

First Report of Columbia Lance Nematode (*Hoplolaimus columbus*) on Cotton in Alabama. W. S. Gazaway and B. Armstrong, Department of Plant Pathology, Auburn University, Auburn, AL 36849. Plant Dis. 78:640, 1994. Accepted for publication 29 January 1994.

Columbia lance nematode (*Hoplolaimus columbus* Sher), long considered a serious obstacle to cotton (*Gossypium hirsutum* L.) production in the coastal plains of South Carolina, North Carolina, and Georgia, was found October 1992 in three cotton fields in Autauga County, Alabama. The River Trussell field, soil type McQueen silt loam, had the highest Columbia lance nematode population densities (284/100 cm³ of soil). Cotton in this field was severely stunted in several areas of the field and suffered approximately 20% yield losses. Relatively low Columbia lance nematode population densities (4/100 cm³ of soil) were detected in the two other cotton fields. Cotton in these two fields was only slightly stunted in a few small spots, and there was no detectable decline in yield. Species identification was confirmed by M. Noffsinger, N & A Nematode Identification Service, Davis, California, on the basis of the morphology of adult females.

First Report of *Macrophomina phaseolina* Associated with Vine Decline of Muskmelon in South Australia. G. E. Walker, South Australian Research and Development Institute (SARDI), P.O. Box 411, Loxton, South Australia 5333, Australia. Plant Dis. 78:640, 1994. Accepted for publication 29 January 1994.

Local growers of muskmelon (*Cucumis melo* L., Reticulatus Group) commonly ascribe symptoms of declining vines and bleached, tan lesions on stems near the crown to the disease gummy stem blight caused by *Didymella bryoniae* (Auerw.) Rehm. Muskmelon plants (cv. Eldorado) from Waikerie with these symptoms were examined in January 1991, and abundant microsclerotia and, occasionally, pycnidia consistent with descriptions of *Macrophomina phaseolina* (Tassi) Goidanich were observed on stem lesions. Microsclerotia were also abundant in the pith of stems. *M. phaseolina* was consistently isolated from diseased tissue on potato-dextrose agar. Stem lesions grew larger with dark, water-soaked margins when stems were incubated under moist conditions at 24 C. Early spring planting in warm (11–25 C) Riverland soils kept excessively wet by drip irrigation is thought to favor infection by the fungus. Early root infection by *M. phaseolina* is an important causal agent of vine decline of muskmelon in the lower Rio Grande Valley of Texas (1,2). Surveys are required to establish the importance of this disease in South Australia.

References: (1) B. D. Bruton et al. Plant Dis. 71:259, 1987. (2) W. Carter. Plant Dis. Rep. 63:927, 1979.

First Report of Virulence to Wheat with Leaf Rust Resistance Gene *Lr19* in Mexico. J. Huerta-Espino, Cereal Pathologist, SARH, INIFAP, CIANO, Apdo. Postal 515, 85640 Cd. Obregon, Son., Mexico; and R. P. Singh, Geneticist/Pathologist, CIMMYT, Lisboa 27, Apdo. Postal 6-641, 06600 Mexico, D.F. Plant Dis. 78:640, 1994. Accepted for publication 14 February 1994.

Lr19, a gene for leaf rust resistance, was transferred to wheat (*Triticum aestivum* L.) from *Agropyron elongatum* (Host) P. Beauv. (1) and has been effective against all isolates of *Puccinia recondita* Roberge ex Desmaz. f. sp. *tritici* (Eriks. & E. Henn.) tested so far in Mexico, the United States, Canada, and in 32 countries in a worldwide survey conducted from 1987 to 1990. *Lr19* has not been extensively used in cultivars. However, two released cultivars carry *Lr19*, Sunnan in Sweden and Oasis 86 in Mexico. Oasis 86, released in 1986, is grown exclusively in northwestern Mexico (Sonora and Sinaloa states), where no virulence to wheat with *Lr19* has ever been detected. In September 1993, leaf rust pustules were observed on seedlings of Oasis 86, which were inoculated in the greenhouse with stripe rust collected in Celaya (state of Guanajuato in central Mexico). Obviously, the stripe rust inoculum was contaminated with leaf rust. The leaf rust inoculum was isolated and used to inoculate seedlings of Thatcher near-isogenic lines, a mutant of Thatcher + *Lr19* (RL6040) that lacks yellow pigment in the flour, and Oasis 86. Our results confirmed the isolate's virulence to wheat with *Lr19*. This pathotype has

been designated CBJ/QQ (2). We believe that CBJ/QQ could have evolved from the previously known pathotype CBJ/QL by means of a single mutation for virulence (2). Virulence to wheat with *Lr19* has been reported before in other countries, but no culture was ever saved for verification. This is the first confirmed report of virulence to wheat with *Lr19*. This pathotype is available on request from the second author.

