

Disease Notes

Verticillium Wilt of Alfalfa in Southern California Caused by *Verticillium albo-atrum*. D. C. Erwin and R. A. Khan, Department of Plant Pathology, University of California, Riverside 92521, and A. Baameur, Cooperative Extension, Riverside County, Riverside, CA 92507. Plant Disease 72:453, 1988. Accepted for publication 22 January 1988.

Verticillium wilt of alfalfa (*Medicago sativa* L.) was detected in April 1987 near Redlands (San Bernardino County) and near San Jacinto (Riverside County). Verticillate conidiophores and dark mycelium on isolates were typical of *Verticillium albo-atrum* Reinke & Berth. (1). When 30-day-old alfalfa plants (cv. CUF101) were inoculated by dipping bare roots in a suspension of conidia (10^7 /ml of two different isolates), severe symptoms typical of those seen in the field and previously described (1) were induced in 30 days. *V. albo-atrum* was reisolated from affected plants. Identity and pathogenicity were confirmed by R. N. Gilbert (USDA, Prosser, WA). This report supports Heale's (2) prediction that the alfalfa strain of *V. albo-atrum* (growth optimum of 26 C) could spread into relatively warm areas. This is the farthest south this disease has been reported in the Northern Hemisphere.

References: (1) A. A. Christen and R. N. Peaden. Plant Dis. 65:319, 1981. (2) J. B. Heale. Can. J. Plant Pathol. 7:191, 1985.

Black Rot of Crucifers in a Cabbage Seed Field in Western Washington. M. L. Derie and R. L. Gabrielson, Western Washington Research and Extension Center, Washington State University, Puyallup 98371. Plant Disease 72:453, 1988. Accepted for publication 8 February 1988.

Black rot of crucifers, caused by *Xanthomonas campestris* pv. *campestris* (Pammel) Dowson, was observed for the first time in the Skagit valley of western Washington in 1987. Approximately 50% of the plants in an affected cabbage (*Brassica oleracea* var. *capitata* L.) seed field were diseased. The pathogen was isolated from leaf and stem samples showing disease symptoms. Strains recovered from those samples produced typical symptoms of black rot when inoculated into cabbage seedlings. No black rot symptoms were found in a survey of 17 other cabbage seed fields in the area. Although several lots of cabbage seed produced in western Washington have been reported to contain *X. c.* pv. *campestris* (1), black rot has not been reported in previous surveys or seed field inspections (2). Since symptoms of black rot are suppressed under cooler temperatures (1), it is possible that the unusually warm summer weather in 1987 was associated with disease development and symptoms were therefore expressed.

References: (1) N. W. Schaad. Plant Dis. 66:885, 1982. (2) T. Schultz and R. L. Gabrielson. Phytopathology 76:1306, 1986.

First Report of *Heterodera glycines* on Soybeans in Ontario, Canada. T. R. Anderson and T. W. Welacky, Agriculture Canada, Harrow, Ontario N0R 1G0; H. T. Olechowski, Plant Industry Branch, and G. Ablett, Ridgeway College of Agricultural Technology, Ridgeway, Ontario N0P 2C0; and B. A. Ebsary, Biosystematics Research Centre, Ottawa, Ontario K1A 0C6. Plant Disease 72:453, 1988. Accepted for publication 8 February 1988.

Soybean cyst nematode (*Heterodera glycines* Ichinohe) was observed on soybean (*Glycine max* (L.) Merr.) roots in two fields in Kent County, Ontario, in August 1987. Juveniles and cysts were identified at the Biosystematics Research Centre, Ottawa. The mean tail length of juveniles extracted from soil was 46.5 μ m, indicating race 3 or 4 may be present (1). The fields consisted of light-textured, loamy soils and were located 30 km apart. Typical symptoms of *H. glycines* infestation (2), including circular to oblong patches of stunted plants and general chlorosis of foliage, were evident at both sites. Yield loss was estimated at 15–20%. Hot, dry weather in July and August 1987 may have contributed to disease severity and symptom expression.

References: (1) A. M. Golden et al. Plant Dis. Rep. 54:544, 1970. (2) J. A. Wrather et al. Plant Dis. 68:829, 1984.

