

Evaluation of Soybean Varieties Resistant to Soybean Cyst Nematode in Iowa—2020



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Summary

- Nine experiments were conducted in 2020, three across northern, three across central, and three across southern Iowa.
- The same varieties were studied in all three experiments across northern, central, or southern Iowa, but varieties varied from north to central to south.
- There were 69 SCN-resistant soybean varieties and 3 susceptible varieties in each experiment. Overall, the resistant varieties were of 19 different brands.
- Most varieties contained SCN resistance from PI 88788. Eight varieties in the northern experiments, seven in the central experiments, and one in the southern experiments had Peking SCN resistance. One variety in the northern and central experiments had PI 89772 SCN resistance.
- Initial SCN numbers ranged from 494 eggs per 100 cm³ of soil near Oelwein (northeast) to 2,403 eggs per 100 cm³ of soil near Huxley (central).
- The SCN populations in all fields in which experiments were conducted had greater than 10% reproduction on PI 88788 (HG Type 2). Two locations also had reproduction on Peking that was greater than or equal to 10%, making them an HG Type 1.2; Manly (14% on Peking) and Huxley (22% on Peking).
- Maximum yields of individual SCN-resistant varieties ranged from 53 bushels per acre near Huxley (central) to 80 bushels per acre near Manly (northcentral) and Moorhead (westcentral).
- The largest overall season-long increases in SCN numbers were in experiments near Glenwood (southwest), Huxley (central), and Oelwein (northeast).
- Results indicate a range of yield performance of SCN-resistant varieties and high yields of some varieties with Peking SCN resistance.
- Farmers should grow soybean varieties with Peking and PI 89772 SCN resistance in rotation with high-yielding PI 88788 SCN-resistant varieties that allow low SCN reproduction.

Introduction

Use of resistant soybean varieties is a very effective strategy for managing soybean cyst nematode (SCN), and numerous SCN-resistant soybean varieties are available for Iowa soybean farmers. Each year, SCN-resistant soybean varieties are evaluated in SCN-infested fields throughout Iowa by Iowa State University personnel. The research described in this report was performed to assess the agronomic performance of maturity group (MG) I, II, and III SCN-resistant soybean varieties and to determine the effects of the varieties on SCN numbers or population densities.

Materials and Methods

SCN-resistant soybeans were studied in northern, central, and southern Iowa based upon maturity group. The northern trials were located near Laurens (northwest Iowa), Manly (north central Iowa) and Oelwein (northeast Iowa). The central trials were located near Moorhead (west central Iowa), Huxley (central Iowa), and Urbana (east central Iowa). The southern trials were located near Glenwood (southwest Iowa), Leighton (south central Iowa), and Fruitland (southeast Iowa).

Location-specific details.

Location	Initial SCN Population (eggs / 100 cc soil)	HG Type ¹	Planting Date	Harvest Date
Laurens (NW)	1,632	2-	April 24 th	October 2 nd
Manly (NC)	1,618	1.2-	May 1 st	October 14 th
Oelwein (NE)	494	2-	April 18 th	September 30 th
Moorhead (WC)	1,572	2-	April 22 nd	October 5 th
Huxley (C)	2,403	1.2-	April 27 th	October 9 th
Urbana (EC)	790	2-	May 4 th	October 12 th
Glenwood (SW)	1,178	2-	April 20 th	October 6 th
Leighton (SC)	1,081	2-	April 30 th	October 7 th
Fruitland (SE)	1,684	2-	May 8 th	October 13 th

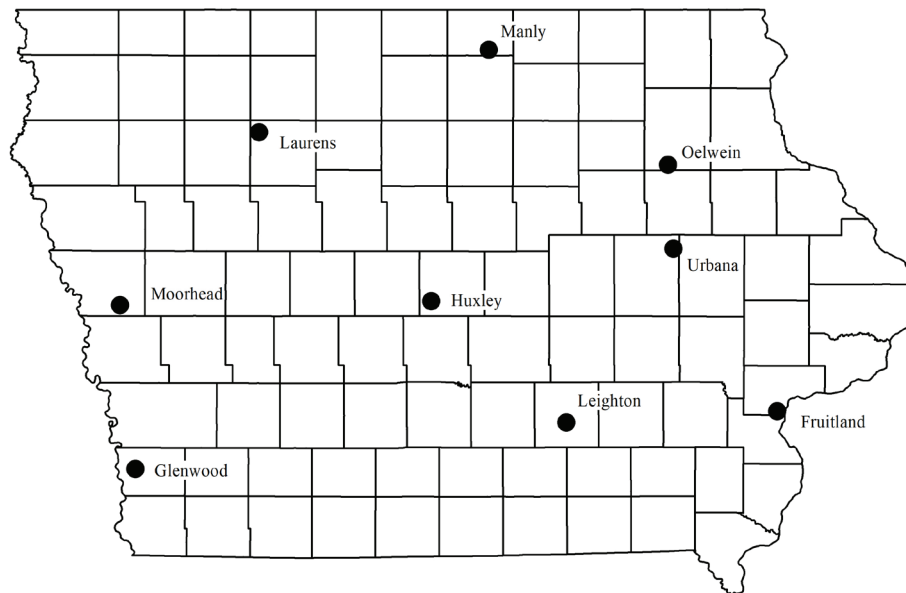
¹ In the SCN HG type test results, “1” indicates ≥10% reproduction on Peking (PI 548402), and “2” indicates ≥10% reproduction on PI 88788. “-” indicates an incomplete HG type test; populations were tested only on Peking, PI 88788, PI 90763, and PI 437654.

SCN-susceptible varieties also were planted in the experiments for comparison purposes. All plots were four 17-foot-long rows spaced 30 inches apart and were planted at 8 seeds per foot (140,000 seeds per acre), with four replications per variety. Seed companies were encouraged to treat their seed with fungicide and insecticide. Seeds that were received untreated were treated with CruiserMaxx® Vibrance® by Iowa State University personnel. A complete list of the seed treatments used on the varieties tested is included at the end of the report. Pre-plant herbicides Authority® Supreme and pendimethalin were applied to each location. All locations were sprayed with Flexstar®, FirstRate®, Warrant® and Select Max® to control weeds during the growing season. The Laurens, Moorhead, and Huxley locations were planted using “no-till” methods. At all other locations, the seed bed was tilled prior to planting.

At growth stage R6 all locations were scouted for foliar symptoms of sudden death syndrome (SDS), with no significant foliar symptoms observed. All plots were end trimmed to a length of 14 feet during September. For each location, the center two rows of each four-row plot were harvested with a plot combine, total seed weight per plot and seed moisture were determined, and total plot seed weights subsequently were converted to bushels per acre. Resistant varieties and susceptible check varieties are grouped separately and are listed in the report in decreasing order of yield.

At the beginning of the growing season, plots were sampled for the presence of SCN. Soil samples, consisting of 10 one-inch-diameter, six- to eight-inch-deep soil cores were collected from the center 14 feet of the center two rows of each plot immediately after planting. SCN cysts were extracted from each soil

sample, and SCN eggs were extracted from the cysts and counted. SCN egg population densities were also determined for each plot at the end of the growing season in an identical manner.



Data Presentation

In the report, soybean yield and SCN reproduction are displayed graphically in addition to numerically in the tables. Yield is represented by the length of the green bars. SCN reproduction is represented by the length of the blue bars. SCN reproduction was determined by calculating the reproductive factor (RF) for each variety. RF is calculated by dividing the average final SCN population density by the average initial SCN population density for each variety. If a variety has a RF value of 5.0, the SCN population density for those plots was 5 times greater at harvest than it was at planting. A RF value of 0.5 means the SCN population density for those plots at harvest was one half the population density at planting. The RF value is location specific and may vary substantially under different environmental conditions, soil types, and nematode populations.

Acknowledgments











































Appreciation is expressed to Joe Pohlman of Laurens, Jess and Randy Lutz of Manly, Alex and Mike Recker of Arlington, John Melby of Moorhead, Mike Helland of Huxley, Clint Franck of Urbana, Matt Biermann of Glenwood, Mark Groenendyk of Leighton, and Ron Shepard of Fruitland for use of land for some of the experiments.

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Table 1. Laurens (NW Iowa).

Brand	Variety	Relative Maturity	Resistance	Herbicide Technology ¹	SCN # (eggs/100cc) ²	SCN RF ³	Yield (bu/acre)
Federal Hybrids	F2290N	2.2	Peking	RR2X	600	0.4	70.0
Beck	2337X2	2.3	PI 88788	RR2X	5,850	3.4	66.8
Hoegemeyer HPT	1960 NX	1.9	Peking	RR2X	550	0.3	64.3
Asgrow	AG20X9	2.0	PI 88788	RR2X	4,575	2.5	64.2
LG Seeds	LGS2417RX	2.4	PI 88788	RR2X	5,825	4.7	63.9
Beck	2420E3	2.4	PI 88788	E3	4,075	3.5	63.8
Asgrow	AG22X9	2.2	PI 88788	RR2X	4,325	1.6	63.6
Stine	21EA32	2.1	PI 88788	E3	2,950	6.8	63.5
Pioneer	P21A28X	2.1	Peking	RR2X	550	0.3	63.4
NuTech Seed	24N04E	2.4	Peking	E3	2,425	1.3	62.2
Merschman	Osage 2025E	2.5	Peking	E3	1,150	0.7	61.9
Federal Hybrids	F2380N	2.3	PI 88788	RR2X	850	0.7	61.6
NK	S16-K2X	1.6	PI 88788	RR2X	2,450	0.9	61.2
Four Star Seed	3X221	2.2	PI 88788	RR2X	4,175	3.7	60.4
Legacy Seeds	LS212-20	2.1	PI 88788	E3	2,750	1.1	60.4
LG Seeds	LGS2444RX	2.4	PI 88788	RR2X	4,725	3.4	60.4
LG Seeds	LGS2007RX	2.0	PI 88788	RR2X	3,025	1.7	60.0
FS HiSOY	HS 23X70	2.3	Peking	RR2X	4,550	4.4	59.7
Legacy Seeds	LS252-20	2.5	PI 88788	E3	4,075	2.7	59.7
FS HiSOY	HS 21X90	2.1	PI 88788	RR2X	3,325	1.8	59.5
Legacy Seeds	LS192-20	1.9	PI 88788	E3	1,800	1.5	59.5
NK	S23-G5X	2.3	PI 89772	RR2X	2,575	3.0	59.3
Asgrow	AG23X9	2.3	Peking	RR2X	725	0.3	59.2
LATHAM	L 2638 E3	2.6	PI 88788	E3	4,675	2.0	58.8
Merschman	Mohave 2123LLGT27	2.3	PI 88788	LLGT27	8,200	3.8	58.8
NK	S17-E3	1.7	PI 88788	E3	2,975	3.3	58.8
NuTech Seed	22N02E	2.2	PI 88788	E3	2,200	1.3	58.8
Hoegemeyer HPT	2480 E	2.4	PI 88788	E3	3,600	3.3	58.3
Federal Hybrids	F2090N	2.0	PI 88788	RR2X	4,200	3.2	58.2
Asgrow	AG19X0	1.9	PI 88788	RR2X	4,950	2.4	58.1
LATHAM	L 2295 R2X	2.2	PI 88788	RR2X	3,175	2.2	58.0
Stine	19EC12	1.9	PI 88788	E3	2,850	2.0	57.8
Merschman	Cheyenne 1920E	2.0	PI 88788	E3	3,600	2.6	57.7
Dyna-Gro	S21EN81	2.1	PI 88788	E3	2,050	1.0	57.5
Kruger	K2X-2073	2.0	PI 88788	RR2X	3,375	4.2	57.5
Stine	19EA32	1.9	PI 88788	E3	800	0.6	57.5
Asgrow	AG24X9	2.4	PI 88788	RR2X	4,025	2.9	57.4
Cornelius	CB20X22	2.0	PI 88788	RR2X	4,150	3.3	57.3
Asgrow	AG18X0	1.8	PI 88788	RR2X	5,750	5.1	57.0
NK	S20-J5X	2.0	PI 88788	RR2X	4,025	1.8	56.9
Pioneer	P19A14X	1.9	Peking	RR2X	1,175	0.8	56.6
NuTech Seed	24N02E	2.4	PI 88788	E3	2,550	1.5	56.5
Dyna-Gro	S24EN50	2.4	PI 88788	E3	6,225	5.3	56.2
Kruger	K2X-1681	1.6	PI 88788	RR2X	5,600	3.7	56.2
LATHAM	L 1995 E3	1.9	PI 88788	E3	950	0.7	56.1
LG Seeds	LGS2627RX	2.6	PI 88788	RR2X	5,150	4.0	55.7
Dyna-Gro	S19XT30	1.9	PI 88788	RR2X	6,675	2.4	54.8
LATHAM	L 2379 E3	2.3	PI 88788	E3	3,750	7.5	54.8
NK	S21-W8X	2.1	PI 88788	RR2X	5,550	4.8	54.8
Pioneer	P18A98X	1.8	PI 88788	RR2X	2,675	1.5	54.7
P3 Genetics	2021E	2.1	PI 88788	E3	5,425	2.0	54.6