References: (1) D. Sharma and D. R. Knott. Can. J. Genet. Cytol. 8:137, 1966. (2) R. P. Singh. Plant Dis. 75:790, 1991.

Unusual Occurrences of Bacterial Leaf Blight on Maize and Sorghum in Central Illinois. D. G. White and J. K. Pataky, Department of Plant Pathology, University of Illinois, Urbana 61801; and R. E. Stall, Department of Plant Pathology, University of Florida, Gainesville 32611. Plant Dis. 78:640, 1994. Accepted for publication 24 March 1994.

Water-soaked linear lesions of leaves emerging from whorls, symptoms typical of bacterial leaf blight, caused by *Acidovorax avenae* subsp. *avenae* (syn. *Pseudomonas avenae*), were noted in three of the past four years on various types of maize (*Zea mays* L.) and sorghum (*Sorghum bicolor* (L.) Moench) grown in Urbana, Illinois. Symptoms were severe following heavy rains in August 1990. In 1992, severe symptoms on white and bicolor *sh2* sweet corn hybrids corresponded with about 35 cm of rain in July. When approximately 61 cm of rain fell from June through August 1993, symptoms were severe on sweet corn, field corn, broom corn (*S. vulgare*), and grain sorghum. Some *sh2* sweet corn lines were extremely susceptible. Apparently, *A. a. avenae* was widespread when rainy weather provided conditions for infection. Pure cultures isolated from greenhouse-grown corn that had been inoculated with a mixture of bacterial strains obtained in 1993 from field-infected corn and sorghum leaves were identified as *A. a. avenae* from fatty acid profiles. Subsequently, strains from corn, broom corn, and grain sorghum caused symptoms on all three inoculated hosts. This disease is unlikely to be prevalent or cause substantial damage in central Illinois when rainfall is more typical; however, severe outbreaks of bacterial leaf blight may occur sporadically in the southeastern United States where the pathogen overwinters on weed hosts (1,2), environmental conditions frequently are favorable for infection, and a few of the highly susceptible *sh2* sweet corn hybrids are widely grown.

References: (1) R. D. Gitaitis et al. Phytopathology 68:227, 1978. (2) D. R. Sumner and N. W. Schaad. Phytopathology 67:1113, 1977.

Occurrence of Powdery Mildew (*Erysiphe* sp.) on Greenhouse Tomatoes in Canada. R. R. Bélanger, Département de Phytologie, Université Laval, Quebec, PQ G1K 7P4 Canada, and W. R. Jarvis, Agriculture Canada, Research Station Harrow, ON N0R 1G0 Canada. Plant Dis. 78:640. Accepted for publication 22 February 1994.

In fall 1993, powdery mildew was reported simultaneously on greenhouse tomatoes (*Lycopersicon esculentum* Mill.) in three separate locations in the province of Quebec, Canada. The pathogen was observed on cvs. Capello and Trust from the areas of Montreal, Quebec City, and Lac St-Jean, each geographically separated by at least 250 km (150 miles). White powdery mildew pustules developed on the upper surface of the leaf and were more frequent on mature than on young leaves. Individual lesions were somewhat circular but sometimes merged to cover large areas of the leaf surface. Cleistothecia were absent. Development of the disease was confined to certain areas within each greenhouse but was extensive enough to have warranted chemical control had any been registered. Artificial inoculations on healthy tomato plants produced typical signs of the disease. On the basis of conidial characters, the fungus was identified as *Erysiphe* sp., either *E. orontii* Cast or *E. cichoracearum* DC. It clearly differed from *Leveillula taurica*, another common powdery mildew on tomato prevalent in warmer countries. It was similar to the European fungus described by Fletcher et al (1) and Vakalounakis and Papadakis (2) as *Erysiphe* sp. This is the first report of *Erysiphe* on mature tomato plants in North America.

References: (1) J. T. Fletcher et al. Plant Pathol. 37:594, 1988. (2) D. J. Vakalounakis and A. Papadakis. Plant Pathol. 41:372, 1992.

