Disease Notes

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First Report of Ascochyta Blight of *Cicer montbretii,* a Wild Perennial Chickpea in Bulgaria. W. J. Kaiser, R. M. Hannan, and F. J. Muehlbauer, USDA, ARS, Washington State University, Pullman 99164-6402; and M. Mihov, Institute for Wheat and Sunflower 'Dobroudja' near General Toshevo, Bulgaria. Plant Dis. 82:830, 1998; published on-line as D-1998-0428-01N, 1998. Accepted for publication 27 April 1998.

In the Stranja Mountains of southeastern Bulgaria, native populations of *Cicer montbretii* Jaub. & Spach were found on the edge of a road in an oak forest near the village of Gramatikova (42°1′38″N; 27°36′49″E) at an elevation of about 125 m. *C. montbretii,* a perennial species, is the only wild *Cicer* sp. native to Bulgaria. At the time of collection, necrotic lesions were observed on the stems, leaflets, and pods of several plants, and these lesions were reminiscent of those induced by *Ascochyta rabiei* (Pass.) Labrousse. The teleomorph (sexual stage) of *A. rabiei, Didymella rabiei* (Kovachevski) v. Arx (syn. *Mycosphaerella rabiei* Kovachevski), was discovered in 1936 on overwintered chickpea residue in southern Bulgaria. The fungus is heterothallic and requires the pairing of two compatible mating types for development of fertile pseudothecia. Both mating types of *A. rabiei* were isolated previously from naturally infected, cultivated chickpeas (*C. arietinum* L.) from northeastern and southern Bulgaria (1), and the teleomorph, *Didymella rabiei* (Kovachevski) v. Arx, developed on naturally infested chickpea debris from both regions when it was incubated at appropriate environmental conditions. Isolations were made from lesions on the leaflets, stems, pods, and seeds of *C. montbretii* by surface disinfecting tissue in 0.25% NaOCl for 5 min, drying on paper hand towels, and placing small pieces of tissue on 2% water agar and Difco potato dextrose agar. Plates were incubated at 22 to 24°C under fluorescent lights with a 12-h photoperiod. *A. rabiei* was isolated from all foliar tissues of the plant, including seeds. Koch's postulates were fulfilled by inoculating the foliage of chickpea PI 458870 and reisolating the fungus from lesions that developed on the leaflets and stems. Six Bulgarian isolates of *A. rabiei* from *C. montbretii* were paired with compatible mating type tester isolates of *A. rabiei,* MAT1-1 (ATCC 76501) and MAT 1-2 (ATCC 76502), following the procedure of Kaiser and Kusmenoglu (2). Both mating types were found among the six isolates. Two were MAT 1-1 and four MAT 1-2. The teleomorph did not develop on the small amount of naturally infested chickpea residue tested. Therefore, in Bulgaria, both cultivated and wild chickpeas are infected naturally by *A. rabiei* and both mating types have been isolated from these hosts. *D. rabiei* will likely be found in native stands of *C. montbretii* in Bulgaria as more samples of overwintered infested debris are examined for the teleomorph. This is the first report of *A. rabiei* causing blight of a wild *Cicer* sp.

References: (1) W. J. Kaiser. Can. J. Plant Pathol. 19:215, 1997. (2) W. J. Kaiser and I. Kusmenoglu. Plant Dis. 81:1284, 1997.

First Report of Natural Infection of *Pisum sativum* subsp. *elatius* by *Mycosphaerella pinodes* in Bulgaria. W. J. Kaiser, F. J. Muehlbauer, and R. M. Hannan, USDA, ARS, Washington State University, Pullman 99164-6402; and M. Mihov, Institute for Wheat and Sunflower 'Dobroudja' near General Toshevo, Bulgaria. Plant Dis. 82:830, 1998; published on-line as D-1998-0428-02N, 1998. Accepted for publication 27 April 1998.

