Disease Notes

First Report of Flower Blight of Lantana Caused by *Phytophthora parasitica*. G. E. Holcomb, Department of Plant Pathology and Crop Physiology, Louisiana Agricultural Experiment Station, Louisiana State University Agricultural Center, Baton Rouge 70803. Plant Dis. 77:1168, 1993. Accepted for publication 30 June 1993.

A flower blight of *Lantana camara* L. 'New Gold' was frequently observed on landscape plantings throughout Baton Rouge, Louisiana, in May and June 1991 after a period of above-normal rainfall (25.4 cm in May). All floral parts were susceptible; infected florets turned tan and detached easily and peduncles turned black but remained attached with other floral parts. Shoot tips were occasionally infected. Infected floral parts on 2% water agar consistently yielded a *Phytophthora* sp. Symptoms were reproduced when flowers were inoculated with zoospore suspensions or agar blocks containing mycelia (produced on 20% V8 juice agar), and the pathogen was reisolated. The fungus was identified as *P. parasitica* Dastur, partly on the basis of its production of chlamydospores in culture, growth at 35 C, and production of oospores (21–27 μm in diameter) when paired with mating type A1 of *P. parasitica*. This is the first report of a flower blight of *L. camara* caused by *P. parasitica*.

Occurrence of the Slime Mold *Didymium squamulosum* in Creeping Bentgrass in Oregon. S. C. Alderman, USDA-ARS, National Forage Seed Production Research Center, Corvallis, OR 97331-7102. Plant Dis. 77:1168, 1993. Accepted for publication 25 June 1993.

The slime mold *Didymium squamulosum* (Alb. & Schw.) Fries was found at a high level (two to six sporangia per gram of cleaned seed) among seed harvested from a field of creeping bentgrass (*Agrostis stolonifera* L.) near Salem, Oregon, in 1992. This is the first report of *D. squamulosum* associated with seed. Sporangia, with detached stalks, were similar in size (0.4–0.7 mm) and shape to small-seeded bedstraw (*Galium* sp.), a weed in bentgrass, and may be mistaken for those of the weed without microscopic examination. The field was maintained under recommended management practices during the previous 2 yr, and factors contributing to the occurrence of *D. squamulosum* at such high levels have not been identified. It is likely the mold was present on the foliage and collected with the seed during harvest. Although slime molds are not considered important pathogens of turfgrass, the introduction of *D. squamulosum* with seed may contribute to its dissemination and occurrence on foliage in bentgrass plantings.

Nucleotide Sequence of a Geminivirus Associated with Tomato Leaf Curl from India. O. Chatchawankanphanich, University of Wisconsin; B.-T. Chiang and S. K. Green, AVRDC, P.O. Box 42, Shanhua, Tainan 741, Taiwan; S. J. Singh, Indian Institute of Horticultural Research, Bangalore, India; and D. P. Maxwell, University of Wisconsin, Madison 53706. Plant Dis. 77:1168, 1993. Accepted for publication 2 June 1993.

Tomato leaf curl virus (TLCV-IND) is transmitted by *Bemisia tabaci* (Gennadius) and causes severe losses in India. Serological results and particle morphology indicate that TLCV-IND is a geminivirus (2). Leaves from tomato with leaf curl symptoms were collected at Bangalore, India, in 1992 and dried. In polymerase chain reactions with two sets of degenerate primers (PAL1v1978 and PAR1c715 [M. R. Rojas and D. P. Maxwell, *personal communication*]; PAR1v722 [5′ ATATCTGCAGGGNAARATHTGGATGGA 3′] and PAL1c1960 [5′ TGGACTGCAGACNGGNAARACNATGTGGGC 3′]) designed to amplify total DNA-A-like components, 1.5-kb and 1.2-kb fragments were obtained. This indicates that the TLCV-IND DNA-A is similar in size to the Old World geminiviruses, e.g., tomato yellow leaf curl virus from Israel (TYLCV-ISR; GenBank No. X15656), but is slightly larger than the DNA-A of New World viruses, e.g., tomato mottle virus (ToMoV) from Florida (GenBank No. M90494 and M90495). The 1.5-kb fragment (recombinant plasmid, pIND1) was partially sequenced. The common region (GenBank No. L12739) of TLCV-IND is more similar to that of TLCV from Taiwan (71% identity, *unpublished*) and Australia (1) and less similar to TYLCV-ISR, TYLCV from Sardinia (GenBank No. X61153), TYLCV from Thailand (S. Attathom, *personal communication*), tomato golden mosaic virus from Brazil (GenBank No. K020229), and ToMoV. Likewise, comparisons of the nucleotide sequences for the AL1 (GenBank No. L11746) and AR1 (GenBank No. L12738) ORFs from pIND1 to those of these seven geminiviruses give nucleotide identities <77% and <79%, respectively. Since nucleotide identities >85% indicate the same geminivirus, TLCV-IND is distinct from these seven viruses. When tomato germ plasm is evaluated for resistance, the distinctiveness of TLCV-IND must be considered.

