Disease Notes

Outbreak of Strawberry Anthracnose Caused by *Colletotrichum acutatum* in Central Brazil. G. P. Henz, L. S. Boiteux, and C. A. Lopes, CNPH/EMBRAPA, C. Postal 07-0218, 70359 Brasilia-DF, Brazil. Plant Dis. 76:212, 1992. Accepted for publication 1 August 1991.

A severe outbreak of anthracnose was observed in strawberry (*Fragaria* × *ananassa* Duchesne 'IAC Campinas') during the 1989 growing season (June–October) in central Brazil. Symptoms consisted of girdling of the peduncle, browning of flowers, and blackening and mummification of green fruits. Symptoms of anthracnose usually observed in the region, such as girdling lesions on stolons and petioles, were observed rarely and black leaf spot and crown rot were not seen. The pathogen was identified by B. J. Smith as *Colletotrichum acutatum* J.H. Simmonds. In greenhouse tests, flower and fruit symptoms became evident 3 days after artificial inoculation of IAC Campinas plants with a suspension of 5×10^6 conidia per milliliter. The disease is new in that area and was probably introduced through infected stock imported from the state of São Paulo, where this type of anthracnose is becoming widespread. The outbreak was probably due to cultivar susceptibility and prevailing weather conditions that season, i.e., humid and rainy rather than the usual dryness. Because flowers and fruits were attacked, yield losses were high, ranging from 30 to 68%.

Crown Gall of Kiwi Caused by *Agrobacterium tumefaciens* in Japan. H. Sawada and H. Ieki, Fruit Tree Research Station, Ministry of Agriculture, Forestry and Fisheries, Akitsu, Hiroshima 729-24, Japan. Plant Dis. 76:212, 1992. Accepted for publication 18 September 1991.

In 1988, galls 5–10 cm in diameter were observed on the root systems of four mature vines of kiwi (*Actinidia chinensis* Planch.) in Hiroshima Prefecture in western Japan. The galls were rough, light to dark brown, and covered with dead, flaky tissue. The inner part contained a white, fleshy callus from which *Agrobacterium tumefaciens* (Smith and Townsend) Conn was isolated. Pathogenic bacteria from two of the vines were assigned to biovar 3 on the basis of phenotypic (2) and serological properties and fatty acid methyl ester (FAME) profiles. These strains were highly aggressive (causing galls 2.9–6.4 mm in diameter after 30 days) in grape (*Vitis vinifera* L.), tomato (*Lycopersicon esculentum* Mill.), and tobacco (*Nicotiana tabacum* L.) but weakly aggressive (causing galls 1.5–2.4 mm in diameter) in sunflower (*Helianthus annuus* L.) and *Kalanchoe daigremontiana* Raym.-Hamet & E. Perrier. FAME profiles of pathogenic bacteria from the other two vines corresponded to those of biovar 2, but the strains differed from biovar 2 (2) in positive reactions for oxidase activity, alkai production in litmus milk culture, acid production from melezitose, and growth in 2% NaCl at 35 C and on Schroth et al medium (2) and in negative reaction for alkali production from L-tartrate. The strains were highly aggressive (causing galls 3.0–7.0 mm in diameter) in tomato, weakly aggressive (causing galls 2.1–3.7 mm in diameter) in sunflower and kalanchoe, and nonaggressive in grape and tobacco. This is the first observation of kiwi crown gall disease in Japan. The disease was reported in New Zealand on the basis of symptoms (1), but the causal bacteria were not isolated.

References: (1) D. W. Dye et al. N.Z. J. Sci. Technol. A31:31, 1950. (2) H. Sawada et al. Ann. Phytopathol. Soc. Jpn. 56:199, 1990.

A New Physiological Race of *Phytophthora sojae* on Soybean. R. E. Wagner and H. T. Wilkinson, Department of Plant Pathology, University of Illinois, Urbana 61801. Plant Dis. 76:212, 1992. Accepted for publication 7 August 1991.

