

WINDELS*, CAROL E. and JASON R. BRANTNER. University of Minnesota, Northwest Research and Outreach Center, Crookston, MN 56716. **Oospore density effects of *Aphanomyces cochlioides* on sugarbeet varieties differing in resistance.**

Previous experiments lead us to conclude that partial resistance of sugarbeet seedlings to *A. cochlioides* was not demonstrated over a wide range of oospore concentrations (1999, *Phytopathology* 95:S104; 1999 Minnesota-North Dakota Sugarbeet Res. Ext. Rept.30:248-256). Shortly after these reports were published, it was found that the commercial variety selected as "susceptible" had a level of resistance to *A. cochlioides* comparable to the partially resistant variety. Trials were repeated and included three commercial varieties (one recognized as susceptible [S] and the two partially resistant [PR]) we had tested in previous studies. Seed was sown in a natural field soil infested with 0, 1, 10, 25, 50 and 100 oospores/g dry weight; soil was kept moist at 18-20°C for 1 wk and then at 25-27°C for 3 wk. Data were collected on plant stand at least twice weekly after emergence and a root rot index (RRI = 0-100 scale, 0 = all plants healthy; 100 = all plants dead) at 4 wk after planting. There were no oospore concentration by variety interactions for percent final stand. The S variety had a significantly ($P=0.05$) lower final stand (51%) compared to the two PR varieties (final stand = 60 and 61%). Final stands for 0, 1, 10, 25, 50 and 100 oospores/g soil were 100, 97, 72, 37, 28 and 9%, respectively. There were significant interactions between variety and oospore concentration at 25 oospores/g of soil (S variety had a RRI of 86 and PR varieties had RRI's of 64 and 74) and at 100 oospores/g (S variety had a RRI of 100 and PR varieties had RRI's of 91 and 95). Thus, partial resistance of seedlings to *A. cochlioides* is discernable, but not consistent across a range of oospore concentrations.