Table 1. Laurens (NW Iowa) continued.

Brand	Variety	Relative Maturity	Resistance	Herbicide Technology ¹	SCN # (eggs/100cc) ²	SCN RF ³	Yield (bu/acre)
Stine	19EC22	1.9	PI 88788	E3	2,650	4.0 	54.5 
Beck	2088FP	2.0	PI 88788	LLGT27	2,850	2.0 	54.3 
Kruger	K2X-2283	2.2	PI 88788	RR2X	5,450	2.2 	54.2 
Merschman	Neptune 2117E	1.7	PI 88788	E3	1,550	1.4 	54.2 
Stine	23EA32	2.3	PI 88788	E3	1,575	1.3 	54.2 
Merschman	Navaho 202LLGT27	2.0	PI 88788	LLGT27	2,025	1.0 	54.1 
NK	S20-E3	2.0	PI 88788	E3	4,825	2.3 	54.1 
NuTech Seed	20N03E	2.0	PI 88788	E3	4,100	2.9 	54.0 
Jacobsen	5790E3	2.0	PI 88788	E3	3,075	5.1 	53.2 
Beck	1910E3	1.9	PI 88788	E3	675	0.4 	52.6 
Stine	17EB02	1.7	PI 88788	E3	4,050	2.6 	52.4 
Pioneer	P23A15X	2.3	PI 88788	RR2X	6,425	2.2 	52.3 
Hoegemeyer HPT	2245 E	2.2	PI 88788	E3	7,200	2.9 	51.8 
Cornelius	CB18X80	1.8	PI 88788	RR2X	2,950	1.4 	51.5 
P3 Genetics	2023E	2.3	PI 88788	E3	6,200	3.0 	51.4 
Beck	2559X2	2.5	PI 88788	RR2X	4,175	1.7 	51.2 
Four Star Seed	3X192	1.9	PI 88788	RR2X	6,700	5.6 	50.8 
NuTech Seed	20N04E	2.0	PI 88788	E3	6,675	4.2 	45.8 
Mean		2.1	-	-	3,643	2.5	57.5
LSD ⁴ (P = 0.10)		-	-	-	2,391	-	7.2
<i>Asgrow</i>	<i>AG27X8</i>	2.7	<i>None</i>	<i>RR2X</i>	8,075	5.9 	53.9 
<i>Iowa State</i>	<i>IA2113RA12</i>	2.2	<i>None</i>	<i>None</i>	8,000	7.5 	50.5 
<i>NK</i>	<i>S24-K2</i>	2.4	<i>None</i>	<i>RR2Y</i>	13,825	5.3 	48.5 
Mean		2.4	-	-	9,967	6.2	51.0

Values presented in tables are means. Entries are listed in decreasing order of yield.

Italicized entries are widely available SCN-susceptible varieties entered by Iowa State University for comparison purposes.

¹ GT = glyphosate tolerant, RR2Y = Roundup Ready 2 Yield[®], RR2X = Roundup Ready 2 Xtend[®], LL = LibertyLink[®], LLGT27 = LibertyLink[®] GT27[™], E3 = Enlist E3[™]. May not reflect all herbicide tolerances. Consult product literature or seed dealer for more complete information.

² Final SCN egg population density (eggs per 100 cc soil); there were no significant differences among initial SCN population densities; initial SCN population 1,632 eggs per 100 cc soil; HG type 2- (28.7% on PI 88788, 0.9% on Peking).




































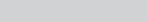






³ Reproductive factor (RF) = average final SCN egg population density / average initial SCN egg population density; RF 1.0 = no change in SCN population density over growing season.

⁴ Least significant difference: values are from Fisher's least-significant-difference test, NS = no significant differences among the varieties.

Table 2. Manly (NC Iowa).

Brand	Variety	Relative Maturity	Resistance	Herbicide Technology ¹	SCN # (eggs/100cc) ²	SCN RF ³	Yield (bu/acre)
Kruger	K2X-1681	1.6	PI 88788	RR2X	9,300	19.6	79.6
Asgrow	AG20X9	2.0	PI 88788	RR2X	7,675	3.8	77.3
Stine	19EC12	1.9	PI 88788	E3	6,525	8.7	77.3
Asgrow	AG23X9	2.3	Peking	RR2X	1,275	0.8	76.6
LATHAM	L 2638 E3	2.6	PI 88788	E3	6,325	5.0	76.5
FS HiSOY	HS 21X90	2.1	PI 88788	RR2X	4,850	3.7	75.6
NK	S23-G5X	2.3	PI 89772	RR2X	3,950	2.6	75.5
LG Seeds	LGS2417RX	2.4	PI 88788	RR2X	5,250	7.2	75.4
Stine	19EC22	1.9	PI 88788	E3	4,250	3.3	75.4
NuTech Seed	24N02E	2.4	PI 88788	E3	4,700	3.2	75.3
Pioneer	P19A14X	1.9	Peking	RR2X	2,575	1.0	75.3
Cornelius	CB20X22	2.0	PI 88788	RR2X	8,600	5.4	75.2
Merschman	Mohave 2123LLGT27	2.3	PI 88788	LLGT27	13,775	6.2	75.1
P3 Genetics	2021E	2.1	PI 88788	E3	7,700	3.8	74.9
Kruger	K2X-2283	2.2	PI 88788	RR2X	8,275	9.2	74.7
LG Seeds	LGS2444RX	2.4	PI 88788	RR2X	9,700	5.5	74.6
Hoegemeyer HPT	1960 NX	1.9	Peking	RR2X	1,050	0.5	74.3
Federal Hybrids	F2290N	2.2	Peking	RR2X	4,425	2.1	74.2
Legacy Seeds	LS212-20	2.1	PI 88788	E3	5,050	4.9	74.1
NK	S20-E3	2.0	PI 88788	E3	7,425	7.1	74.1
NuTech Seed	20N03E	2.0	PI 88788	E3	5,425	2.5	74.1
Dyna-Gro	S21EN81	2.1	PI 88788	E3	3,750	1.6	74.0
Four Star Seed	3X221	2.2	PI 88788	RR2X	5,650	4.3	73.8
Asgrow	AG18X0	1.8	PI 88788	RR2X	8,100	6.5	73.7
Federal Hybrids	F2380N	2.3	PI 88788	RR2X	3,300	2.0	73.3
Asgrow	AG22X9	2.2	PI 88788	RR2X	7,900	2.7	73.1
LATHAM	L 1995 E3	1.9	PI 88788	E3	2,625	3.6	73.1
Merschman	Cheyenne 1920E	2.0	PI 88788	E3	7,100	4.9	73.1
NK	S20-J5X	2.0	PI 88788	RR2X	5,375	3.0	73.1
Hoegemeyer HPT	2480 E	2.4	PI 88788	E3	6,325	5.4	73.0
Pioneer	P21A28X	2.1	Peking	RR2X	1,700	0.8	73.0
NK	S17-E3	1.7	PI 88788	E3	5,450	5.5	72.9
Jacobsen	5790E3	2.0	PI 88788	E3	4,975	3.6	72.8
Merschman	Neptune 2117E	1.7	PI 88788	E3	4,450	2.2	72.7
NK	S21-W8X	2.1	PI 88788	RR2X	6,350	10.2	72.6
Asgrow	AG24X9	2.4	PI 88788	RR2X	4,625	3.3	72.5
Beck	1910E3	1.9	PI 88788	E3	2,950	2.6	72.5
Legacy Seeds	LS192-20	1.9	PI 88788	E3	4,450	2.0	72.5
NuTech Seed	20N04E	2.0	PI 88788	E3	9,475	7.4	72.5
Stine	17EB02	1.7	PI 88788	E3	4,650	2.9	72.5
Federal Hybrids	F2090N	2.0	PI 88788	RR2X	5,650	5.3	72.2
Legacy Seeds	LS252-20	2.5	PI 88788	E3	8,150	3.7	72.2
Dyna-Gro	S19XT30	1.9	PI 88788	RR2X	8,675	9.9	72.0
Beck	2337X2	2.3	PI 88788	RR2X	8,850	12.2	71.9
LG Seeds	LGS2007RX	2.0	PI 88788	RR2X	7,650	3.5	71.9
Pioneer	P18A98X	1.8	PI 88788	RR2X	6,425	3.3	71.9
Four Star Seed	3X192	1.9	PI 88788	RR2X	6,500	3.9	71.8
Pioneer	P23A15X	2.3	PI 88788	RR2X	11,375	5.8	71.1
Hoegemeyer HPT	2245 E	2.2	PI 88788	E3	8,175	7.0	70.5
Asgrow	AG19X0	1.9	PI 88788	RR2X	11,200	5.9	70.4
Stine	19EA32	1.9	PI 88788	E3	3,275	1.6	70.4

Table 2. Manly (NC Iowa) continued.

