

BROWN PATCH AND PYTHIUM DISEASE RESISTANCE  
IN BENTGRASS AND ZOYSIAGRASS

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Progress during the period from May to November 1988 has followed several lines of investigation. The fungal culture collections for Rhizoctonia spp. and Pythium spp. attacking turfgrasses now number 70 and 41 isolates, respectively. The most virulent strains of these fungi are currently being used for disease resistance screening studies with experimental lines of bentgrass and zoysiagrass. Cultures for both of the fungal collections were placed in long-term storage vials which are being maintained at temperatures favoring their extended survival.

The past six months of pathology investigations have focused on inoculation studies with members of the elite collection of bentgrass germ plasm lines located at Dallas. Results of these investigations have been very worthwhile. Inoculations with Pythium spp. were conducted in the field, greenhouse and laboratory utilizing four of the most virulent isolates from the USGA culture collection. Weather conditions were not favorable for successful field inoculations; however, both laboratory and greenhouse trials with these pathogens demonstrated experimental germ plasm lines with high degrees of tolerance to foliar blighting, when compared to the commercial variety "Pencross" which was easily killed.

Results of inoculation trials with four virulent isolates of Rhizoctonia spp. on a similar collection of bentgrass experimental lines also demonstrated resistance to foliar blighting compared to the variety "Pencross." Rhizoctonia isolates used in the test were very aggressive foliar blighting pathogens. Less than 5% of the experimental germ plasm lines tested demonstrated resistance to all four pathogen isolates.

Field observations of diseases on zoysiagrass during the past summer and fall included the dollar spot and Rhizoctonia brown patch diseases. The reaction of varieties in field plantings to the dollar spot disease were generally the same as those noted during 1987. The fine-leaved zoysiagrass varieties were more susceptible to dollar spot. Observations of Rhizoctonia brown patch on replicated nursery plantings of ten zoysiagrass selections also indicated that one experimental line, and the commercial variety "Meyer," were more susceptible to the disease than the other experimental lines under evaluation.