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First Report of *Soybean dwarf virus* in Soybean in Northern Illinois. T. Thekkeveetil, H. A. Hobbs, Y. Wang, and D. Kridelbaugh, Department of Crop Sciences, University of Illinois, Urbana 61801; J. Donnelly, Ag View FS, Inc., Princeton, IL 61356; and G. L. Hartman and L. L. Domier, United States Department of Agriculture, Agricultural Research Service, Urbana, IL 61801. Plant Dis. 91:1686, 2007; published online as doi:10.1094/PDIS-91-12-1686B. Accepted for publication 20 August 2007.

Soybean dwarf virus (SbDV), a member of the *Luteoviridae*, is transmitted persistently by colonizing aphids and causes significant yield losses in soybean (*Glycine max* L.) in Japan. In the United States, SbDV is endemic in red and white clover (*Trifolium pratense* L. and *T. repens* L.) (1,3). Even so, SbDV has been detected in soybean only in Virginia (2) and Wisconsin (4). A study conducted in Illinois during 2001 and 2002 detected SbDV in clover but not soybean (3). During August of 2006, two surveys for virus diseases in soybean were conducted in Illinois. In the first survey, 30 soybean leaf samples were collected without regard for symptoms from each of 10 fields in each of five northern Illinois counties (Carroll, Jo Daviess, Ogle, Stephenson, and Winnebago). In the second survey, 10 random soybean leaf samples and 10 samples with virus-like symptoms were collected from each of 30 soybean rust sentinel plots spread throughout Illinois. Total RNA was extracted from pools of 90 to 100 plants and analyzed by quantitative real-time reverse transcriptase (QRT)-PCR using a fluorescently labeled minor groove binding probe (VIC-5(prime)-AGCATATCCAAAGACGC-3(prime)-MGBNFQ, nt 2358-2374) and flanking primers (5(prime)-TGGCTATTATAGAATGGTGCGTAAAC-3(prime), nt 2327-2351; and 5(prime)-GCCATGGAAATGAGGGAATG-3(prime), nt 2395-2376). From the first survey, pools from Carroll, Jo Daviess, and Ogle were positive for SbDV. Analysis of individual leaf samples from positive pools by double-antibody sandwich-ELISA (Agdia, Elkhart, IN) showed that one sample in each county was positive for SbDV. On the basis of the number of randomly sampled plants, the incidence of SbDV infection in northern Illinois was approximately 0.3%. In the second survey, SbDV was detected in one pool containing symptomatic plants from five soybean rust sentinel plots. Further QRT-PCR analysis showed that the sentinel plot in Bureau County was positive for SbDV. Because of the sampling protocols used, it was not possible to determine symptom phenotypes of SbDV-positive samples. Sequence analysis of the combined coat protein (CP) and readthrough domain (RTD) encoding region (nt 3019-5094) of SbDV isolates from Bureau (GenBank Accession No. EU095847) and Carroll (GenBank Accession No. EU095846) counties showed that the predicted amino acid sequences were 96 and 95% identical to a Japanese dwarfing isolate of SbDV (GenBank Accession No. AB038150), respectively. The predicted CP amino acid sequences of the Illinois isolates were identical and RTD amino acid sequences differed at six positions. To our knowledge, this is the first report of infection of soybean plants in Illinois with SbDV.

References: (1) V. D. Damsteegt et al. Phytopathology 89:374, 1999. (2) A.

Fayad et al. Phytopathology (Abstr.) 90(suppl.):S132, 2000. (3) B. Harrison et al. Plant Dis. 89:28, 2005. (4) A. Phibbs et al. Plant Dis. 88:1285, 2004.

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