Brand	Variety	Relative Maturity	Resistance	Herbicide Technology ¹	SCN # (eggs/100cc) ²	SCN RF ³	Yield (bu/acre)
Kruger	K2X-2073	2.0	PI 88788	RR2X	5,225	2.2 	70.2 
Beck	2088FP	2.0	PI 88788	LLGT27	3,700	3.0 	69.9 
Merschman	Osage 2025E	2.5	Peking	E3	6,500	5.2 	69.9 
NuTech Seed	24N04E	2.4	Peking	E3	5,700	4.1 	69.9 
LATHAM	L 2295 R2X	2.2	PI 88788	RR2X	5,775	2.5 	69.8 
Stine	21EA32	2.1	PI 88788	E3	4,375	2.9 	69.5 
Beck	2420E3	2.4	PI 88788	E3	6,375	3.7 	69.3 
Dyna-Gro	S24EN50	2.4	PI 88788	E3	7,700	4.2 	69.3 
LG Seeds	LGS2627RX	2.6	PI 88788	RR2X	6,825	5.9 	69.3 
Merschman	Navaho 202LLGT27	2.0	PI 88788	LLGT27	2,600	1.2 	69.3 
Cornelius	CB18X80	1.8	PI 88788	RR2X	6,375	3.8 	69.2 
LATHAM	L 2379 E3	2.3	PI 88788	E3	4,425	3.2 	68.9 
NuTech Seed	22N02E	2.2	PI 88788	E3	6,175	4.0 	68.9 
FS HiSOY	HS 23X70	2.3	Peking	RR2X	3,875	1.5 	68.6 
P3 Genetics	2023E	2.3	PI 88788	E3	6,450	2.2 	68.6 
NK	S16-K2X	1.6	PI 88788	RR2X	7,950	5.9 	68.2 
Stine	23EA32	2.3	PI 88788	E3	4,275	1.8 	66.7 
Beck	2559X2	2.5	PI 88788	RR2X	8,375	4.9 	65.2 
	Mean	2.1	-	-	6,028	4.4	72.4
	LSD ⁴ (P = 0.10)	-	-	-	3,689	-	4.9
<i>Asgrow</i>	<i>AG27X8</i>	2.7	<i>None</i>	<i>RR2X</i>	<i>11,700</i>	<i>6.0</i> 	<i>71.3</i> 
<i>NK</i>	<i>S24-K2</i>	2.4	<i>None</i>	<i>RR2Y</i>	<i>8,850</i>	<i>12.6</i> 	<i>69.1</i> 
<i>Iowa State</i>	<i>IA2113RA12</i>	2.2	<i>None</i>	<i>None</i>	<i>16,700</i>	<i>8.8</i> 	<i>60.3</i> 
	Mean	2.4	-	-	12,417	9.1	66.9

Values presented in tables are means. Entries are listed in decreasing order of yield.

Italicized entries are widely available SCN-susceptible varieties entered by Iowa State University for comparison purposes.

¹ GT = glyphosate tolerant, RR2Y = Roundup Ready 2 Yield[®], RR2X = Roundup Ready 2 Xtend[®], LL = LibertyLink[®], LLGT27 = LibertyLink[®] GT27[™], E3 = Enlist E3[™]. May not reflect all herbicide tolerances. Consult product literature or seed dealer for more complete information.

² Final SCN egg population density (eggs per 100 cc soil); there were no significant differences among initial SCN population densities; initial SCN population 1,618 eggs per 100 cc soil; HG type 1.2- (51.5% on PI 88788, 14.2% on Peking).




































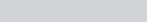






³ Reproductive factor (RF) = average final SCN egg population density / average initial SCN egg population density; RF 1.0 = no change in SCN population density over growing season.

⁴ Least significant difference: values are from Fisher's least-significant-difference test, NS = no significant differences among the varieties.

Table 3. Oelwein (NE Iowa).

Brand	Variety	Relative Maturity	Resistance	Herbicide Technology ¹	SCN # (eggs/100cc) ²	SCN RF ³	Yield (bu/acre)
NK	S20-J5X	2.0	PI 88788	RR2X	2,775	5.3	71.0
Asgrow	AG20X9	2.0	PI 88788	RR2X	2,600	5.2	70.6
Pioneer	P21A28X	2.1	Peking	RR2X	225	0.5	69.1
Dyna-Gro	S21EN81	2.1	PI 88788	E3	3,000	4.0	68.9
Kruger	K2X-2283	2.2	PI 88788	RR2X	2,750	5.5	68.9
LATHAM	L 2638 E3	2.6	PI 88788	E3	2,950	6.6	68.8
Hoegemeyer HPT	1960 NX	1.9	Peking	RR2X	75	0.2	68.3
LG Seeds	LGS2627RX	2.6	PI 88788	RR2X	3,025	12.1	67.9
LG Seeds	LGS2444RX	2.4	PI 88788	RR2X	4,400	13.5	67.8
NuTech Seed	24N02E	2.4	PI 88788	E3	1,275	2.3	67.8
LG Seeds	LGS2417RX	2.4	PI 88788	RR2X	3,750	16.7	67.7
LG Seeds	LGS2007RX	2.0	PI 88788	RR2X	3,850	8.6	67.6
Kruger	K2X-1681	1.6	PI 88788	RR2X	1,600	4.0	67.1
FS HiSOY	HS 23X70	2.3	Peking	RR2X	1,300	3.1	66.8
Merschman	Navaho 202LLGT27	2.0	PI 88788	LLGT27	2,625	3.5	66.7
Jacobsen	5790E3	2.0	PI 88788	E3	2,850	5.4	66.2
Pioneer	P18A98X	1.8	PI 88788	RR2X	2,000	5.3	66.2
Federal Hybrids	F2290N	2.2	Peking	RR2X	425	1.1	65.9
LATHAM	L 2295 R2X	2.2	PI 88788	RR2X	2,050	2.5	65.9
Kruger	K2X-2073	2.0	PI 88788	RR2X	2,050	4.6	65.8
Pioneer	P23A15X	2.3	PI 88788	RR2X	3,175	5.3	65.7
Legacy Seeds	LS192-20	1.9	PI 88788	E3	3,200	6.4	65.6
Asgrow	AG24X9	2.4	PI 88788	RR2X	2,400	5.3	65.4
FS HiSOY	HS 21X90	2.1	PI 88788	RR2X	3,725	6.5	65.4
Merschman	Mohave 2123LLGT27	2.3	PI 88788	LLGT27	5,575	6.6	65.3
NK	S20-E3	2.0	PI 88788	E3	2,925	13.0	65.2
Beck	2337X2	2.3	PI 88788	RR2X	4,000	5.9	65.1
Federal Hybrids	F2380N	2.3	PI 88788	RR2X	600	1.3	65.0
Pioneer	P19A14X	1.9	Peking	RR2X	525	1.9	65.0
Merschman	Cheyenne 1920E	2.0	PI 88788	E3	3,050	12.2	64.8
Beck	2559X2	2.5	PI 88788	RR2X	3,175	12.7	64.6
Dyna-Gro	S19XT30	1.9	PI 88788	RR2X	1,925	4.3	64.6
NK	S21-W8X	2.1	PI 88788	RR2X	3,850	9.1	64.6
Asgrow	AG22X9	2.2	PI 88788	RR2X	2,575	3.4	64.3
Cornelius	CB18X80	1.8	PI 88788	RR2X	3,300	6.3	64.2
Beck	2420E3	2.4	PI 88788	E3	7,500	15.8	64.1
NK	S23-G5X	2.3	PI 89772	RR2X	2,725	2.9	64.1
NuTech Seed	20N04E	2.0	PI 88788	E3	2,850	7.6	64.0
Cornelius	CB20X22	2.0	PI 88788	RR2X	4,100	13.7	63.9
Merschman	Osage 2025E	2.5	Peking	E3	1,875	3.3	63.8
NK	S16-K2X	1.6	PI 88788	RR2X	2,425	6.9	63.6
Asgrow	AG23X9	2.3	Peking	RR2X	250	0.6	63.5
NuTech Seed	24N04E	2.4	Peking	E3	700	1.1	63.4
Hoegemeyer HPT	2480 E	2.4	PI 88788	E3	1,975	5.3	63.3
P3 Genetics	2021E	2.1	PI 88788	E3	3,450	9.9	63.3
Four Star Seed	3X192	1.9	PI 88788	RR2X	1,400	4.0	63.2
Stine	19EC22	1.9	PI 88788	E3	2,425	9.7	63.2
NuTech Seed	22N02E	2.2	PI 88788	E3	2,475	4.3	63.1
NuTech Seed	20N03E	2.0	PI 88788	E3	2,625	5.0	62.9
Stine	19EA32	1.9	PI 88788	E3	1,875	3.3	62.9
Asgrow	AG19X0	1.9	PI 88788	RR2X	1,350	5.4	62.6

Table 3. Oelwein (NE Iowa) continued.

Brand	Variety	Relative Maturity	Resistance	Herbicide Technology ¹	SCN # (eggs/100cc) ²	SCN RF ³	Yield (bu/acre)
Stine	21EA32	2.1	PI 88788	E3	4,075	7.1 	62.4 
Legacy Seeds	LS212-20	2.1	PI 88788	E3	3,275	6.9 	62.3 
Beck	1910E3	1.9	PI 88788	E3	1,875	8.3 	61.8 
Legacy Seeds	LS252-20	2.5	PI 88788	E3	2,450	5.2 	61.8 
LATHAM	L 2379 E3	2.3	PI 88788	E3	2,125	6.1 	61.3 
Four Star Seed	3X221	2.2	PI 88788	RR2X	3,600	6.9 	61.2 
NK	S17-E3	1.7	PI 88788	E3	5,975	15.9 	61.0 
Federal Hybrids	F2090N	2.0	PI 88788	RR2X	1,900	3.3 	60.8 
Stine	17EB02	1.7	PI 88788	E3	6,100	7.6 	60.2 
Asgrow	AG18X0	1.8	PI 88788	RR2X	2,025	4.3 	59.9 
Stine	19EC12	1.9	PI 88788	E3	4,575	5.7 	59.6 
Stine	23EA32	2.3	PI 88788	E3	3,050	6.1 	58.8 
LATHAM	L 1995 E3	1.9	PI 88788	E3	2,725	5.0 	58.5 
Merschman	Neptune 2117E	1.7	PI 88788	E3	2,150	3.6 	58.4 
Beck	2088FP	2.0	PI 88788	LLGT27	2,125	4.5 	58.3 
Hoegemeyer HPT	2245 E	2.2	PI 88788	E3	2,400	5.3 	57.8 
Dyna-Gro	S24EN50	2.4	PI 88788	E3	6,900	12.0 	56.8 
P3 Genetics	2023E	2.3	PI 88788	E3	6,325	7.9 	56.6 
	Mean	2.1	-	-	2,800	6.2	64.1
	LSD ⁴ (P = 0.10)	-	-	-	2,085	-	5.4
<i>Asgrow</i>	<i>AG27X8</i>	2.7	<i>None</i>	<i>RR2X</i>	<i>15,250</i>	<i>19.7</i> 	<i>63.6</i> 
<i>NK</i>	<i>S24-K2</i>	2.4	<i>None</i>	<i>RR2Y</i>	<i>10,350</i>	<i>25.9</i> 	<i>59.4</i> 
<i>Iowa State</i>	<i>IA2113RA12</i>	2.2	<i>None</i>	<i>None</i>	<i>23,700</i>	<i>39.5</i> 	<i>52.8</i> 
	Mean	2.4	-	-	16,433	28.4	58.6

Values presented in tables are means. Entries are listed in decreasing order of yield.

Italicized entries are widely available SCN-susceptible varieties entered by Iowa State University for comparison purposes.

¹ GT = glyphosate tolerant, RR2Y = Roundup Ready 2 Yield[®], RR2X = Roundup Ready 2 Xtend[®], LL = LibertyLink[®], LLGT27 = LibertyLink[®] GT27[™], E3 = Enlist E3[™]. May not reflect all herbicide tolerances. Consult product literature or seed dealer for more complete information.