First Report of a Geminivirus in Hawaii. J. S. Hu, S. Lius, K. Barry, Z. C. Wu, M. Wang, and R. T. Hamasaki, Department of Plant Pathology, University of Hawaii, Honolulu 96822. *Plant Dis.* 78:641, 1994. Accepted for publication 19 January 1994.

Eighty-one samples collected from four areas on the island of Oahu (Waimanalo, Kahuku, Waianae, and Hawaii Kai) of tomato, pepper, bean, eggplant, watermelon, zucchini, sweetpotato, lettuce, or ornamental plants were tested for geminiviruses, because they had severe whitefly (*Bemisia tabaci* (Gennadius)) infestation and were showing yellowing, mosaic, or stunting symptoms. One sample, *Abutilon hybridum* (lantern 'ilima) that had foliar wrinkle mottle symptoms, was positive in indirect ELISA with a monoclonal antibody against a shared epitope of whitefly-transmitted geminiviruses (1) (MAB 3F7, provided by E. Hiebert, University of Florida). Fifteen additional symptomatic lantern 'ilima samples from six different sites were all positive in ELISA. The lantern 'ilima samples were also tested in immunocapture-polymerase chain reaction (IC-PCR) using degenerate primers (PAL1v1978 and PAR1c715) designed to amplify the A component of DNA of whitefly-transmitted geminiviruses (2). An approximately 1.5-kb fragment was obtained, and it was hybridized in Southern blot analysis with a DNA A-component probe of bean golden mosaic geminivirus. Healthy control samples of *Abutilon* spp. were negative in both ELISA and IC-PCR tests. On the basis of results from serology, PCR, and hybridization, we conclude that a geminivirus was identified in Hawaii.

References: (1) M. Cancino et al. (Abstr.) *Phytopathology* 82:1145, 1992. (2) M. R. Rojas et al. *Plant Dis.* 77:340, 1993.

First Report of Squash Silverleaf Disorder Associated with B-Biotype Sweetpotato Whitefly in New York. M. T. McGrath and D. Gilrein, Cornell University, Long Island Horticultural Research Laboratory, Riverhead, NY 11901-1098, and J. K. Brown, Department of Plant Sciences, University of Arizona, Tucson, AZ 85721. *Plant Dis.* 78:641, 1994. Accepted for publication 7 March 1994.

Symptoms of squash silverleaf (SSL) were observed in field plantings of greenhouse-grown transplants of yellow and zucchini squash (*Cucurbita pepo* L.) at the Long Island Horticultural Research Laboratory in Suffolk County, New York, during August 1993. This is the first report of SSL in the northeastern United States. Five whiteflies were identified individually as the B-biotype of *Bemisia tabaci* (Gennadius) on the basis of general esterase profiles containing the diagnostic B-1 and B-2 bands (1). Feeding by nymphs of this whitefly biotype has been shown to induce SSL (2). Whiteflies and silvered leaves were observed on a few seedlings prior to transplanting on 4 August, 16 days after plants were moved out of the greenhouse. By 25 August, adult and immature sweetpotato whiteflies were noticeably abundant, and 45% of 1,526 plants exhibited SSL symptoms. The upper surface of affected leaves was partially to completely silver, but on some leaves only veins were silver. To confirm that the field whitefly population could induce the observed SSL symptoms, 10 adults from squash plants were collected by aspiration, transferred to zucchini seedlings in the laboratory, and allowed to oviposit for 3 days. Adults were then removed, and immatures were allowed to develop on the abaxial leaf surfaces of these seedlings. SSL symptoms developed on the newest leaves 10 to 14 days after adults were removed. The B-biotype sweetpotato whiteflies have been observed in greenhouses on Long Island for 6 yr but not in commercial fields prior to 1993. In 1993, whiteflies were found in commercial plantings of zucchini, potato, sweetpotato, gourd, and zinnia. These zucchini plants showed SSL symptoms. SSL symptoms were not seen in a production field of summer squash where no whiteflies were found. The B-biotype whitefly and associated disorders have become a major limitation to vegetable production in Florida, Arizona, California, and other southern states. A similar impact may not be felt in northern states where this whitefly is unable to overwinter outside. The unusually hot, dry conditions during the 1993 growing season were very favorable for whitefly development and may have contributed to this late-season outbreak.

References: (1) H. S. Costa and J. K. Brown. *Entomol. Exp. Appl.* 61:211, 1991. (2) H. S. Costa et al. *Phytopathology* 83:763, 1993.

