

2018 NemaStrike™ seed treatment in corn

Background:

Random sampling across the state has found that 80 percent of Iowa corn fields are infected with at least one of several species of parasitic nematodes. However, little is known about their severity or impact on corn yield. Tioxazafen, which is branded as NemaStrike™ Technology, is chemistry that claims broad-spectrum control of plant parasitic nematodes and consistent yield protection in corn, soybeans and cotton. Three years of field trial testing by Monsanto (now Bayer) product development showed significant yield advantages can be obtained by protection with NemaStrike.

Protocol:

Seed of a single hybrid and lot was provided to growers, half treated with Acceleron Elite seed treatment and half with Acceleron Elite seed treatment with NemaStrike Technology. Growers were asked to plant alternating strips with and without NemaStrike across their field, typically by loading half of their planter with each product. The result was a minimum of four alternating replications of each of the two seed treatments. All other inputs were required to remain constant across the trial area.

Yield monitor data from the trials was cleaned according to industry standards and subjected to a multi-location mixed model analysis. Two planned sites have yet to report results.

Outcome:

All sites were sampled for corn nematodes in June and analyzed by Iowa State University (ISU). According to ISU's interpretation, none of the locations were at an economic threshold for corn nematodes.

On average, the yield differences between treatments were quite small. The most responsive site was ST2018IA0120 which showed a NemaStrike yield advantage of 8 bushels/acre. Nematode sampling results were not available for this location.

The On-Farm Network is very appreciative of the collaboration with Bayer Crop Sciences to make this independent trialing possible. These trials will continue in 2019.

Table 1. Comparisons of NemaStrike and no-NemaStrike through on-farm strip trials.

Location	Nematode Threshold	NemaStrike	No-NemaStrike	Difference	Pr>t
		-----Yield (Bu/A)-----			
ST2018IA0039	Below	248.8	251.8	-3.0	0.56
ST2018IA0040	Below	249.9	253.4	-3.5	0.41
ST2018IA0049	Below	164.8	164.8	0	0.99
ST2018IA0060	Below	224.1	222.2	1.9	0.82
ST2018IA0070	Below	203.2	201.1	2.1	0.56
ST2018IA0071	Below	147.4	146.9	0.5	0.92
ST2018IA0120	Below	228.8	220.5	8.3	0.14
Average		209.6	208.7	0.9	0.65

¹Pr>t is an estimate of the statistical significance of the difference.
 Values above 0.15 are likely differences that would be observed by chance alone.