² Final SCN egg population density (eggs per 100 cc soil); there were no significant differences among initial SCN population densities; initial SCN population 494 eggs per 100 cc soil; HG type 2- (31.7% on PI 88788, 0.5% on Peking).




































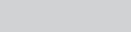






³ Reproductive factor (RF) = average final SCN egg population density / average initial SCN egg population density; RF 1.0 = no change in SCN population density over growing season.

⁴ Least significant difference: values are from Fisher's least-significant-difference test, NS = no significant differences among the varieties.

Table 4. Moorhead (WC Iowa).

Brand	Variety	Relative Maturity	Resistance	Herbicide Technology ¹	SCN # (eggs/100cc) ²	SCN RF ³	Yield (bu/acre)
LG Seeds	LGS2444RX	2.4	PI 88788	RR2X	2,950	1.6	79.9
NK	S26-E3	2.6	Peking	E3	725	0.5	76.5
Stine	28EC32	2.8	PI 88788	E3	1,750	0.8	74.7
FS HiSOY	HS 24X80	2.4	PI 88788	RR2X	2,775	1.4	74.4
FS HiSOY	HS 28X70	2.8	PI 88788	RR2X	2,300	1.6	74.2
Beck	2420E3	2.4	PI 88788	E3	5,375	4.3	73.8
Pioneer	P27A17X	2.7	Peking	RR2X	250	0.2	73.8
Hoegemeyer HPT	2660 E	2.6	PI 88788	E3	1,550	0.9	73.6
Asgrow	AG23X9	2.3	Peking	RR2X	475	0.3	73.4
NK	S28-E3	2.8	PI 88788	E3	1,500	1.2	73.4
Dyna-Gro	S28XT58	2.8	PI 88788	RR2X	1,825	0.7	73.3
Asgrow	AG26X0	2.6	PI 88788	RR2X	1,450	0.8	73.2
Merschman	Chickasaw 2025LLGT27	2.5	PI 88788	LLGT27	1,200	0.7	73.2
Four Star Seed	3X271	2.7	PI 88788	RR2X	2,125	1.5	73.1
LATHAM	L 2638 E3	2.6	PI 88788	E3	1,925	1.4	73.0
LATHAM	L 2894 E3	2.8	PI 88788	E3	2,075	1.1	72.8
Pioneer	P25A04X	2.5	Peking	RR2X	250	0.3	72.8
P3 Genetics	1928E	2.8	PI 88788	E3	2,225	1.5	72.8
Hoegemeyer HPT	2590 NR	2.5	Peking	GT	375	0.3	72.6
Pioneer	P28A42X	2.8	PI 88788	RR2X	2,375	1.4	72.5
Four Star Seed	3X241	2.4	PI 88788	RR2X	1,325	1.4	72.4
Federal Hybrids	F2880N	2.8	PI 88788	RR2X	1,650	1.0	72.2
Hoegemeyer HPT	LL2641 N	2.6	Peking	LL	300	0.2	72.2
NK	S27-M8X	2.7	PI 88788	RR2X	3,875	2.1	72.2
Cornelius	CB24X64	2.4	PI 88788	RR2X	775	0.6	72.0
Beck	2899X2	2.8	PI 88788	RR2X	1,475	0.7	71.9
Cornelius	CB27X81	2.7	PI 88788	RR2X	1,700	1.8	71.8
Dyna-Gro	S27EN89	2.7	PI 88788	E3	1,275	0.8	71.8
NK	S23-G5X	2.3	PI 89772	RR2X	6,225	4.6	71.8
P3 Genetics	1924E	2.4	PI 88788	E3	575	0.6	71.8
Asgrow	AG32X0	3.2	PI 88788	RR2X	775	0.3	71.6
Beck	2662FP	2.6	PI 88788	LLGT27	1,750	0.9	71.0
LG Seeds	LGS2627RX	2.6	PI 88788	RR2X	1,475	1.0	70.7
Merschman	Apache 1926E	2.6	PI 88788	E3	1,550	0.8	70.5
LATHAM	L 2887 R2X	2.8	PI 88788	RR2X	1,950	1.5	70.3
Merschman	Harrison 2030E	3.0	PI 88788	E3	1,600	0.8	70.3
Jacobsen	774NR2X	2.4	PI 88788	RR2X	1,075	0.7	70.2
Merschman	Mohawk 1928E	2.8	PI 88788	E3	1,300	1.4	70.1
Asgrow	AG29X9	2.9	PI 88788	RR2X	1,600	1.1	69.8
NuTech Seed	28N02E	2.8	PI 88788	E3	1,700	1.0	69.8
LG Seeds	LGS3060RX	3.0	PI 88788	RR2X	4,050	3.3	69.6
LG Seeds	C2888RX	2.8	PI 88788	RR2X	2,825	1.1	69.5
NuTech Seed	30N03E	3.0	PI 88788	E3	1,575	1.0	69.5
Hoegemeyer HPT	2245 E	2.2	PI 88788	E3	1,600	1.1	69.4
Pioneer	P29A25X	2.9	PI 88788	RR2X	2,200	1.8	69.2
Merschman	Shawnee 2028LLGT27	2.8	PI 88788	LLGT27	1,475	1.3	69.0
Asgrow	AG30X9	3.0	PI 88788	RR2X	1,950	1.3	68.9
Beck	3117X2	3.1	PI 88788	RR2X	2,975	2.3	68.9
NK	S30-E3	3.0	PI 88788	E3	1,750	1.0	68.9
Kruger	K2X-2673	2.6	PI 88788	RR2X	3,125	2.4	68.8
Kruger	K2X-2573	2.5	PI 88788	RR2X	2,925	1.8	68.6

Table 4. Moorhead (WC Iowa) continued.

Brand	Variety	Relative Maturity	Resistance	Herbicide Technology ¹	SCN # (eggs/100cc) ²	SCN RF ³	Yield (bu/acre)
LATHAM	L 3192 E3	3.1	PI 88788	E3	1,625	0.7 	68.1 
Asgrow	AG27X0	2.7	PI 88788	RR2X	1,625	1.0 	67.9 
Cornelius	CB26X78	2.6	Peking	RR2X	775	0.5 	67.8 
NuTech Seed	30N05E	3.0	PI 88788	E3	775	0.5 	67.8 
Jacobsen	878NR2X	2.8	PI 88788	RR2X	1,675	0.9 	67.7 
NuTech Seed	26N04E	2.6	PI 88788	E3	1,400	1.0 	67.6 
Stine	24EA12	2.4	PI 88788	E3	3,150	1.5 	67.5 
Beck	3082FP	3.0	PI 88788	LLGT27	1,975	1.3 	67.1 
FS HiSOY	HS 32X90	3.2	PI 88788	RR2X	1,600	1.6 	66.8 
NuTech Seed	31N06E	3.3	PI 88788	E3	2,150	1.4 	66.5 
Dyna-Gro	S30EN70	3.0	PI 88788	E3	3,150	1.9 	65.9 
LATHAM	L 2839 LLGT27	2.8	PI 88788	LLGT27	1,050	1.1 	65.8 
Stine	27EA23	2.7	PI 88788	E3	1,300	0.9 	65.8 
Stine	29EC23	2.9	PI 88788	E3	1,550	1.0 	64.5 
Kruger	K2X-2971	2.9	PI 88788	RR2X	2,125	1.4 	63.6 
FS HiSOY	HS 31E90	3.1	PI 88788	E3	1,775	0.9 	63.4 
FS HiSOY	HS 32E00	3.2	PI 88788	E3	2,075	1.3 	63.4 
Stine	25EC23	2.5	PI 88788	E3	1,700	1.0 	60.1 
	Mean	2.7	-	-	1,846	1.2	70.3
	LSD ⁴ (P = 0.10)	-	-	-	992	-	6.5
<i>Beck</i>	<i>2992FP</i>	2.9	<i>None</i>	<i>LLGT27</i>	<i>1,350</i>	0.8 	70.4 
<i>Asgrow</i>	<i>AG27X8</i>	2.7	<i>None</i>	<i>RR2X</i>	<i>11,775</i>	9.1 	66.7 
<i>Iowa State</i>	<i>IA3054RA12</i>	3.0	<i>None</i>	<i>None</i>	<i>11,725</i>	9.6 	57.6 
	Mean	2.9	-	-	8,283	6.5	64.9

Values presented in tables are means. Entries are listed in decreasing order of yield.

Italicized entries are widely available SCN-susceptible varieties entered by Iowa State University for comparison purposes.

¹ GT = glyphosate tolerant, RR2Y = Roundup Ready 2 Yield®, RR2X = Roundup Ready 2 Xtend®, LL = LibertyLink®, LLGT27 = LibertyLink® GT27™, E3 = Enlist E3™. May not reflect all herbicide tolerances. Consult product literature or seed dealer for more complete information.

² Final SCN egg population density (eggs per 100 cc soil); there were no significant differences among initial SCN population densities; initial SCN population 1,572 eggs per 100 cc soil; HG type 2- (33.4% on PI 88788, 0.3% on Peking).

³ Reproductive factor (RF) = average final SCN egg population density / average initial SCN egg population density; RF 1.0 = no change in SCN population density over growing season.

⁴ Least significant difference: values are from Fisher's least-significant-difference test, NS = no significant differences among the varieties.

Table 5. Huxley (C Iowa).

