

Bredhoeft, Mark W.\*, and Steve Roehl, Southern Minnesota Beet Sugar Cooperative, 83550 Co. Rd. 21, Renville, MN 56284. **Tachigaren influence over time on *Aphanomyces cochlioides* presence in soil and the effect on sugar beet production.**

*A. cochlioides* has posed a significant production problem for the sugar beet industry. Tachigaren as a seed treatment has shown to reduce the influence of *A. cochlioides* on sugar beet production. The objectives of this study were 1) Study the influence of *A. cochlioides* over time in soil subjected to consecutive years of sugar beet production 2) Investigate the influence of Tachigaren at 0, 45, and 75 grams per unit of seed (100,000 seeds) on yield and quality. The experiment was established near Buffalo Lake and Clara City, Minnesota in the spring of 2000. Experimental design was a randomized complete block design with 4 replications. Soil barriers (fence) were installed between replications and experimental units after planting to prevent movement of soil across treatments. Presence of *A. cochlioides* in the soil was determined by root rot index (RRI) conducted by the Plant Disease Clinic at the University of Minnesota – Crookston. The initial RRI indicated a very low levels at both locations. RRI after one year of sugar beet production increased to high levels at the Buffalo Lake, MN site and remained low at the Clara City, MN site. RRI levels at the Buffalo Lake, MN site indicated a suppression of *A. cochlioides* accrual in the soil that was directly related to Tachigaren rate. The very low level of *A. cochlioides* at Gluek, MN site did not allow for a significant change in the presence of the disease at this site. Yield factors were non-homogeneous across years, but were homogeneous between locations within years. When considering the sites combined within years, yield and recoverable sugar per acre were significantly higher with Tachigaren applied to the seed at the 45 and 75-gram compared to 0 gram Tachigaren rate.