Evaluating soybean cyst nematode seed treatments in populations with high and low PI88788 female indices

Seyer, B., Eichenburch, S., Barizon, J., Biggs, M., and Bissonnette, K.M.

Soybean cyst nematode (SCN) is the most economically important soybean parasite in the United States and Canada, causing yield losses exceeding $1.2 billion annually. SCN management is difficult as eggs can persist in soil for 10+ years and a common row crop rotation is 2-4 years. The SCN life cycle takes about 30 days to complete, allowing for up to six generations of SCN in a single growing season in Missouri. Nematode-protectant treatments, available since 2009, are a viable option for farmers attempting to combat SCN. For this study, six nematode-protectant seed treatments were evaluated in a greenhouse bioassay to determine their effectiveness in reducing SCN reproduction after 30 days. The same variety with the PI 88788 source of resistance was used for all treatments and was compared to a base fungicide plus insecticide treatment and a non-treated SCN susceptible line. Each treatment was tested on an HG type 2 SCN population with one of two female indices (FI) on PI 88788, high (65% FI) or low (18% FI), as indicated by an HG Type test. Treatments were replicated six times and two consecutive 30-day growth cycles were completed in the greenhouse. After 30 days, females were blasted from roots and counted to determine number of females per gram of root for each treatment as compared to the susceptible check. Results of this research are forthcoming and will provide a source of information about seed treatment effectiveness at different female index levels.