

Reaction of oat germplasm to *Drechslera avenae* leaf spot in greenhouse in South Dakota

Mohammed L. Abdullah, Emmanuel Byamukama, Melanie Caffe-Treml, and Shaukat Ali
Agronomy, Horticulture and Plant Science Department, Brookings, SD57006

Drechslera avenae is a foliar pathogen which causes leaf spots (blotch) of oats resulting in significant yield losses. *D. avenae* leaf spot has been reported in South Dakota. However, information on the reaction of commercial cultivars to *D. avenae* leaf spot is not available. Deployment of *D. avenae* leaf spot resistant cultivars is durable and environmentally friendly approach to disease management. The identification of sources of resistance is the first step in developing oat cultivars resistant to this pathogen. In this study, we evaluated the reaction of 147 diverse oat genotypes from National Plant Germplasm System including commercial cultivars grown in South Dakota against infection with *D. avenae* in the greenhouse. Seedlings of all 147 genotypes were raised in containers. Nine seedlings of each genotype at 2-leaf stage were inoculated with *D. avenae* isolate “SD1”. The seedlings were placed in the humidity chamber at 100% humidity for 24 hours for promoting infection and then moved to a greenhouse bench for 10 days until rated for their disease reaction. The evaluated oat genotypes exhibited reaction to leaf spot ranging from susceptible (55%), moderately susceptible (22%), moderately resistant (17%), and resistant (6%). The resistant genotypes can be used as sources of resistance for developing new oat cultivars resistant to *D. avenae* leaf spot. The resistant genotypes will also be evaluated against *Stagonospora avenea* leaf blotch, another leaf spot disease that develops on oats in South Dakota.