

RESISTANCE IDENTIFICATION FOR SOYBEAN CYST NEMATODE: A COMPARISON OF RATING METHOD AND INOCULUM LEVELS. **Donald, P. A.,¹ and L. D. Young²**. USDA ARS Crop Genetics and Production Research Unit, ¹Jackson, TN 38301; ²Stoneville, MS 38776.

Soybean cyst nematode resistance in soybean germplasm is an important tool for management of the nematode. However, evaluation methods to identify resistance have not been standardized. Two techniques were compared to evaluate plant resistance using races 3 and 14 under greenhouse test using an inoculum level of 1,000 eggs/ml. A visual rating (VR) with five numeric categories was compared to microscopic enumeration of cysts on the roots and computation of a female index (FI) which has been suggested for use in four resistance categories. The study consisted of 673 entries from the Tennessee State Soybean Variety Test over three years. The VR had larger F values and lower coefficient of variation than the FI. There is a significant increase in the amount of time required to collect data for the FI compared to the VR however environmental conditions can greatly affect visualization of cysts in the VR method. Two inoculum levels, 1,000 and 4,000 eggs/ml, were tested with both races on the seven indicator lines plus susceptible check for the HG Type Test. No significant differences were seen in the FI at the two inoculum levels for race 3. The race 14 standard deviation FI was higher at the lower inoculum level than the higher inoculum level and there were significant differences between indicator lines at the higher inoculum level. The VR system is a less time consuming procedure than the FI in identifying resistance to soybean cyst nematode. Inoculum level can affect identification of resistant soybean lines in certain races.

SUPPRESSION OF *DIAPREPES ABBREVIATUS* IN POTTED CITRUS BY COMBINATIONS OF ENTOMOPATHOGENIC NEMATODES WITH DIFFERENT LIFESPANS. **El-Borai, F. E., and L. W. Duncan**. University of Florida, Citrus Research and Education Center, Lake Alfred, Florida 33850.

Two experiments were conducted to test the hypothesis that augmenting EPN communities with short-lived EPN species can cause an eventual reduction in biological control of insect larvae by partially displacing longer lived EPN species. Pots containing citrus seedlings growing in pasteurized soil mix (50:50 v:v Candler fine sand and shredded Canadian sphagnum peat moss) were infested with factorial combinations of *Steinernema riobrave* (Sr; short-lived) and *S. diaprepesi* (Sd; long-lived) in both experiments, and with *Heterorhabditis zealandica* (Hz; short-lived) alone or in combination with Sr or Sd in the second experiment. Larvae of the weevil *Diaprepes abbreviatus* were added to the pots periodically and plants were grown for up to 8.5 months in the first experiment and 13.5 months in the second. No interactions ($P \geq 0.05$) occurred between any of the treatments. The growth and survival of the citrus plants and the suppression of weevil larvae were greatest ($P \leq 0.05$) in all treatment combinations that contained Sd and intermediate for all Sr treatment combinations that lacked Sd. Augmenting pots with Hz did not significantly affect plant growth or insect suppression. *S. diaprepesi* was the only EPN species recovered by baiting soil with insect larvae at the end of each experiment. Neither experiment supported our hypothesis. Accordingly, we speculate that reported temporary reductions in EPN prevalence in citrus orchards following EPN augmentation is likely the result of population responses by EPN antagonists.

FIELD AND GREENHOUSE EVALUATIONS OF SELECTED FUNGICIDES ON DEVELOPMENT OF SOYBEAN CYST NEMATODE. **Faghihi, J.,¹ R. A. Vierling,² and V. R. Ferris¹**. ¹Department of Entomology, Purdue University, West Lafayette, IN 47907, ²Indiana Crop Improvement Association and Department of Agronomy, Purdue University, West Lafayette, IN 47907.

Greenhouse screening of soybean seedlings with soybean cyst nematodes (SCN) takes several months and results can be confounded by fungal infection of the seedlings. We have found that *Rhizoctonia solani* infection has been a major problem and we had to resort to the use of fungicides. We assessed the effectiveness of several fungicides to control *R. solani*, and observed their effect on SCN. We discovered that an unusually low number of cysts developed on susceptible plants treated with Cleary 3336F fungicide in the greenhouse. Repeated greenhouse studies revealed the effectiveness of this fungicide as a possible management tool for SCN. Field studies in 2003 and 2004 showed an increase in yield in plots treated with Cleary 3336F. No yield increase was observed in 2005 field studies. The final population of SCN was not reduced by Cleary 3336F in any of the field tests.

ENHANCING *STEINERNEMA* SPP. SUPPRESSION OF *MELOIDOGYNE JAVANICA*. **Fallon, D. J.,¹ H. K. Kaya,² and B. S. Sipes.¹** ¹Department of Plant and Environmental Protection Sciences, University of Hawaii at Manoa, Honolulu, HI 96822; ²Department of Nematology, University of California, Davis, CA 95616.

Consistent control of plant-parasitic nematodes by biological agents has been difficult to achieve. Entomopathogenic nematodes have demonstrated varying degrees of success in suppressing a wide range of plant-parasitic nematode species in laboratory, greenhouse, and field studies. *Steinernema feltiae* MG-14- and *S. glaseri* NJ-infected *Galleria mellonella* were tested for their efficacy against *Meloidogyne javanica*. *Steinernema feltiae*- and *S. glaseri*-infected cadavers significantly reduced *M. javanica* egg production in cowpea after 35 days. In combination with the nematode trapping fungi *Arthrobotrys oligospora*, a significant interaction was observed between the nematode trapping fungi and nematode-infected cadavers. Fewer eggs were recovered from *M. javanica* infested plants treated with *S. feltiae*-infected cadavers in