References: (1) I. B. Dry et al. J. Gen. Virol. 74:147, 1993. (2) V. Muniyappa et al. Ann. Appl. Biol. 118:595, 1991.

A New Disease of Pinto Bean Caused by *Aphelenchoides ritzemabosi* in Wyoming. G. D. Franc and C. M.-S. Beaupré, Department of Plant, Soil and Insect Sciences, University of Wyoming, Laramie 82071-3354, and J. L. Williams, Department of Plant Pathology, University of Minnesota, St. Paul 55108. Plant Dis. 77:1168, 1993. Accepted for publication 7 June 1993.

Field observations made during August 1992 in north central Wyoming revealed pinto bean (*Phaseolus vulgaris* L.'Othello') plants with numerous dark, angular lesions on leaves and an occasional superficial necrosis on the upper surface of the petiole. Microscopic examination revealed that a nematode was associated with symptomatic tissue. Koch's postulates were completed with cv. Othello and nematodes recovered from symptomatic tissue collected at two field sites. Symptoms developed on inoculated unifoliolate and trifoliolate leaves after about 11 days at 22 C and became more pronounced after 14–20 days. The nematode recovered from the original plant material and after two serial transfers through artificially inoculated plants was identified by A. M. Golden (USDA-ARS Nematology Laboratory, Beltsville, MD) as *Aphelenchoides ritzemabosi* (Schwartz) Steiner & Buhrer. This nematode has routinely been found in association with the alfalfa stem nematode (*Ditylenchus dipsaci* (Kühn) Filipjev) in alfalfa in Wyoming. Alfalfa and pinto bean crop rotation may provide a mechanism through which the nematode is able to persist.

First Report of *Phoma macrostoma* Causing Leaf Spot on Fevertree. R. E. Baird, Purdue University, SWPAP, RR6, Box 139A, Vincennes, IN 47591; G. Morgan-Jones, Auburn University, Auburn, AL 36849; T. B. Brenneman and J. M. Ruter, University of Georgia, CPES, Tifton 31793; and J. D. Rogers, Washington State University, Pullman 99164. Plant Dis. 77:1168, 1993. Accepted for publication 31 July 1993.

Numerous large, tan, distinctly zonate lesions that resulted in defoliation were observed on 1-yr-old fevertree plants (*Pinckneya pubens* Michx.) grown in a nursery at Tifton, Georgia. Three fungi—*Phoma macrostoma* Mont., *Xylaria cubensis* (Mont.) Fr., and a *Pestalotia* sp.—were isolated consistently from the leaves. Each of the fungi was cultured on potato-dextrose agar, and mycelial plugs were used to inoculate leaves either nonwounded or punctured with a needle. Inoculations were replicated four times on 1.5-yr-old greenhouse-grown plants. After 7 days of incubation in moist chambers at 18–25 C, both wounded and nonwounded plants inoculated with the isolate of *P. macrostoma* showed symptoms resembling those in the nursery. Inoculations with *X. cubensis* and *Pestalotia* sp. did not result in symptom development. Reisolations from the necrotic lesions were identified consistently as *P. macrostoma*. The investigation was repeated for all three fungi, and *P. macrostoma* was again shown to be highly pathogenic. This fungus previously was reported to be parasitic on other species of woody plants (1).

Reference: (1) G. H. Boerema and M. M. J. Dorenbosch. Persoonia 6:49,1970.

First Report of *Sirococcus conigenus* Seedborne in Norway Spruce. E. Motta, T. Annesi, and E. Forti, Istituto Sperimentale per la Patologia Vegetale, Via Bertero 22, 00156 Rome, Italy. Plant Dis. 77:1169, 1993. Accepted for publication 14 June 1993.

