

**Evaluation of Soybean Varieties Resistant to
Soybean Cyst Nematode in Iowa**

2001

**Gregory L. Tylka, Gregory D. Gebhart, and
Christopher C. Marett
Department of Plant Pathology
Iowa State University**

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Evaluation of Soybean Varieties Resistant to Soybean Cyst Nematode in Iowa in 2001

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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 growers. Each year, public and private SCN-resistant soybean varieties are evaluated in SCN-infested and noninfested 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

In northern Iowa, 19 conventional and 26 Roundup Ready[®], SCN-resistant soybean varieties were evaluated in SCN-infested fields near LuVerne (race 3) in northwest Iowa, and near Mason City (race 3) in northeast Iowa and in noninfested fields near LuVerne in northwest Iowa and near Greene in northeast Iowa. Six conventional and four Roundup Ready[®], SCN-susceptible varieties also were planted in the experiments. Plots were four, 17-foot-long rows spaced 30 inches apart and were planted at a rate of 10 seeds per foot, with four replications per variety. Preplant herbicide was applied to each location. Conventional post-emergent herbicides were applied to the conventional varieties and Roundup[®] herbicide was applied to the Roundup Ready[®] varieties.

In central Iowa, 14 conventional and 34 Roundup Ready[®], SCN-resistant soybean varieties were evaluated in SCN-infested fields near Scranton (race 1) in west central Iowa and at the Iowa State University Bruner Farm near Ames (race 3) in central Iowa and in noninfested fields near Arcadia in west central Iowa and near Boxholm in central Iowa. Four conventional and three Roundup Ready[®], SCN-susceptible varieties also were planted in the experiments. Plots were four, 17-foot-long rows spaced 30 inches apart and were planted at a rate of 10 seeds per foot, with four replications per variety. Preplant herbicide was applied to each location. Conventional post-emergent herbicides were applied to the conventional varieties and Roundup[®] herbicide was applied to the Roundup Ready[®] varieties.

In southern Iowa, 20 Roundup Ready[®], SCN-resistant soybean varieties were evaluated in SCN-infested fields near Lenox (race 3) in southwest Iowa and near Crawfordsville (race 14) in southeast Iowa and in noninfested fields near Griswold in southwest Iowa and at the Iowa State University Southeast Research and Demonstration Farm near Crawfordsville in southeast Iowa. Three Roundup Ready[®], SCN-susceptible varieties also were planted in the experiments. Plots were four 17-foot-long rows spaced 30 inches apart and were planted at a rate of 10 seeds per foot, with four replications per variety. Preplant herbicide and Roundup[®] herbicide were applied to each location.

Plant stand (number of plants per foot) was assessed in each plot 35 to 40 days after planting. Maturity notes were taken at one infested location in each district. A variety was considered

mature when 95 percent of the pods had turned brown. Just prior to harvest, average plant height and lodging (1=all plants fully erect, 5=all plants flat) were assessed in each plot. For all locations, total seed weight per plot and seed moisture were determined, and total plot seed weights subsequently were converted to bushels per acre.

At the beginning of the growing season, plots in the infested fields were sampled for the presence of SCN. Soil samples, consisting of ten 1-inch-diameter, 6- to 8-inch-deep soil cores, were collected from the center 14 feet of the center two rows of each plot either immediately after planting or within a week after planting. SCN cysts were extracted from each soil sample, and SCN eggs were extracted from the cysts and counted. SCN egg populations also were determined for each plot at the end of the growing season at the infested fields in an identical manner.

Conventional varieties and Roundup[®] varieties were grouped and results were analyzed separately.

Summary

The results of the experiments described in this report were consistent and dramatic. The data convincingly illustrate the benefits of utilizing SCN-resistant soybean varieties for management of this important soybean pest. Throughout the experiments, most of the soybean varieties with SCN resistance had greater yields than susceptible varieties in fields infested with SCN, although some resistant varieties had greater yields than others. In noninfested fields, the average yields of the resistant varieties evaluated were within a few bushels per acre of the susceptible varieties evaluated. Furthermore, several SCN-resistant varieties actually had greater yields than the best-yielding susceptible varieties in noninfested fields. End-of-season SCN population densities were significantly greater in plots where susceptible varieties were grown relative to plots planted with resistant varieties. Nematode control is an extremely important aspect of growing SCN-resistant soybean varieties that must be considered when selecting soybean varieties.

Growing soybean varieties in SCN-infested fields in an attempt to maximize soybean yields in the short term without any consideration of the effect of the varieties on SCN population densities will seriously reduce the long-term soybean productivity of the land.

