



Soy2-2011 - Evaluation of Nematicides for Soybean Cyst Nematode Management

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Evaluation of Nematicides for Soybean Cyst Nematode Management

Purpose:

The soybean cyst nematode (SCN) heterodera glycines (HG) is the most important yield-reducing pathogen throughout Ontario and the US. In order to minimize the impact of SCN and educate Ontario soybean producers and the soybean industry/advisors about



this very destructive soybean disease OMAFRA and AAFC are participating in a North Central Soybean Research Program Project in partnership with the Grain Farmers of Ontario. The project's aim is to improve SCN Management in the northern soybean production areas. This proposal aims to investigate new objectives targeting further reductions in losses and improved SCN management through the evaluations of new nematicidal seed treatments and how these products affect SCN populations and soybean

yields. Another direct result of this project will be the production of SCN educational materials in conjunction with collaborating north central U.S. states.

Methods:

The 2011 growing season was the first year of this new GFO supported three-year project. Replicated on-farm trials were established in two or more grower fields in Ontario (Highgate and Harrow) as well as cooperating U.S. States (Iowa, Nebraska, Michigan, Ohio, Indiana, Illinois, Minnesota, Missouri, North Dakota, Wisconsin, Kansas and South Dakota). Seed treatment nematicides used in this study included Votivo (Bayer CropScience), Avicta (Syngenta) and N-Hibit (Plant Health Care). Varieties used in this study included SCN resistant varieties commonly used for managing SCN and a popular susceptible variety. Data collected included stand counts, disease ratings, yield, seed quality, SCN levels, etc.

The 7 treatments included were:

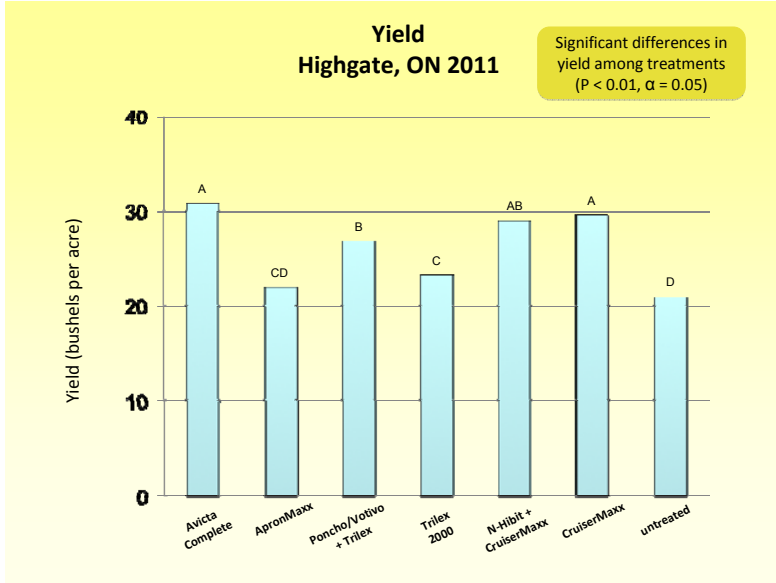
- 1) Avicta Complete® Beans,
- 2) Apron Maxx
- 3) Poncho® (500) / VOTIVO® + Trilex 2000
- 4) Trilex 2000
- 5) N-Hibit® + Cruiser Maxx®
- 6) Cruiser Maxx®
- 7) Untreated

Twenty soil cores were collected at planting and at harvest from each plot in order to best represent the SCN population density (SCN egg density) at each location. A modified SCN HG type (race) test was conducted on the overall SCN population in each study location. The HG type test included only HG type differential soybean lines (SCN resistance sources) that are used in SCN-resistant soybean varieties available in the north central United States and Ontario (namely PI 88788, PI 548402, PI 437654, PI 209332). All HG typing was conducted through Dr. Terry Niblack's lab (Extension

Nematologist at Ohio State University). In addition, all soybean varieties used for these projects were evaluated for SCN reproduction in the greenhouse.

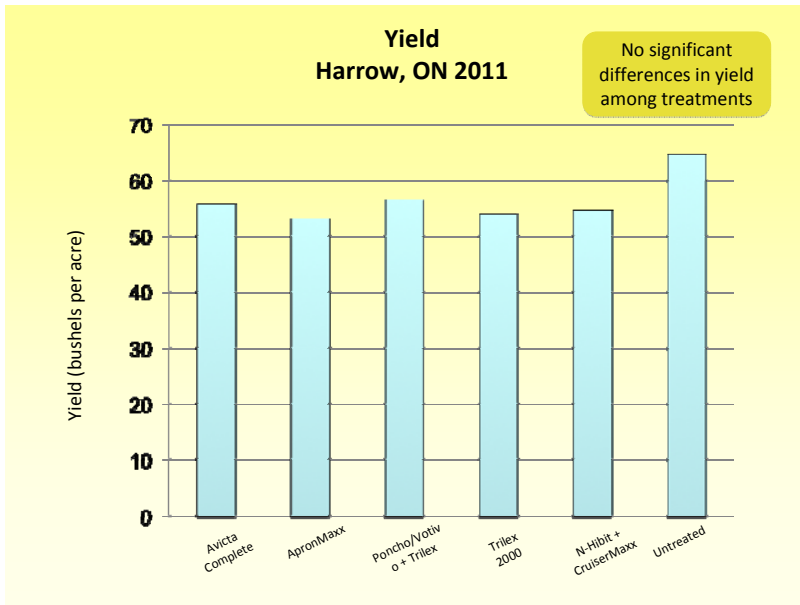
Results and Summary:

Significant differences between treatments were observed in Highgate but not the



Harrow trial location in 2011. In Highgate all treatments yielded significantly better than the untreated controls. However, the products containing a combination of active ingredients (nematicide, fungicide and insecticides) were significantly better than fungicide alone. Although the SCN population level data was not available at time of printing this report, other Ontario field evaluation trials have shown a decrease in SCN

levels associated with seed treatment nematicides (Votivo).



Next Steps:

This multi-year international project will continue in 2012 and 2013 through funding by the Grain Farmers of Ontario as part of an international partnership with the North Central Soybean Research Program which is funded through the U.S. soybean check-off. The information generated from this project is being merged with the US data to help generate a consistent management

strategy for SCN and provide new technologies for effective SCN management.

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