Samples of 1,000 seeds from each of four seed lots from Italy of Norway spruce (*Picea excelsa* (Lam.) Link) were tested for presence of fungal pathogens. Seeds were surface-disinfested for 30 min with 30% H_2O_2, rinsed three times in sterile water, and incubated for 10 days on malt agar under 12 hr of dark and 12 hr of NUV light (320–400 nm) at 20 C. Samples from two seed lots yielded *Sirococcus conigenus* (DC.) Cannon & Minter (= *S. strobilinus* G. Preuss), the causal agent of Sirococcus blight of conifers; one sample had three infested seeds and the other had four. Because the disease is seedborne in some North American species of spruce (1), the effect of seedborne inoculum on Norway spruce was tested. Seeds (1,600) from the seed lot with 0.4% of infested seeds were sown in containers in a sterile mixture of peat and vermiculite (1:2.5, v/v), and the containers were placed in a growth chamber at 18–20 C under 12 hr of dark and 12 hr of white cold light (1,200 lx). After 4 wk, two of the seedlings (0.13%) showed blight symptoms. These seedlings were placed in petri dishes on moistened filter paper and incubated under continuous white light at 15 C. Pycnidia of *S. conigenus* developed on the diseased needles within 1 wk, demonstrating that seedborne *S. conigenus* can cause seedling blight of *P. excelsa*.

Reference: (1) J. R. Sutherland et al. Can. J. Bot. 59:559, 1981.

First Report of Cucurbit Aphid-borne Yellows Luteovirus in the United States. O. J. Lemaire, W. D. Gubler, and J. Valencia, Department of Plant Pathology, University of California, Davis 95616; H. Lecoq, INRA, Station de Pathologie Vegetale, BP 94, 84143 Montfavet Cedex, France; and B. W. Falk, Department of Plant Pathology, University of California, Davis 95616. Plant Dis. 77:1169, 1993. Accepted for publication 7 June 1993.

Cucurbit aphid-borne yellows luteovirus (CABYV) was recently reported in France and the Mediterranean basin and was shown to significantly reduce yields of summer-grown cucurbits (1). In the summer of 1992, symptoms characteristic of CABYV were observed in cucurbits, including cucumbers, honeydews, cantaloupes, zucchinis, and pumpkins, grown in California's San Joaquin, Sacramento, and Salinas valleys. These symptoms included initial chlorotic lesions followed by leaf thickening and overall yellowing of older leaves. In aphid transmission bioassays, both *Aphis gossypii* Glover and *Myzus persicae* (Sulzer) transmitted a virus in a circulative manner from naturally infected plants. *A. gossypii* was the more efficient vector. The virus host range included several cucurbits, including *Cucumis melo* L. and *Cucurbita pepo* L. Positive ELISA reactions using antisera to a French CABYV isolate were obtained from naturally infected cucurbit plants and from greenhouse-inoculated plants showing typical symptoms. In some fields, 100% of the plants were found to be infected with CABYV. There were weak cross-reactions between beet western yellows luteovirus and CABYV in reciprocal ELISAs. The results of aphid transmission and host range and serological assays suggest that this disease is caused by a North American isolate of CABYV. Initial survey results indicated that CABYV is widespread in California cucurbit production areas. This is the first report of CABYV in North America.

Reference: (1) H. Lecoq et al. Plant Pathol. 41:749, 1992.

Sources of Resistance in F_1 Corn Hybrids to Ear Rot Caused by *Aspergillus flavus*. K. W. Campbell, D. G. White, and J. Toman, Department of Plant Pathology, and T. R. Rocheford, Department of Agronomy, University of Illinois, Urbana 61801. Plant Dis. 77:1169, 1993. Accepted for publication 3 June 1993.