Twenty-six physiological races of *Phytophthora sojae* M.J. Kaufman & J.W. Gerdemann, the causal agent of Phytophthora root and stem rot of soybean (*Glycine max* (L.) Merr.) have been reported (1; B. L. Keeling, *personal communication*). A new race, designated race 27, was obtained from a culture isolated from soybean and identified as race 16 (B. L. Keeling, *personal communication*). Race 27 originated from a single zoospore after five successive single zoospore transfers. The identity of race 27 was determined by inoculating taproots or hypocotyls of differential soybean cultivars incubated at 24 C. Soybean cultivars Altona, Harosoy, Mack, PI 171442, Sanga, and Williams and isolines of Williams containing *Rps 1-b*, *Rps 1-c*, *Rps 1-k*, or *Rps 3* were susceptible to race 27, and Harosoy 63, PI 103091, and an isoline of Williams containing *Rps 1* were resistant. Subcultures originating from single zoospores have been previously reported to differ in virulence from their parent culture (2).

References: (1) A. C. Layton et al. Plant Dis. 70:500, 1986. (2) F. S. Rutherford et al. Phytopathology 75:371, 1985.

Sources of Resistance to Stem Rust in Barley. R. Dill-Macky and R. G. Rees, Queensland Wheat Research Institute, P.O. Box 2282, Toowoomba 4350, and W. J. R. Boyd, University of Western Australia, Nedlands 6151, Australia. Plant Dis. 76:212, 1992. Accepted for publication 18 September 1991.

Epidemics of stem rust, caused by *Puccinia graminis* Pers.:Pers., occurred during 1982–1984 in crops of barley (*Hordeum vulgare* L.) in Queensland (1). In 1985, 370 disease-free selections from a 1983 CIMMYT nursery in Mexico were screened with *P. g. tritici* Eriks. & E. Henn. (Pgt-LSH) in the field. Selected lines were further evaluated in the field with Pgt-LSH in 1986 and 1987, with *P. g. secalis* Eriks. & E. Henn. in 1986, and with a putative hybrid of these forms (Pgh) in 1986. Rust development was minimal in lines Q21861, Q21928, and Q21972, and grain yield and quality were not reduced. In subsequent nurseries (1988–1990), rust development was considerably lower in these three lines (av. 4%) than in the moderately resistant cultivar Grimmett (av. 23%) (1). The resistance of the three lines can be detected by reduced seedling receptivity (uredia per square centimeter) between 10 and 28 C. In all tests, Q21861 was the most resistant line, significantly less receptive to Pgt (LSH, MMB) and Pgh than the cultivars Chevron (T gene) and Heitpas 5 (T_2 gene). Although the parentage is unknown, these lines may provide valuable sources of resistance to *P. graminis*, particularly in areas where the new race Pgt-QCC is important.

Reference: (1) R. Dill-Macky et al. Aust. J. Agric. Res. 41:1057, 1990.

An *Acremonium* Endophyte of *Lolium perenne* Associated with Hyperthermia of Cattle in Pacific County, Washington. A. D. Wilson, C. C. Gay, and S. C. Fransen, Regional Plant Introduction Station, USDA-ARS, Department of Veterinary Clinical Medicine, and Department of Agronomy and Soils, Washington State University, Pullman 99164. Plant Dis. 76:212, 1992. Accepted for publication 20 September 1991.

Clavicipitaceous endophytes are well known for causing maladies of livestock. Recent studies of a new syndrome causing hyperthermia of cattle in Pacific County, Washington, prompted surveys of endophytes in pasture grasses of seven affected paddocks. Cattle removed from affected pastures and fed alfalfa became normothermic within 3 days, suggesting a pyrogenic factor in feed. Tillers of dominant grasses and rushes, including *Agrostis palustris* (Huds.) Pers., *A. tenuis* Sibth., *Alopecurus pratensis* L., *Festuca arundinacea* Schreb., *Holcus lanatus* L., *Lolium perenne* L., and *Juncus effusus* L., were examined for endophytic fungi. An anamorphic endophyte infecting *L. perenne* was found in four fields at infection rates of 16, 17, 25, and 30%. The endophyte was identified as an *Acremonium* species that appeared morphologically distinct from *A. lolii* Latch, Christensen, & Samuels and *A. typhinum* Morgan-Jones & W. Gams. The fungus also grew faster in vitro (1.2-2.6 mm per day) on 3.9% PDA at 25 C than most anamorphic endophytes. This report provides the first evidence of a possible association between the *Lolium* endophyte and a hyperthermia syndrome of cattle in the western United States.