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First Report of Sudden Death Syndrome of Soybean Caused by *Fusarium solani* f. sp. *glycines* in Nebraska

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Disease Notes

First Report of Sudden Death Syndrome of Soybean Caused by *Fusarium solani* f. sp. *glycines* in Nebraska

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During August of 2004, soybean (*Glycine max* (L.) Merr.) plants exhibiting symptoms typical of sudden death syndrome (SDS) caused by *Fusarium solani* (Mart.) Sacc. f. sp. *glycines* (= *Fusarium virguliforme* Akoi, O'Donnell, Homma, & Lattanzi) (1) were observed in Nemaha and Pierce counties in eastern Nebraska. Leaf symptoms ranged from small chlorotic spots to prominent interveinal necrosis on plants at R5-R6 growth stages. Taproots of symptomatic plants were plated on potato dextrose agar (PDA) amended with hymexazol, ampicillin, and rifampicin (HAR). Resulting fungal isolates grew slowly and developed masses of blue macroconidia, characteristic of *F. solani* f. sp. *glycines*. Sorghum seed infested with the isolates were placed 1.5 cm below soybean seeds of the susceptible cv. Sloan planted in clay pots (3). Noninfested sorghum seed and sorghum seed infested with *F. oxysporum* were controls. Plants were maintained for 32 days at 27.5 ± 2.5°C in the greenhouse. Small cholorotic spots were observed on leaves of *F. solani* f. sp. *glycines*-inoculated plants within 21 days followed by the development of interveinal chlorosis. Roots of symptomatic plants were plated on PDA with HAR and *F. solani* f. sp. *glycines* was recovered. Identification of the fungal cultures was further confirmed as *F. solani* f. sp. *glycines* by a real-time quantitative polymerase chain reaction (qPCR) assay described by Gao et al. (2). During 2005, SDS symptoms were also reported in early planted soybeans from Jefferson and Seward counties and the presence of SDS was confirmed by qPCR. The confirmation of SDS at multiple locations suggests that the pathogen is widely distributed in the eastern one-third of Nebraska. SDS could be a serious threat to soybean production in this area since spring weather conditions favor SDS infection and many producers plant soybean early in cool soils.

References:

(1) T. Akoi et al. Mycologia 95:660, 2003.

(2) X. Gao et al. Plant Dis. 88:1372, 2004.

(3) K. W. Roy et al. Plant Dis. 81:259, 1997.