Brand	Variety	Relative Maturity	Resistance	Herbicide Technology ¹	SCN # (eggs/100cc) ²	SCN RF ³	Yield (bu/acre)
Beck	2899X2	2.8	PI 88788	RR2X	13,800	13.1	53.4
Cornelius	CB27X81	2.7	PI 88788	RR2X	20,450	8.6	51.1
P3 Genetics	1928E	2.8	PI 88788	E3	19,500	9.3	49.5
LG Seeds	LGS3060RX	3.0	PI 88788	RR2X	18,875	11.3	49.3
Pioneer	P27A17X	2.7	Peking	RR2X	2,700	1.2	48.3
NK	S30-E3	3.0	PI 88788	E3	15,850	12.0	47.9
Jacobsen	878NR2X	2.8	PI 88788	RR2X	17,775	6.7	47.7
LATHAM	L 3192 E3	3.1	PI 88788	E3	13,375	3.4	47.7
Merschman	Apache 1926E	2.6	PI 88788	E3	13,925	5.5	47.7
Merschman	Harrison 2030E	3.0	PI 88788	E3	10,500	5.8	47.7
Pioneer	P28A42X	2.8	PI 88788	RR2X	17,100	8.2	47.6
Asgrow	AG27X0	2.7	PI 88788	RR2X	10,000	3.9	47.3
NK	S28-E3	2.8	PI 88788	E3	17,525	11.9	47.2
LATHAM	L 2894 E3	2.8	PI 88788	E3	15,750	8.3	47.1
Cornelius	CB26X78	2.6	Peking	RR2X	16,500	7.3	46.8
Asgrow	AG30X9	3.0	PI 88788	RR2X	9,475	7.0	46.7
NuTech Seed	30N03E	3.0	PI 88788	E3	13,225	5.9	46.7
Beck	3082FP	3.0	PI 88788	LLGT27	20,275	8.8	46.3
Four Star Seed	3X271	2.7	PI 88788	RR2X	11,975	11.7	46.2
Asgrow	AG23X9	2.3	Peking	RR2X	3,475	1.6	46.0
NuTech Seed	30N05E	3.0	PI 88788	E3	17,150	4.2	46.0
Pioneer	P29A25X	2.9	PI 88788	RR2X	17,500	7.5	46.0
Federal Hybrids	F2880N	2.8	PI 88788	RR2X	15,075	12.1	45.9
P3 Genetics	1924E	2.4	PI 88788	E3	9,375	2.9	45.9
FS HiSOY	HS 32X90	3.2	PI 88788	RR2X	12,900	4.1	45.8
LG Seeds	LGS2627RX	2.6	PI 88788	RR2X	9,725	6.7	45.7
Dyna-Gro	S27EN89	2.7	PI 88788	E3	20,125	17.1	45.5
NK	S26-E3	2.6	Peking	E3	18,175	14.0	45.4
Asgrow	AG32X0	3.2	PI 88788	RR2X	22,875	11.4	45.1
Hoegemeyer HPT	2660 E	2.6	PI 88788	E3	13,675	2.0	45.1
LG Seeds	C2888RX	2.8	PI 88788	RR2X	17,400	5.8	45.0
Kruger	K2X-2971	2.9	PI 88788	RR2X	7,100	4.9	44.9
FS HiSOY	HS 28X70	2.8	PI 88788	RR2X	11,050	3.1	44.8
Hoegemeyer HPT	LL2641 N	2.6	Peking	LL	1,600	0.7	44.3
Merschman	Chickasaw 2025LLGT27	2.5	PI 88788	LLGT27	11,625	8.3	44.3
Dyna-Gro	S28XT58	2.8	PI 88788	RR2X	11,475	4.5	43.9
Merschman	Shawnee 2028LLGT27	2.8	PI 88788	LLGT27	12,800	7.3	43.9
Stine	29EC23	2.9	PI 88788	E3	15,700	7.3	43.9
Dyna-Gro	S30EN70	3.0	PI 88788	E3	18,725	5.7	43.4
FS HiSOY	HS 31E90	3.1	PI 88788	E3	23,300	9.5	43.3
Kruger	K2X-2573	2.5	PI 88788	RR2X	17,850	9.5	43.3
Stine	27EA23	2.7	PI 88788	E3	21,725	8.1	43.2
NK	S27-M8X	2.7	PI 88788	RR2X	19,250	8.5	42.8
Asgrow	AG29X9	2.9	PI 88788	RR2X	24,075	8.8	42.2
FS HiSOY	HS 32E00	3.2	PI 88788	E3	20,275	9.4	41.9
Pioneer	P25A04X	2.5	Peking	RR2X	2,950	2.0	41.8
Stine	28EC32	2.8	PI 88788	E3	11,075	4.9	41.5
Beck	3117X2	3.1	PI 88788	RR2X	17,975	11.6	41.4
LATHAM	L 2839 LLGT27	2.8	PI 88788	LLGT27	8,350	8.0	40.3
LATHAM	L 2638 E3	2.6	PI 88788	E3	15,825	5.7	39.9
Stine	24EA12	2.4	PI 88788	E3	7,400	2.8	39.8

Table 5. Huxley (C Iowa) continued.

Brand	Variety	Relative Maturity	Resistance	Herbicide Technology ¹	SCN # (eggs/100cc) ²	SCN RF ³	Yield (bu/acre)
NuTech Seed	31N06E	3.3	PI 88788	E3	21,225	8.3	39.5
LATHAM	L 2887 R2X	2.8	PI 88788	RR2X	9,675	3.5	39.2
NuTech Seed	26N04E	2.6	PI 88788	E3	24,550	8.8	39.0
NK	S23-G5X	2.3	PI 89772	RR2X	5,125	1.7	38.9
Asgrow	AG26X0	2.6	PI 88788	RR2X	20,100	7.4	38.7
Hoegemeyer HPT	2590 NR	2.5	Peking	GT	3,100	0.7	38.4
Beck	2662FP	2.6	PI 88788	LLGT27	12,600	4.8	37.8
Merschman	Mohawk 1928E	2.8	PI 88788	E3	13,250	9.3	37.8
NuTech Seed	28N02E	2.8	PI 88788	E3	28,425	13.7	37.4
Beck	2420E3	2.4	PI 88788	E3	14,350	3.5	37.0
Jacobsen	774NR2X	2.4	PI 88788	RR2X	10,950	6.7	36.7
LG Seeds	LGS2444RX	2.4	PI 88788	RR2X	10,875	4.0	35.6
Hoegemeyer HPT	2245 E	2.2	PI 88788	E3	11,200	4.1	35.5
Stine	25EC23	2.5	PI 88788	E3	19,225	6.9	35.4
Four Star Seed	3X241	2.4	PI 88788	RR2X	7,650	2.8	35.2
Kruger	K2X-2673	2.6	PI 88788	RR2X	19,600	6.1	32.6
FS HiSOY	HS 24X80	2.4	PI 88788	RR2X	9,600	3.8	31.9
Cornelius	CB24X64	2.4	PI 88788	RR2X	7,500	3.3	30.9
	Mean	2.7	-	-	14,277	6.8	43.0
	LSD ⁴ (P = 0.10)	-	-	-	9,481	-	7.6
<i>Asgrow</i>	<i>AG27X8</i>	2.7	<i>None</i>	<i>RR2X</i>	<i>15,525</i>	5.2	48.1
<i>Beck</i>	<i>2992FP</i>	2.9	<i>None</i>	<i>LLGT27</i>	<i>13,100</i>	4.7	45.9
<i>Iowa State</i>	<i>IA3054RA12</i>	3.0	<i>None</i>	<i>None</i>	<i>7,850</i>	3.0	34.3
	Mean	2.9	-	-	12,158	4.3	42.7

Values presented in tables are means. Entries are listed in decreasing order of yield.

Italicized entries are widely available SCN-susceptible varieties entered by Iowa State University for comparison purposes.

¹ GT = glyphosate tolerant, RR2Y = Roundup Ready 2 Yield®, RR2X = Roundup Ready 2 Xtend®, LL = LibertyLink®, LLGT27 = LibertyLink® GT27™, E3 = Enlist E3™. May not reflect all herbicide tolerances. Consult product literature or seed dealer for more complete information.

² Final SCN egg population density (eggs per 100 cc soil); there were no significant differences among initial SCN population densities; initial SCN population 2,403 eggs per 100 cc soil; HG type 1.2- (56.8% on PI 88788, 22.6% on Peking).

³ Reproductive factor (RF) = average final SCN egg population density / average initial SCN egg population density; RF 1.0 = no change in SCN population density over growing season.

⁴ Least significant difference: values are from Fisher's least-significant-difference test, NS = no significant differences among the varieties.

Table 6. Urbana (EC Iowa).

Brand	Variety	Relative Maturity	Resistance	Herbicide Technology ¹	SCN # (eggs/100cc) ²	SCN RF ³	Yield (bu/acre)
Pioneer	P27A17X	2.7	Peking	RR2X	150	0.2	68.5
Kruger	K2X-2971	2.9	PI 88788	RR2X	2,625	3.9	67.7
Beck	2420E3	2.4	PI 88788	E3	2,275	2.2	67.5
Cornelius	CB26X78	2.6	Peking	RR2X	350	0.3	67.2
Hoegemeyer HPT	2660 E	2.6	PI 88788	E3	2,775	6.9	67.2
Pioneer	P28A42X	2.8	PI 88788	RR2X	4,450	8.5	67.2
NuTech Seed	30N05E	3.0	PI 88788	E3	500	0.6	66.9
Asgrow	AG30X9	3.0	PI 88788	RR2X	3,300	3.9	66.5
Kruger	K2X-2673	2.6	PI 88788	RR2X	1,950	1.6	66.3
NuTech Seed	28N02E	2.8	PI 88788	E3	2,925	3.3	66.1
Federal Hybrids	F2880N	2.8	PI 88788	RR2X	1,450	1.9	65.9
Merschman	Shawnee 2028LLGT27	2.8	PI 88788	LLGT27	325	0.6	65.7
FS HiSOY	HS 31E90	3.1	PI 88788	E3	3,225	3.0	65.1
LG Seeds	LGS2444RX	2.4	PI 88788	RR2X	2,750	3.5	64.7
Asgrow	AG32X0	3.2	PI 88788	RR2X	950	1.5	64.5
FS HiSOY	HS 24X80	2.4	PI 88788	RR2X	4,225	5.5	64.5
Asgrow	AG23X9	2.3	Peking	RR2X	175	0.2	64.4
Merschman	Apache 1926E	2.6	PI 88788	E3	950	4.2	64.4
NuTech Seed	30N03E	3.0	PI 88788	E3	850	1.8	64.4
NuTech Seed	26N04E	2.6	PI 88788	E3	2,825	4.5	64.3
LG Seeds	LGS3060RX	3.0	PI 88788	RR2X	2,100	3.8	63.7
NK	S27-M8X	2.7	PI 88788	RR2X	2,875	3.8	63.7
Asgrow	AG27X0	2.7	PI 88788	RR2X	2,350	4.5	63.0
LATHAM	L 2887 R2X	2.8	PI 88788	RR2X	1,850	4.4	62.2
LG Seeds	LGS2627RX	2.6	PI 88788	RR2X	3,225	3.0	61.9
NK	S30-E3	3.0	PI 88788	E3	1,225	1.0	61.8
Asgrow	AG29X9	2.9	PI 88788	RR2X	1,775	2.3	61.7
Dyna-Gro	S27EN89	2.7	PI 88788	E3	1,425	2.6	61.7
NK	S23-G5X	2.3	PI 89772	RR2X	3,500	4.8	61.7
Four Star Seed	3X241	2.4	PI 88788	RR2X	2,550	2.4	61.5
Jacobsen	878NR2X	2.8	PI 88788	RR2X	1,700	4.3	61.4
Asgrow	AG26X0	2.6	PI 88788	RR2X	1,600	1.8	61.1
LATHAM	L 2638 E3	2.6	PI 88788	E3	1,825	3.3	61.1
Cornelius	CB27X81	2.7	PI 88788	RR2X	3,050	5.3	60.9
Beck	2899X2	2.8	PI 88788	RR2X	2,225	2.4	60.8
LG Seeds	C2888RX	2.8	PI 88788	RR2X	2,500	3.6	60.8
Merschman	Harrison 2030E	3.0	PI 88788	E3	1,075	1.9	60.7
P3 Genetics	1928E	2.8	PI 88788	E3	1,800	2.7	60.6
Beck	3082FP	3.0	PI 88788	LLGT27	1,225	3.8	60.4
FS HiSOY	HS 32X90	3.2	PI 88788	RR2X	3,025	2.6	60.4
FS HiSOY	HS 32E00	3.2	PI 88788	E3	1,425	2.2	60.3
Jacobsen	774NR2X	2.4	PI 88788	RR2X	1,625	1.3	60.2
FS HiSOY	HS 28X70	2.8	PI 88788	RR2X	3,050	3.8	60.0
Stine	28EC32	2.8	PI 88788	E3	1,075	1.7	60.0
Stine	27EA23	2.7	PI 88788	E3	3,375	3.9	59.8
Stine	29EC23	2.9	PI 88788	E3	1,175	1.6	59.7
Hoegemeyer HPT	LL2641 N	2.6	Peking	LL	200	0.2	59.4
Merschman	Mohawk 1928E	2.8	PI 88788	E3	2,275	2.6	59.4
Merschman	Chickasaw 2025LLGT27	2.5	PI 88788	LLGT27	2,450	2.1	59.3
Dyna-Gro	S30EN70	3.0	PI 88788	E3	850	2.8	59.2
Hoegemeyer HPT	2245 E	2.2	PI 88788	E3	3,500	2.6	59.1

Table 6. Urbana (EC Iowa) continued.