Pisum sativum L. subsp. *elatius* (Steven ex M. Bieb.) Asch. & Graebn. is a wild pea species that is native to Bulgaria. It readily crosses to the cultivated pea species *P. sativum* subsp. *sativum.* Field pea is an important component in the crop rotation system of the northeast region of Bulgaria. Little is known or published on the diseases of wild *Pisum* subspecies. In June 1997, brown to reddish brown, irregularly shaped lesions 5 to 10 mm in diameter were found on the leaves and stems of *P. sativum* subsp. *elatius* growing under native conditions in the low growing vegetation in a mixed forest habitat on the Black Sea coast at Albena, Bulgaria (43°22′26″N; 28°05′02″E) at an elevation of about 50 m. Black pycnidia were observed within lesions and contained hyaline, primarily two-celled conidia that measured 7 to 17 × 3 to 5 µm. On artificially inoculated pea stem pieces incubated on 2% water agar (WA) at 22 to 24°C for 28 days, pseudothecia developed with hyaline, two-celled ascospores constricted at the septum and measuring 12 to 17 × 4 to 7 µm. Black chlamydospores produced singly or in chains also formed in infected foliar tissues and on potato dextrose agar (PDA) and WA. Isolations were made from the lesions on pea tissue onto WA and PDA after disinfesting in 0.25% NaOCl for 5 min. Koch's postulates were fulfilled by inoculating the foliage of *P. sativum* subsp. *sativum* cvs. Dark Skin Perfection and Sounder and *P. sativum* subsp. *elatius* (W6-20047), and reisolating the fungus from lesions that developed on the inoculated leaves and stems. The wild *Pisum* fungus was identified as *Mycosphaerella pinodes* (Berk. & Blox.) Vestergr. based on cultural and morphological characteristics (2), pathogenicity tests, and by comparing random amplified polymorphic DNA (RAPD) markers with those of American Type Culture Collection (ATCC) isolates 201628 to 201633 of *M. pinodes.* The fungus was identified as a pathogen of cultivated peas in Bulgaria by Kovachevsky and Hristov (1) in 1949. This is the first report of *M. pinodes* infecting *P. sativum* subsp. *elatius* in Bulgaria and other countries where *P. sativum* subsp. *elatius* is a native plant species.

References: (1) I. H. Kovachevsky and A. Hristov. 1949. Bulgarian Acad. Sci., Scientific-Popular Ser. 10. (2) E. Punithalingam and P. Holliday. 1972. CMI Descript. of Pathog. Fungi and Bacteria, no. 340. Commonwealth Mycol. Institute, Kew, England.

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Widespread Occurrence of Tomato Geminiviruses in Brazil, Associated with the New Biotype of the Whitefly Vector. S. G. Ribeiro, Embrapa-Biotecnologia, Cx. Postal 2372, Brasília, DF, 70770-900, Brazil; A. C. de Ávila, and I. C. Bezerra, EMBRAPA-Hortaliças, Cx. Postal 218, Brasília, DF, 70359-970, Brazil; J. J. Fernandes, Dep. de Agronomia, UF Uberlândia, MG, 38400-902, Brazil; J. C. Faria, EMBRAPA-Arroz e Feijão, Cx. Postal 179, Goiânia, GO, 74100-000, Brazil; M. F. Lima, EMBRAPA-Semi-Árido, Cx. Postal 23, Petrolina, PE, 56300-000, Brazil; R. L. Gilbertson, Department of Plant Pathology, University of California, Davis, 95616; and E. Maciel-Zambolim and F. M. Zerbini, Dep. de Fitopatologia, UF Viçosa, MG, 36571-000, Brazil. Plant Dis. 82:830, 1998; published on-line as D-1998-0514-01N, 1998. Accepted for publication 12 May 1998.

Although tomato golden mosaic virus (TGMV) was reported in Brazil more than 20 years ago (3), tomato-infecting geminiviruses have not been of economic significance in the country until recently. However, a sharp increase in the incidence of geminivirus-like symptoms in tomatoes has been reported in several areas of Brazil since 1994. This has coincided with the appearance of the B biotype of *Bemisia tabaci,* which, as opposed to the A biotype, readily colonizes solanaceous plants (2). We have isolated geminiviruses from symptomatic tomato plants in the Federal District, in two different areas of the state of Minas Gerais, and in the state of Pernambuco. Tomato plants in these areas showed a variety of symptoms, including yellow mosaic, severe leaf distortion, downcupping, and epinasty. Whitefly infestation was high in all fields sampled, and in some fields, particularly in Pernambuco, incidence of virus-like symptoms was close to 100%, and no tomatoes of commercial value were harvested (1). Using primer pairs PAL1v1978/PAR1c496 and PCRc1/PBL1v2040 (4), DNA-A and -B fragments were polymerase chain reaction (PCR)-amplified from total DNA extracted from diseased plants, cloned, and sequenced. Sequence comparisons of the PCR fragments indicated the existence of at least six different geminiviruses. The nucleotide sequence homologies for DNA-A fragments ranged from 67 to 80% for the 5′ end of the *cp* gene, and from 44 to 80% for the 5′ end of the *rep* gene. Data base comparisons indicated the viruses are most closely related to TGMV, bean golden mosaic virus from Brazil (BGMV-Br), and tomato yellow vein streak virus (ToYVSV), although homologies were less than 80% for the fragments compared. A similar lack of a close relationship with each other and other geminiviruses was obtained with two DNA-B component PCR products compared, corresponding to the 5′ end of the BC1 open reading frame. Infectious, full-length genomic clones from the tomato viruses are being generated for biological and molecular characterization.

References: (1) I. C. Bezerra et al. Fitopatol. Bras. 22:331, 1997. (2) F. H. França et al., Ann. Soc. Entomol. Bras. 25:369, 1996. (3) J. C. Matyis et al. Summa Phytopathol. 1:267, 1975. (4) M. R. Rojas et al. Plant Dis. 77:340, 1993.

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