

BRANTNER, JASON R. and CAROL E. WINDELS, Northwest Experiment Station, University of Minnesota, Crookston, MN 56716. Variability in sensitivity to metalaxyl and control of *Pythium* spp. on sugarbeet.

Pythium spp. cause seed rot and damping-off of sugarbeet in Minnesota and North Dakota. Seed treatment with Apron (metalaxyl) has been used successfully to control *Pythium*, but occasionally producers notice erratic, uneven stands. Objectives of this study were to evaluate isolates of *Pythium* spp. (cultured from dying sugarbeet seedlings in Minnesota and North Dakota) for sensitivity to metalaxyl (Apron 50WP), pathogenicity to sugarbeet, and control by metalaxyl seed treatment. Isolates of *Pythium* spp. (104 total) included *P. ultimum* var. *sporangiiferum* (76), *P. aphanidermatum* (21), *P. irregulare* (4), and *P. acanthicum* (3). Sensitivity to metalaxyl was determined by radial growth on corn meal agar amended with 0, 0.01, 0.1, 1, 10, and 100 $\mu\text{g/ml}$ a.i. after 48 hr in the dark at 20-22 C. EC_{50} 's were estimated from fitted regression lines of logit-transformed percent inhibition plotted against log-transformed fungicide concentration. Variation among isolates was significant ($P=0.05$) within and between species. EC_{50} means were 0.04-1.44, 0.08-1.00, 0.12-0.30, and 0.98-3.52 $\mu\text{g/ml}$ for *P. ultimum*, *P. irregulare*, *P. acanthicum*, and *P. aphanidermatum*, respectively. Pathogenicity tests in *Pythium*-inoculated soil showed that 98 of 104 isolates significantly decreased final plant stands compared to non-inoculated controls, and 82 of 104 isolates resulted in final plant stands below 10%. Pathogenicity to sugarbeet and sensitivity to metalaxyl were not correlated ($r = 0.102$). All isolates tested were controlled by a standard metalaxyl seed treatment, but some less sensitive isolates resulted in a significantly ($P=0.05$) decreased level of control.