A Third Race of *Fusarium oxysporum* f. sp. *lycopersici* Identified in California. R. M. Davis, Department of Plant Pathology, University of California, Davis 95616; K. A. Kimble, Harris-Moran Seed Co., Davis, CA 95616; and J. J. Farrar, Department of Plant Pathology, University of California, Davis 95616. Plant Disease 72:453, 1988. Accepted for publication 22 January 1988.

A third race of *Fusarium oxysporum* Schlecht. f. sp. *lycopersici* (Sacc.) Snyder & Hans. was identified in processing tomatoes (*Lycopersicon esculentum* Mill.) in California's Sacramento Valley. The relationship between this race and the race 3 described from Florida and Australia (1) is unknown. The race of the California isolate was determined in greenhouse inoculation tests by symptom expression in the following tomato cultivars: Early Pak-7 (susceptible to races 1 and 2), Pakmor (resistant to race 1), and Walter (resistant to races 1 and 2). Seedlings were inoculated 10 days after sowing by dipping injured roots for 2 min in a conidial suspension (1×10^6 conidia/ml). The test was repeated twice. Races 1 and 2, originally isolated from tomatoes in California, were included to verify diagnostic symptoms in the appropriate hosts. Symptoms typical of Fusarium wilt occurred in all differential hosts inoculated with the new isolate, indicating that a third race exists in California.

Reference: (1) R. Grattidge and R. G. O'Brien. Plant Dis. 66:165, 1982.

Lettuce Infectious Yellows Virus in Hydroponically Grown Lettuce in Pennsylvania. J. K. Brown and M. E. Stanghellini, Department of Plant Pathology, University of Arizona, Tucson 85721. Plant Disease 72:453, 1988. Accepted for publication 22 January 1988.

Lettuce infectious yellows virus (LIYV) (1) was isolated from symptomatic leaf lettuce (*Lactuca sativa* L.) plants from a commercial hydroponics greenhouse near Danville, PA. Over 90% of the plants showed interveinal chlorosis on outer leaves and failed to reach expected market weight during August–September 1987. Both the greenhouse whitefly (*Trialeurodes vaporariorum* (Westw.)) and the sweet potato whitefly (*Bemisia tabaci* (Genn.)) were reported as greenhouse pests in the summer of 1987, prior to the disease outbreak. The virus was transmitted by *B. tabaci* but not by mechanical means in experiments conducted in Arizona. Symptoms in indicators were similar to those caused by Arizona isolates of LIYV (LIYV-A) (1). Long, flexuous rods (1,850–2,050 \times 10 nm) were observed by electron microscopy in crude and purified preparations made from leaves and were morphologically like LIYV-A (1). A homologous reaction was observed between the PA isolate and LIYV-A in double-diffusion tests with LIYV-A antiserum. This is the first report of infectious yellows outside the southwestern United States.

Reference: (1) J. K. Brown and M. R. Nelson. Phytopathology 76:236, 1986.

First Report of *Ditylenchus destructor* in Pods and Seeds of Peanut. B. L. Jones and D. De Waele, Grain Crops Research Institute, Private Bag X1251, Potchefstroom 2520, Republic of South Africa. Plant Disease 72:453, 1988. Accepted for publication 4 January 1988.

In May 1987, the potato rot nematode (*Ditylenchus destructor* Thorne) was isolated from pods and seeds of peanut (*Arachis hypogaea* L. 'Sellie') from the Transvaal Province in South Africa. A subsequent survey revealed the presence of this pathogen in all major peanut-producing regions. Species identification was based on stylet length, number of lateral lines, and tail shape of females and males; vulva position and length of postuterine sac of females; and spicule and bursa lengths of males (1,2). Identification was confirmed by E. van den Berg (Plant Protection Research Institute, Pretoria). Nematodes were observed in the exocarp, endocarp, testa, and embryo and on cotyledons. Eggs were present in all invaded tissues. The infected hulls showed black discoloration, appearing first along the longitudinal veins. Invaded kernels were usually shrunken, infected testae were brown to black, and invaded embryos were brown. Pathogenicity was confirmed by inoculation experiments conducted in the greenhouse. This is the first observation of this destructive pathogen in fruit of peanut.

References: (1) R. Fortuner. Rev. Nematol. 5:17, 1982. (2) G. Thorne. Proc. Helminthol. Soc. Wash. 12:27, 1945.