

SOYBEAN SUDDEN DEATH SYNDROME: PLANT INFECTION AND MANAGEMENT¹

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Soybean sudden death syndrome (SDS), caused by *Fusarium virguliforme*, is one of the most yield limiting diseases in the US, and effective disease management options are limited. We developed a real-time quantitative PCR assay for the diagnosis and quantification of *F. virguliforme*. Using this assay we investigated the *F. virguliforme* infection process of four soybean cultivars with differing resistance to the foliar SDS leaf scorch symptoms. We found that the quantity of *F. virguliforme* did not differ between the varieties as expected, indicating that leaf scorch resistance is separate to root infection resistance. Interestingly the ratio of *F. virguliforme* to soybean increased sharply just before the R5 growth stage, around the time of foliar disease onset. The findings also demonstrate that use of a soybean variety with resistance to the SDS foliar scorch will not necessarily reduce the subsequent amount of *F. virguliforme* in the soil.

A trial was also conducted to investigate the effect of the Bayer CropScience seed treatment ILeVO (Fluopyram) on the quantity of *F. virguliforme* in the soybean root system over the course of a season. The ILeVO treatment resulted in significantly less *F. virguliforme* accumulation in the soybean root system which was noted at the R3 growth stage.

References

Wang J., Jacobs, J.L., Byrne, J.M., Chilvers, M.I. *In Press*. Improved diagnoses and quantification of *Fusarium virguliforme*, causal agent of soybean sudden death syndrome. *Phytopathology*
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