Brand	Variety	Relative Maturity	Resistance	Herbicide Technology ¹	SCN # (eggs/100cc) ²	SCN RF ³	Yield (bu/acre)
Pioneer	P29A25X	2.9	PI 88788	RR2X	3,400	2.5	59.1
Cornelius	CB24X64	2.4	PI 88788	RR2X	1,525	2.9	58.3
LATHAM	L 2894 E3	2.8	PI 88788	E3	1,250	2.9	58.3
LATHAM	L 3192 E3	3.1	PI 88788	E3	1,750	3.0	58.2
Stine	25EC23	2.5	PI 88788	E3	1,400	6.2	57.8
Dyna-Gro	S28XT58	2.8	PI 88788	RR2X	2,575	3.4	57.6
Beck	3117X2	3.1	PI 88788	RR2X	3,100	4.0	57.4
Stine	24EA12	2.4	PI 88788	E3	1,425	2.4	57.3
Four Star Seed	3X271	2.7	PI 88788	RR2X	2,625	2.4	57.1
LATHAM	L 2839 LLGT27	2.8	PI 88788	LLGT27	2,050	1.3	57.1
Kruger	K2X-2573	2.5	PI 88788	RR2X	3,500	5.2	56.7
Beck	2662FP	2.6	PI 88788	LLGT27	4,025	5.6	56.1
NuTech Seed	31N06E	3.3	PI 88788	E3	4,825	3.4	56.1
NK	S26-E3	2.6	Peking	E3	275	0.3	55.2
NK	S28-E3	2.8	PI 88788	E3	3,700	5.5	55.1
Hoegemeyer HPT	2590 NR	2.5	Peking	GT	150	0.2	51.6
Pioneer	P25A04X	2.5	Peking	RR2X	275	0.2	51.3
P3 Genetics	1924E	2.4	PI 88788	E3	900	1.5	50.5
	Mean	2.7	-	-	2,053	2.9	61.1
	LSD ⁴ (P = 0.10)	-	-	-	2,205	-	6.4
<i>Beck</i>	<i>2992FP</i>	<i>2.9</i>	<i>None</i>	<i>LLGT27</i>	<i>1,550</i>	<i>3.4</i>	<i>60.0</i>
<i>Asgrow</i>	<i>AG27X8</i>	<i>2.7</i>	<i>None</i>	<i>RR2X</i>	<i>13,525</i>	<i>14.6</i>	<i>52.8</i>
<i>Iowa State</i>	<i>IA3054RA12</i>	<i>3.0</i>	<i>None</i>	<i>None</i>	<i>13,300</i>	<i>13.6</i>	<i>46.7</i>
	Mean	2.9	-	-	9,458	10.6	53.1

Values presented in tables are means. Entries are listed in decreasing order of yield.

Italicized entries are widely available SCN-susceptible varieties entered by Iowa State University for comparison purposes.

¹ GT = glyphosate tolerant, RR2Y = Roundup Ready 2 Yield®, RR2X = Roundup Ready 2 Xtend®, LL = LibertyLink®, LLGT27 = LibertyLink® GT27™, E3 = Enlist E3™. May not reflect all herbicide tolerances. Consult product literature or seed dealer for more complete information.

² Final SCN egg population density (eggs per 100 cc soil); there were no significant differences among initial SCN population densities; initial SCN population 790 eggs per 100 cc soil; HG type 2- (24.1% on PI 88788, 0% on Peking).











































³ Reproductive factor (RF) = average final SCN egg population density / average initial SCN egg population density; RF 1.0 = no change in SCN population density over growing season.

⁴ Least significant difference: values are from Fisher's least-significant-difference test, NS = no significant differences among the varieties.

Table 7. Glenwood (SW Iowa).

Brand	Variety	Relative Maturity	Resistance	Herbicide Technology ¹	SCN # (eggs/100cc) ²	SCN RF ³	Yield (bu/acre)
Beck	3442FP	3.4	PI 88788	LLGT27	5,875	4.7	66.1
Hoegemeyer HPT	3350 E	3.3	PI 88788	E3	3,575	3.5	66.1
Pioneer	P33A53X	3.3	PI 88788	RR2X	7,925	7.7	65.4
Pioneer	P37A27X	3.7	PI 88788	RR2X	12,200	9.4	65.1
Asgrow	AG27X0	2.7	PI 88788	RR2X	5,275	6.4	64.4
NK	S30-M9X	3.0	PI 88788	RR2X	13,125	14.2	64.4
Asgrow	AG33X0	3.3	PI 88788	RR2X	11,275	12.9	64.1
Asgrow	AG37X9	3.7	PI 88788	RR2X	13,875	10.9	63.9
LG Seeds	LGS3733RX	3.7	PI 88788	RR2X	5,950	4.6	63.8
Asgrow	AG32X0	3.2	PI 88788	RR2X	8,425	4.9	63.7
Kruger	K2X-3662	3.6	PI 88788	RR2X	6,350	7.7	63.6
Jacobsen	878NR2X	2.8	PI 88788	RR2X	7,050	7.6	63.3
Federal Hybrids	F2880N	2.8	PI 88788	RR2X	7,775	4.8	63.2
Pioneer	P31A22X	3.1	PI 88788	RR2X	5,075	4.1	62.9
Asgrow	AG36X6	3.6	PI 88788	RR2X	13,225	9.4	62.8
Stine	30EB32	3.0	PI 88788	E3	5,350	4.2	62.7
Asgrow	AG30X9	3.0	PI 88788	RR2X	10,025	12.9	62.6
Beck	3789X2	3.7	PI 88788	RR2X	11,400	12.3	62.3
NK	S35-E3	3.5	PI 88788	E3	6,325	5.4	62.2
Cornelius	CB33X17	3.3	PI 88788	RR2X	11,225	6.8	62.1
LATHAM	L 2894 E3	2.8	PI 88788	E3	5,100	4.9	62.1
Kruger	K2X-3552	3.5	PI 88788	RR2X	4,425	7.1	61.7
LG Seeds	LGS3777RX	3.7	PI 88788	RR2X	8,350	5.8	61.6
Cornelius	CB30X09	3.0	PI 88788	RR2X	9,125	11.1	61.2
LG Seeds	LGS3060RX	3.0	PI 88788	RR2X	17,225	17.7	61.2
Dyna-Gro	S35EN99	3.5	PI 88788	E3	8,050	5.3	61.1
Hoegemeyer HPT	LL3220 N	3.2	Peking	LL	4,375	3.4	61.1
Asgrow	AG29X9	2.9	PI 88788	RR2X	11,950	17.1	61.0
NK	S28-E3	2.8	PI 88788	E3	9,525	9.1	60.9
P3 Genetics	1928E	2.8	PI 88788	E3	8,500	8.9	60.9
Stine	33EC02	3.3	PI 88788	E3	11,500	8.5	60.8
NuTech Seed	39N04E	3.8	PI 88788	E3	7,975	6.4	60.7
NK	S27-M8X	2.7	PI 88788	RR2X	8,350	10.4	60.6
Beck	3447X2	3.4	PI 88788	RR2X	8,450	10.6	60.5
P3 Genetics	2034E	3.4	PI 88788	E3	5,400	6.8	60.5
Kruger	K2X-3384	3.3	PI 88788	RR2X	12,300	8.1	60.4
Stine	34EA12	3.4	PI 88788	E3	7,950	4.9	60.3
Jacobsen	5888E3	2.8	PI 88788	RR2X	10,025	8.0	60.2
LG Seeds	LGS3600RX	3.6	PI 88788	RR2X	9,325	8.1	60.2
LG Seeds	LGS3202RX	3.2	PI 88788	RR2X	8,925	9.4	60.1
Cornelius	CB27X81	2.7	PI 88788	RR2X	14,250	16.8	59.9
Pioneer	P39A58X	3.9	PI 88788	RR2X	8,450	8.2	59.7
Merschman	Truman 2038LLGT27	3.8	PI 88788	LLGT27	8,775	12.1	59.4
NK	S30-E3	3.0	PI 88788	E3	6,000	4.4	59.4
NuTech Seed	35N03E	3.5	PI 88788	E3	6,525	6.9	59.4
Hoegemeyer HPT	3030 E	3.0	PI 88788	E3	8,825	5.4	58.6
Hoegemeyer HPT	3591 E	3.5	PI 88788	E3	12,200	6.1	58.5
LATHAM	L 3448 R2X	3.4	PI 88788	RR2X	10,300	12.9	58.5
Dyna-Gro	S32EN01	3.2	PI 88788	E3	13,350	10.3	58.1
Beck	3546FP	3.5	PI 88788	LLGT27	14,700	11.1	57.0
LATHAM	L 3192 E3	3.1	PI 88788	E3	5,250	13.1	56.6

Table 7. Glenwood (SW Iowa) continued.

Brand	Variety	Relative Maturity	Resistance	Herbicide Technology ¹	SCN # (eggs/100cc) ²	SCN RF ³	Yield (bu/acre)
Hoegemeyer HPT	2970 E	2.9	PI 88788	E3	7,300	5.2 	56.2 
Merschman	Eisenhower 1939E	3.9	PI 88788	E3	8,875	5.9 	55.1 
Merschman	Hayes 2034LLGT27	3.4	PI 88788	LLGT27	9,950	4.6 	55.0 
FS HiSoy	HS 38E90	3.8	PI 88788	E3	13,075	16.9 	54.9 
NuTech Seed	39N05E	4.0	PI 88788	E3	14,675	8.2 	54.0 
Merschman	Kennedy 1936E	3.6	PI 88788	E3	11,775	9.1 	53.9 
NK	S31-E3S	3.1	PI 88788	E3	8,600	7.2 	53.7 
Dyna-Gro	S36ES70	3.6	PI 88788	E3	10,150	11.6 	53.5 
Stine	31EB02	3.1	PI 88788	E3	9,650	9.0 	53.4 
FS HiSoy	HS 35B00	3.5	PI 88788	LLGT27	12,225	9.1 	53.1 
Stine	32EB02	3.2	PI 88788	E3	15,125	14.4 	52.6 
P3 Genetics	2029E	2.9	PI 88788	E3	11,250	8.3 	52.4 
Beck	3910E3	3.9	PI 88788	E3	8,600	7.5 	52.3 
Merschman	Monroe 2037E	3.7	PI 88788	E3	9,150	8.0 	51.7 
NK	S37-2E3	3.7	PI 88788	E3	6,575	5.5 	51.6 
Stine	36EA02	3.6	PI 88788	E3	14,625	10.1 	51.6 
LATHAM	L 3329 E3	3.3	PI 88788	E3	9,575	9.3 	50.8 
NuTech Seed	36N03E	3.6	PI 88788	E3	17,000	11.0 	49.6 
Mean		3.3	-	-	9,491	8.6	59.3
LSD ⁴ (P = 0.10)		-	-	-	5,952	-	4.2
<i>Beck</i>	<i>2992FP</i>	2.9	<i>None</i>	<i>LLGT27</i>	<i>8,300</i>	8.1 	62.8 
<i>Asgrow</i>	<i>AG27X8</i>	2.7	<i>None</i>	<i>RR2X</i>	<i>19,375</i>	15.2 	53.9 
<i>Iowa State</i>	<i>IA3051RA12</i>	3.2	<i>None</i>	<i>None</i>	<i>22,300</i>	14.6 	47.5 
Mean		2.9	-	-	16,658	12.6	54.7

Values presented in tables are means. Entries are listed in decreasing order of yield.