First Report of Race 2 of Cabbage Yellows Caused by *Fusarium oxysporum* f. sp. *conglutinans* in Texas. R. H. Morrison, Sakata Seed America, Salinas, CA 93907; and A. Mengistu and P. H. Williams, Department of Plant Pathology, University of Wisconsin, Madison 53706. *Plant Dis.* 78:641, 1994. Accepted for publication 3 February 1994.

Yellows of cabbage, *Brassica oleracea* L. var. *capitata* L., is caused by races 1 and 2 of *Fusarium oxysporum* Schlect. f. sp. *conglutinans* (Wollenweb.) W.C. Snyder & H.N. Hans (2). Race 1 does little damage at soil temperatures below 18 C and is controlled by polygenic B resistance up to 22 C and by monogenic dominant A resistance up to 28 C. Race 2, in contrast, damages susceptible genotypes at 12 C and above and overcomes B and A resistance at temperatures above 14 and 22 C, respectively. In October 1992, cabbage plants with yellows symptoms (stunting, chlorosis, leaf drop, and vascular browning in stems and roots) were found in commercial plantings of susceptible and A-resistant cabbages in the Rio Grande Valley near Mission, Texas. Isolations consistently yielded *F. oxysporum*. Isolates were compared with races 1 and 2 of *F. oxysporum* f. sp. *conglutinans* on the differential cabbage cultivars Golden Acre (susceptible), Rio Verde (B resistant), and Greenboy and Bravo (A resistant) with a standard root dip inoculation method (10^6 spores/ml) (1) at 23–24 C. All cultivars showed typical yellows symptoms and were susceptible to the Texas isolates, a response comparable to race 2. Against race 1, in contrast, Golden Acre was susceptible, Rio Verde was moderately susceptible, and Greenboy and Bravo were resistant. Consequently, the Texas isolates were typed as race 2, which has previously been identified only in California (1985) and Russia (1988). Texas is typically a cool season cabbage-growing region and has been considered at low risk for yellows. However, race 2 may pose a threat since it attacks susceptible, B-resistant, and A-resistant cultivars at lower respective soil temperatures than race 1. Late summer and early fall plantings, when soil temperatures often exceed 24 C, may be at particular risk.

References: (1) P. W. Bosland et al. *Plant Dis.* 72:777, 1988. (2) P. W. Bosland and P. H. Williams. *Can. J. Bot.* 65:2067, 1986.

Occurrence of Sclerotinia and Botrytis Shoot Blights on Pistachio in California. T. J. Michailides and D. P. Morgan, University of California, Davis/Kearney Agricultural Center, Parlier 93648. *Plant Dis.* 78:641, 1994. Accepted for publication 10 January 1994.

Sclerotinia shoot blight, caused by *Sclerotinia sclerotiorum* (Lib.) de Bary, was first recorded in 1986 in two commercial pistachio (*Pistacia vera* L.) orchards in the San Joaquin Valley and in three orchards in the Sacramento Valley. Isolations from blighted current-growth shoots, collected from nine surveyed orchards, consistently revealed either *S. sclerotiorum* (in five orchards) or *Botrytis cinerea* Pers.:Fr. (causing Botrytis shoot blight [1]) to be present in all orchards. Prewounded current-growth shoots of the pistachio cultivar Kerman were inoculated with mycelial plugs from PDA cultures of two isolates of *S. sclerotiorum* collected from different locations. All shoots inoculated in April and early May showed leaf wilting within 2 days, and they were killed 7–10 days after inoculation. Shoots inoculated from the end of May to the end of July had 50–70% blight after 1–2 wk, and none were killed until 2 mo after inoculation. Symptoms on blighted twigs artificially inoculated with *S. sclerotiorum* resembled those on naturally infected twigs due to either *S. sclerotiorum* or *B. cinerea*, but reisolation from these twigs yielded only *S. sclerotiorum*. Twig infections caused by *B. cinerea* could sometimes be distinguished from those of *S. sclerotiorum* by the buff-colored sporulation of *B. cinerea*, especially in cool wet weather. Frequently, however, no distinguishing signs were present to separate the two causal organisms. For correct diagnosis, therefore, isolation from blighted twigs that lack sporulation of *B. cinerea* is required. In 1992, samples of blighted shoots were collected from a commercial orchard, and *S. sclerotiorum* was isolated from 80% of the samples. Although not as common as Botrytis blight, Sclerotinia shoot blight can become a major disease of pistachio in California under certain conditions, and methods for control should be considered.

Reference: (1) H. A. Bolkan et al. *Plant Dis.* 68:163, 1984.