (1) C. R. Brown et al. Plant Dis. 73:957, 1989. (2) G. S. Santo et al. Plant Dis. 69:361, 1985.