Italicized entries are widely available SCN-susceptible varieties entered by Iowa State University for comparison purposes.

¹ GT = glyphosate tolerant, RR2Y = Roundup Ready 2 Yield®, RR2X = Roundup Ready 2 Xtend®, LL = LibertyLink®, LLGT27 = LibertyLink® GT27™, E3 = Enlist E3™. May not reflect all herbicide tolerances. Consult product literature or seed dealer for more complete information.

² Final SCN egg population density (eggs per 100 cc soil); there were no significant differences among initial SCN population densities; initial SCN population 1,178 eggs per 100 cc soil; HG type 2- (19.4% on PI 88788, 0.3% on Peking).




































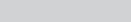






³ Reproductive factor (RF) = average final SCN egg population density / average initial SCN egg population density; RF 1.0 = no change in SCN population density over growing season.

⁴ Least significant difference: values are from Fisher's least-significant-difference test, NS = no significant differences among the varieties.

Table 8. Leighton (SC Iowa).

Brand	Variety	Relative Maturity	Resistance	Herbicide Technology ¹	SCN # (eggs/100cc) ²	SCN RF ³	Yield (bu/acre)
Jacobsen	878NR2X	2.8	PI 88788	RR2X	3,400	4.3	61.9
NK	S28-E3	2.8	PI 88788	E3	6,475	8.4	61.6
NK	S27-M8X	2.7	PI 88788	RR2X	5,650	4.5	61.4
Asgrow	AG33X0	3.3	PI 88788	RR2X	6,450	12.3	61.1
Dyna-Gro	S35EN99	3.5	PI 88788	E3	4,175	4.1	61.1
Hoegemeyer HPT	LL3220 N	3.2	Peking	LL	1,950	1.4	61.0
P3 Genetics	2034E	3.4	PI 88788	E3	4,325	4.2	60.8
LG Seeds	LGS3733RX	3.7	PI 88788	RR2X	5,950	9.5	60.3
LG Seeds	LGS3777RX	3.7	PI 88788	RR2X	9,400	11.4	60.3
Kruger	K2X-3662	3.6	PI 88788	RR2X	6,025	5.2	60.1
Beck	3789X2	3.7	PI 88788	RR2X	4,750	3.9	60.0
Pioneer	P33A53X	3.3	PI 88788	RR2X	4,325	3.9	59.9
LG Seeds	LGS3060RX	3.0	PI 88788	RR2X	7,450	4.6	59.8
Asgrow	AG30X9	3.0	PI 88788	RR2X	4,625	5.0	59.5
Hoegemeyer HPT	3350 E	3.3	PI 88788	E3	3,100	2.0	59.3
Asgrow	AG36X6	3.6	PI 88788	RR2X	4,400	2.1	59.0
Cornelius	CB27X81	2.7	PI 88788	RR2X	4,050	3.6	58.8
Pioneer	P37A27X	3.7	PI 88788	RR2X	4,675	3.9	58.6
NK	S30-E3	3.0	PI 88788	E3	3,675	4.6	58.4
Kruger	K2X-3384	3.3	PI 88788	RR2X	6,050	6.9	58.3
Federal Hybrids	F2880N	2.8	PI 88788	RR2X	3,625	2.8	58.2
Pioneer	P39A58X	3.9	PI 88788	RR2X	3,350	2.4	58.1
Kruger	K2X-3552	3.5	PI 88788	RR2X	5,050	5.1	57.9
LATHAM	L 3448 R2X	3.4	PI 88788	RR2X	8,175	8.2	57.9
NK	S35-E3	3.5	PI 88788	E3	3,475	5.6	57.9
NK	S31-E3S	3.1	PI 88788	E3	4,275	2.6	57.7
Asgrow	AG32X0	3.2	PI 88788	RR2X	5,950	9.9	57.6
Beck	3442FP	3.4	PI 88788	LLGT27	3,600	3.6	57.6
LG Seeds	LGS3600RX	3.6	PI 88788	RR2X	3,100	2.6	57.5
Jacobsen	5888E3	2.8	PI 88788	RR2X	3,600	3.8	57.2
Pioneer	P31A22X	3.1	PI 88788	RR2X	2,875	2.3	57.2
Asgrow	AG27X0	2.7	PI 88788	RR2X	3,550	3.6	57.0
NK	S30-M9X	3.0	PI 88788	RR2X	4,325	4.4	56.9
Beck	3447X2	3.4	PI 88788	RR2X	4,275	4.8	56.8
Cornelius	CB33X17	3.3	PI 88788	RR2X	8,975	10.9	56.8
Merschman	Truman 2038LLGT27	3.8	PI 88788	LLGT27	5,125	2.8	56.6
NuTech Seed	39N04E	3.8	PI 88788	E3	2,825	3.9	56.4
P3 Genetics	1928E	2.8	PI 88788	E3	4,075	4.4	56.4
NuTech Seed	35N03E	3.5	PI 88788	E3	5,900	3.3	56.2
Asgrow	AG37X9	3.7	PI 88788	RR2X	5,225	5.4	56.0
Asgrow	AG29X9	2.9	PI 88788	RR2X	4,975	4.0	55.9
P3 Genetics	2029E	2.9	PI 88788	E3	4,700	5.7	55.6
LATHAM	L 2894 E3	2.8	PI 88788	E3	4,100	3.6	55.4
Hoegemeyer HPT	3591 E	3.5	PI 88788	E3	4,000	5.7	55.3
Stine	30EB32	3.0	PI 88788	E3	3,600	6.5	55.2
Beck	3546FP	3.5	PI 88788	LLGT27	4,100	7.5	55.1
Dyna-Gro	S32EN01	3.2	PI 88788	E3	5,825	7.3	55.1
NuTech Seed	36N03E	3.6	PI 88788	E3	6,375	4.6	54.5
LG Seeds	LGS3202RX	3.2	PI 88788	RR2X	4,200	4.7	54.3
Hoegemeyer HPT	2970 E	2.9	PI 88788	E3	2,600	4.3	54.0
Stine	34EA12	3.4	PI 88788	E3	2,300	1.5	54.0

Table 8. Leighton (SC Iowa) continued.

Brand	Variety	Relative Maturity	Resistance	Herbicide Technology ¹	SCN # (eggs/100cc) ²	SCN RF ³	Yield (bu/acre)
Hoegemeyer HPT	3030 E	3.0	PI 88788	E3	5,025	3.3 	53.9 
Stine	31EB02	3.1	PI 88788	E3	3,850	4.8 	53.7 
Cornelius	CB30X09	3.0	PI 88788	RR2X	3,450	1.9 	53.6 
LATHAM	L 3329 E3	3.3	PI 88788	E3	3,575	3.0 	53.6 
Merschman	Kennedy 1936E	3.6	PI 88788	E3	4,650	8.1 	53.6 
Stine	33EC02	3.3	PI 88788	E3	3,125	3.8 	53.6 
Merschman	Eisenhower 1939E	3.9	PI 88788	E3	3,975	8.4 	53.4 
Merschman	Hayes 2034LLGT27	3.4	PI 88788	LLGT27	3,775	3.8 	53.2 
NuTech Seed	39N05E	4.0	PI 88788	E3	4,825	4.9 	53.2 
LATHAM	L 3192 E3	3.1	PI 88788	E3	2,925	3.1 	53.0 
Beck	3910E3	3.9	PI 88788	E3	3,000	3.3 	52.4 
FS HiSoy	HS 35B00	3.5	PI 88788	LLGT27	4,750	4.6 	51.0 
Stine	36EA02	3.6	PI 88788	E3	3,825	3.2 	50.2 
Merschman	Monroe 2037E	3.7	PI 88788	E3	5,375	2.9 	49.5 
Stine	32EB02	3.2	PI 88788	E3	3,975	2.5 	49.5 
Dyna-Gro	S36ES70	3.6	PI 88788	E3	6,225	7.3 	48.8 
NK	S37-2E3	3.7	PI 88788	E3	6,625	4.4 	46.6 
FS HiSoy	HS 38E90	3.8	PI 88788	E3	3,775	2.3 	45.8 
	Mean	3.3	-	-	4,576	4.8	56.2
	LSD ⁴ (P = 0.10)	-	-	-	NS	-	3.6
<i>Beck</i>	<i>2992FP</i>	<i>2.9</i>	<i>None</i>	<i>LLGT27</i>	<i>2,875</i>	<i>2.3</i> 	<i>60.2</i> 
<i>Asgrow</i>	<i>AG27X8</i>	<i>2.7</i>	<i>None</i>	<i>RR2X</i>	<i>6,750</i>	<i>6.6</i> 	<i>52.4</i> 
<i>Iowa State</i>	<i>IA3051RA12</i>	<i>3.2</i>	<i>None</i>	<i>None</i>	<i>3,525</i>	<i>3.5</i> 	<i>50.6</i> 
	Mean	2.9	-	-	4,383	4.1	54.4

Values presented in tables are means. Entries are listed in decreasing order of yield.

Italicized entries are widely available SCN-susceptible varieties entered by Iowa State University for comparison purposes.

¹ GT = glyphosate tolerant, RR2Y = Roundup Ready 2 Yield[®], RR2X = Roundup Ready 2 Xtend[®], LL = LibertyLink[®], LLGT27 = LibertyLink[®] GT27[™], E3 = Enlist E3[™]. May not reflect all herbicide tolerances. Consult product literature or seed dealer for more complete information.

² Final SCN egg population density (eggs per 100 cc soil); there were no significant differences among initial SCN population densities; initial SCN population 1,081 eggs per 100 cc soil; HG type 2- (23.2% on PI 88788, 2.4% on Peking).

³ Reproductive factor (RF) = average final SCN egg population density / average initial SCN egg population density; RF 1.0 = no change in SCN population density over growing season.

⁴ Least significant difference: values are from Fisher's least-significant-difference test, NS = no significant differences among the varieties.

Table 9. Fruitland (SE Iowa).