In 1991, 1,189 and 978 crosses with the susceptible corn (*Zea mays* L.) inbreds MO17 and B73, respectively, were evaluated for resistance to ear rot caused by *Aspergillus flavus* Link:Fr. Inbreds used in development of F_1 hybrids included Agricultural Experiment Station releases and inbreds from Canada, Europe, Mexico, India, China, and South Africa. Crosses were divided into groups based on maturity. Twelve to 18 plants in each of two replicates were inoculated 20–24 days following midsilk (50% of ears with emerged silks). A modified pinboard inoculation technique was used to wound kernels and inject 2×10^5 conidia per milliliter into the primary ear of each plant. Thirty to 40 days following inoculation, all ears were husked and were visually rated from 1 to 10 (where 1 = 10% and 10 = 100% *A. flavus* colonization of the inoculated area). The average ratings of all inbreds crossed with MO17 and B73 were 5.5 and 5.4, respectively, and standard deviations were 1.29 and 1.34, respectively. Seventeen F_1 crosses with B73 and 16 F_1 crosses with MO17 that displayed high resistance to *A. flavus* were selected for further study. Inbreds in cross with B73 included (number in parenthesis indicates rating): Oh516 (1.5), 75-ROO1 (2.1), NC232 (2.1), CI2 (2.2), TR213 (2.7), L317 (2.8), KY58 (3.0), 33-16 (3.2), 75-RO12 (3.2), N6 (3.3), SDP031 (3.5), M182 (3.5), SD18 (3.5), KYS (3.6), CH66-17 (4.0), LB31 (4.4), and F486 (5.1). Inbreds in cross with MO17 included: MS214 (1.5), OH513 (1.6), H103 (2.0), T115 (2.1), SP292 (2.2), LB31 (2.3), ND363 (2.5), B37*Ht2* (2.6), B40 (2.8), Tex6 (3.3), SDP262 (3.5), Y7 (3.5), B9 (3.6), FR809 (4.1), 75-ROO1 (4.3), and N8 (4.6); two of the inbreds (LB31 and 75-ROO1) provided resistance in F_1 crosses with B73 and MO17. A complete listing of the genotypes, with their respective ratings, evaluated in this study is available upon request.

First Report of *Magnaporthe rhizophila* on Kentucky Bluegrass in North America. P. J. Landschoot, Department of Agronomy, Pennsylvania State University, University Park 16802, and M. L. Gullino, Dipartimento Di Valorizzazione E Protezione Delle Risorse Agroforestali, Universita Degli Studi Di Torino, Torino, Italy. Plant Dis. 77:1169, 1993. Accepted for publication 31 May 1993.

Magnaporthe rhizophila Scott & Deacon was isolated from Kentucky bluegrass (*Poa pratensis* L.) roots in University Park, Pennsylvania, during August 1992. Roots exhibited vascular discoloration and cortical lesions. With the exception of slight stunting, no foliar symptoms were evident. Three isolates of *M. rhizophila* produced perithecia on half-strength potato-dextrose agar within 4 wk of isolation. Ten single-ascospore isolates from perithecia produced by one of the three original isolates produced mature perithecia when placed on surface-disinfested wheat (*Triticum aestivum* L.) seedlings growing in water agar. All single-ascospore isolates were homothallic. Ascospores were fusiform and three-septate and ranged from 23 to 28 μm in length and 7 to 9 μm in width. Other features of the teleomorph conformed to the description by Scott and Deacon (1), who described *M. rhizophila* from wheat roots in South Africa. Six-week-old Kentucky bluegrass cultivar Touchdown was inoculated with *M. rhizophila*-colonized perennial ryegrass (*Lolium perenne* L.) grains and incubated in a growth chamber at 29 C with a 12-hr photoperiod. Control plants were not inoculated with ryegrass grains. Twenty one days after inoculation, vascular and cortical tissues of the roots were dark brown and foliage was stunted and bronze. *M. rhizophila* was isolated from symptomatic plants. This is the first report of *M. rhizophila* in North America and the only report of this fungus on turfgrass.

Reference: (1) D. B. Scott and J. W. Deacon. Trans. Br. Mycol. Soc. 81:77, 1983.

Web Blight of Madagascar Periwinkle in Alabama. A. K. Hagan and J. M. Mullen. Auburn University, Auburn, AL 36849. Plant Dis. 77:1169, 1993. Accepted for publication 2 August 1993.

Web blight of Madagascar periwinkle (annual vinca, *Catharanthus roseus* (L.) G. Don 'Bright Eye' and 'Coquette') was noted during the summers of 1989, 1990, and 1991 in Lee County, Alabama. Semicircular, water-soaked lesions were first seen on leaves just above the soil line at the leaf-petiole junction and later along the leaf margins. Lesions expanded for several days along the midvein until the entire leaf was destroyed. Blighted leaves quickly turned brown, withered, clung to the shoots, and matted on the surrounding foliage. Although lesions were not seen on the stems, blighted plants often died. Mycelia of the pathogen were often seen on and suspended between the leaves. Blight progressed from the lowest leaves to the shoot tip. *Rhizoctonia solani* Kühn AG-1 was isolated from symptomatic tissues. Koch's postulates were satisfied by reisolating *R. solani* from blighted tissues on inoculated plants. Web blight of Madagascar periwinkle has been reported in India (1).

Reference: (1) D. C. Khatua and S. Maiti. Indian Phytopathol. 35:124, 1982.