Brand	Variety	Relative Maturity	Resistance	Herbicide Technology ¹	SCN # (eggs/100cc) ²	SCN RF ³	Yield (bu/acre)
Jacobsen	5888E3	2.8	PI 88788	RR2X	825	0.5	65.2
P3 Genetics	1928E	2.8	PI 88788	E3	750	0.4	65.1
P3 Genetics	2034E	3.4	PI 88788	E3	600	0.4	64.2
Stine	34EA12	3.4	PI 88788	E3	1,025	0.7	63.8
Asgrow	AG36X6	3.6	PI 88788	RR2X	1,450	1.1	63.1
Asgrow	AG30X9	3.0	PI 88788	RR2X	1,700	1.2	63.0
LATHAM	L 2894 E3	2.8	PI 88788	E3	650	0.4	63.0
Hoegemeyer HPT	3350 E	3.3	PI 88788	E3	775	0.2	62.5
NK	S28-E3	2.8	PI 88788	E3	725	0.3	62.3
Kruger	K2X-3662	3.6	PI 88788	RR2X	2,450	0.9	62.2
Asgrow	AG37X9	3.7	PI 88788	RR2X	2,075	1.1	62.1
Beck	3546FP	3.5	PI 88788	LLGT27	1,950	0.7	61.9
Dyna-Gro	S35EN99	3.5	PI 88788	E3	2,000	1.5	61.7
Pioneer	P33A53X	3.3	PI 88788	RR2X	4,125	3.2	61.6
Asgrow	AG32X0	3.2	PI 88788	RR2X	1,475	1.0	61.4
LATHAM	L 3448 R2X	3.4	PI 88788	RR2X	1,250	0.9	61.4
Asgrow	AG33X0	3.3	PI 88788	RR2X	1,900	1.1	60.9
Stine	33EC02	3.3	PI 88788	E3	925	0.8	60.6
NK	S35-E3	3.5	PI 88788	E3	3,325	2.1	60.4
NK	S30-M9X	3.0	PI 88788	RR2X	3,550	1.8	60.3
Stine	30EB32	3.0	PI 88788	E3	500	0.2	60.3
NK	S27-M8X	2.7	PI 88788	RR2X	1,775	1.5	60.0
Jacobsen	878NR2X	2.8	PI 88788	RR2X	1,675	1.1	59.9
Beck	3447X2	3.4	PI 88788	RR2X	1,150	0.9	59.8
LG Seeds	LGS3777RX	3.7	PI 88788	RR2X	1,350	1.2	59.6
Kruger	K2X-3552	3.5	PI 88788	RR2X	3,450	2.0	59.5
Merschman	Truman 2038LLGT27	3.8	PI 88788	LLGT27	1,100	0.7	59.5
Hoegemeyer HPT	2970 E	2.9	PI 88788	E3	1,250	1.0	59.3
Pioneer	P31A22X	3.1	PI 88788	RR2X	1,975	0.8	59.3
Pioneer	P37A27X	3.7	PI 88788	RR2X	2,200	1.2	59.2
Cornelius	CB27X81	2.7	PI 88788	RR2X	925	0.8	59.0
Federal Hybrids	F2880N	2.8	PI 88788	RR2X	1,175	0.9	58.9
LG Seeds	LGS3600RX	3.6	PI 88788	RR2X	3,525	2.7	58.8
Asgrow	AG27X0	2.7	PI 88788	RR2X	1,725	1.0	58.7
Stine	31EB02	3.1	PI 88788	E3	1,775	0.8	58.7
Cornelius	CB30X09	3.0	PI 88788	RR2X	1,400	1.1	58.6
Dyna-Gro	S32EN01	3.2	PI 88788	E3	1,175	0.7	58.5
FS HiSoy	HS 35B00	3.5	PI 88788	LLGT27	2,475	1.9	58.5
LG Seeds	LGS3733RX	3.7	PI 88788	RR2X	3,025	1.8	58.5
LATHAM	L 3192 E3	3.1	PI 88788	E3	1,450	0.5	58.4
NuTech Seed	36N03E	3.6	PI 88788	E3	4,550	3.5	58.4
Cornelius	CB33X17	3.3	PI 88788	RR2X	2,150	1.7	58.2
Beck	3442FP	3.4	PI 88788	LLGT27	1,525	1.1	58.1
NK	S31-E3S	3.1	PI 88788	E3	1,900	0.9	57.9
Merschman	Hayes 2034LLGT27	3.4	PI 88788	LLGT27	1,775	1.3	57.8
Pioneer	P39A58X	3.9	PI 88788	RR2X	4,875	1.7	57.7
Merschman	Eisenhower 1939E	3.9	PI 88788	E3	2,125	1.5	57.4
NK	S30-E3	3.0	PI 88788	E3	650	0.4	57.1
LG Seeds	LGS3060RX	3.0	PI 88788	RR2X	3,075	1.6	57.0
NuTech Seed	35N03E	3.5	PI 88788	E3	2,275	1.2	57.0
Hoegemeyer HPT	LL3220 N	3.2	Peking	LL	150	0.1	56.7

Table 9. Fruitland (SE Iowa) continued.

Brand	Variety	Relative Maturity	Resistance	Herbicide Technology ¹	SCN # (eggs/100cc) ²	SCN RF ³	Yield (bu/acre)
P3 Genetics	2029E	2.9	PI 88788	E3	1,950	1.7	56.6
Beck	3789X2	3.7	PI 88788	RR2X	4,350	3.6	56.5
Hoegemeyer HPT	3591 E	3.5	PI 88788	E3	1,925	1.8	56.5
NuTech Seed	39N05E	4.0	PI 88788	E3	1,325	1.3	56.5
NuTech Seed	39N04E	3.8	PI 88788	E3	2,175	1.2	56.4
Asgrow	AG29X9	2.9	PI 88788	RR2X	1,425	0.8	56.0
Kruger	K2X-3384	3.3	PI 88788	RR2X	1,125	1.0	55.9
LG Seeds	LGS3202RX	3.2	PI 88788	RR2X	3,200	2.2	55.8
Stine	32EB02	3.2	PI 88788	E3	1,775	0.9	55.7
Merschman	Kennedy 1936E	3.6	PI 88788	E3	1,375	0.6	55.6
LATHAM	L 3329 E3	3.3	PI 88788	E3	2,150	1.0	55.5
Hoegemeyer HPT	3030 E	3.0	PI 88788	E3	1,925	1.3	54.9
Stine	36EA02	3.6	PI 88788	E3	1,075	0.5	54.8
Dyna-Gro	S36ES70	3.6	PI 88788	E3	1,475	0.7	53.9
Beck	3910E3	3.9	PI 88788	E3	1,600	1.1	53.6
NK	S37-2E3	3.7	PI 88788	E3	2,875	1.4	53.3
Merschman	Monroe 2037E	3.7	PI 88788	E3	1,225	1.0	52.3
FS HiSoy	HS 38E90	3.8	PI 88788	E3	2,350	2.9	52.2
	Mean	3.3	-	-	1,868	1.2	58.8
	LSD ⁴ (P = 0.10)	-	-	-	1,684	-	3.8
<i>Beck</i>	<i>2992FP</i>	<i>2.9</i>	<i>None</i>	<i>LLGT27</i>	<i>375</i>	<i>0.5</i>	<i>62.8</i>
<i>Asgrow</i>	<i>AG27X8</i>	<i>2.7</i>	<i>None</i>	<i>RR2X</i>	<i>2,350</i>	<i>0.9</i>	<i>52.7</i>
<i>Iowa State</i>	<i>IA3051RA12</i>	<i>3.2</i>	<i>None</i>	<i>None</i>	<i>2,425</i>	<i>1.3</i>	<i>50.6</i>
	Mean	2.9	-	-	1,716	0.9	55.4

Values presented in tables are means. Entries are listed in decreasing order of yield.

Italicized entries are widely available SCN-susceptible varieties entered by Iowa State University for comparison purposes.

¹ GT = glyphosate tolerant, RR2Y = Roundup Ready 2 Yield®, RR2X = Roundup Ready 2 Xtend®, LL = LibertyLink®, LLGT27 = LibertyLink® GT27™, E3 = Enlist E3™. May not reflect all herbicide tolerances. Consult product literature or seed dealer for more complete information.

² Final SCN egg population density (eggs per 100 cc soil); there were no significant differences among initial SCN population densities; initial SCN population 1,684 eggs per 100 cc soil; HG type 2- (44.7% on PI 88788, 0.3% on Peking).

³ Reproductive factor (RF) = average final SCN egg population density / average initial SCN egg population density; RF 1.0 = no change in SCN population density over growing season.

⁴ Least significant difference: values are from Fisher's least-significant-difference test, NS = no significant differences among the varieties.

Table 10. Seed treatments used on varieties evaluated in 2020.

Brand	Seed Treatment	Brand	Seed Treatment
Asgrow	Acceleron [®] Standard, ILeVO [®]	LATHAM*	CruiserMaxx [®] Vibrance [®]
Beck	Escalate [®] , Nemasect [™] , SDS+	Legacy Seeds*	Tripidity [®] , Heads Up [®]
Cornelius	Profit Guard + [™] , Saltro [®]	LG Seeds	AgriShield [®] MAX, Saltro [®]
Dyna-Gro	Equity [®] VIP, Saltro [®]	Merschman	Bonus Coated + [™] , Saltro [®]
Federal Hybrids*	Maximum ArmourGuard [™] , ILeVO [®]	NK	CruiserMaxx [®] Vibrance [®] , Saltro [®]
Four Star Seed	Spirato 348 [®]	Nutech	Lumisena [™] , Gaucho, ILeVO [®]
FS HiSOY*	Acceleron [®] FI, Saltro [®]	Pioneer	LumiGEN [™]
Hoegemeyer HPT	LumiGEN [™] , ILeVO [®]	P3 Genetics	Profit Guard + [™] , Saltro [®]
Jacobsen	SaluTecST, ILeVO [®]	Stine	CruiserMaxx [®] Vibrance [®]
Kruger	Acceleron [®] FI, ILeVO [®]		

* Following are exceptions to the seed treatment information listed above:

- Federal Hybrids variety F2880N did not contain ILeVO[®]
- LATHAM varieties L 1995 E3, L 3192, and L 2839 LLGT27 contained Soyshield Plus[™], Latham varieties L 2839 LLGT27 and L 2894 E3 contained Soyshield[™]
- Legacy Seeds variety LS252-20 received L-Coat Total
- SCN susceptible checks were treated with CruiserMaxx[®] Vibrance[®], with exception to Beck 2992FP which was treated with Escalate[®]

Table 11. Contact information for companies represented in 2020 variety trials.

Bayer Crop Sciences (ASGROW) phone: 319-290-9008 website: www.asgrow.com	GROWMARK, Inc. (FS HiSOY) phone: 309-557-6399 website: www.fsseeds.com	LG Seeds phone: 402-443-6288 website: www.lgseeds.com
Beck's Hybrids phone: 515-318-8272 website: www.beckshybrids.com	Jacobsen Seed phone: 319-430-9433 website: www.jacobsenseed.com	Merschman Seeds phone: 800-848-7333 website: www.merschmanseeds.com
Cornelius Seed phone: 563-672-3463 website: www.corneliusseed.com	Hoegemeyer Hybrids phone: 800-245-4631 website: www.therightseed.com	NuTech Seed phone: 515-681-9092 website: www.nutechseed.com
Corteva (Pioneer) phone: 515-535-3200 website: www.pioneer.com	Kruger Seeds phone: 515-238-4572 website: www.krugerseed.com	Nutrien Ag Solutions (Dyna-Gro) phone: 402-340-9153 website: www.dynagroseed.com
Federal Hybrids phone: 712-830-9742 website: www.federalhybrids.com	Latham Hi-Tech Seeds phone: 641-692-3258 website: www.lathamseeds.com	P3 Genetics phone: 563-672-3463 website: www.corneliusseed.com
Four Star Seed Company phone: 712-644-1400 website: www.4starseed.com	LEGACY SEEDS phone: 715-538-3238 website: www.legacyseeds.com	Stine Seed Company phone: 515-677-2605 website: www.stinseed.com
		Syngenta (NK) phone: 712-253-4913 website: www.nkseeds.com