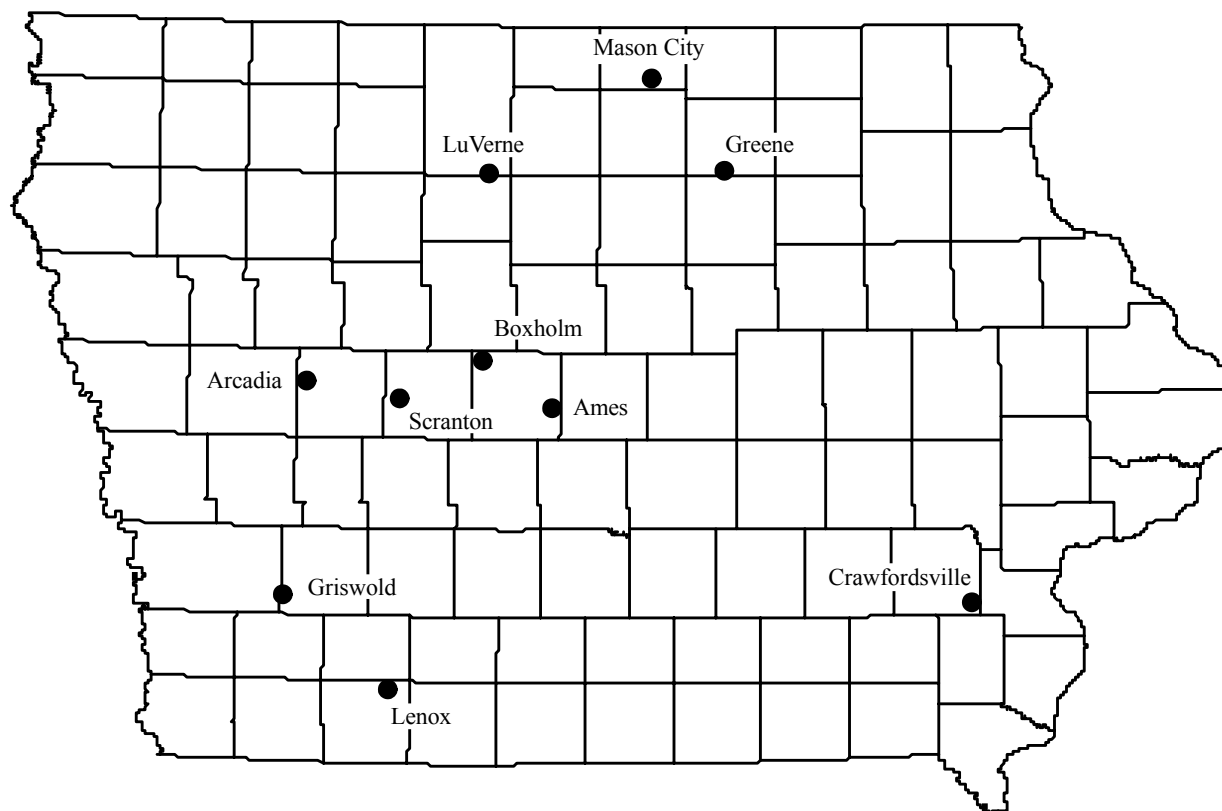
The results of these experiments illustrate that SCN-resistant varieties can suppress SCN reproduction and provide increased soybean yields relative to using susceptible varieties. However, comparison of the yields of SCN-resistant varieties in infested fields and in nearby noninfested fields at each of the six paired experimental locations in 2001 revealed that most of the resistant varieties also suffered some yield loss. Consequently, resistant varieties must be used in an integrated management program, along with the use of nonhost crops and scouting for early detection of SCN, to maximize yields and minimize reproduction of the pest on a long-term basis.

The data presented in this report are from a limited number of locations and should be used only as a beginning point for developing a SCN management program for any specific field. Performance of individual SCN-resistant soybean varieties in SCN-infested fields will vary among locations and years. **Growers are encouraged to evaluate several SCN-resistant soybean varieties at their own locations to determine the best varieties for their local conditions.**

Acknowledgments

This research was supported, in part, by Iowa soybean checkoff funds administered through the Iowa Soybean Promotion Board. Additionally, the individual seed companies were assessed a fee to enter varieties into these experiments. Appreciation is expressed to the staff of the Iowa State University Southeast and Armstrong Research and Demonstration Farms, especially Kevin VanDee, and to Bruce Voss and the “Farm Crew” of the Iowa State University Agronomy Department. Gratitude also is expressed to George and Dave Hanselman of LuVerne, Randy Lutz of Mason City, Verlyn Schrage of Greene, Duane Wright of Scranton, Mike Haubrich of Arcadia, David Cramer of Boxholm, Jack Fehring of Lenox, and Layne Twinam of Crawfordsville for use of land for some of the experiments. Printing and distribution costs for this publication were paid for by the Iowa State University Extension Integrated Pest Management program.

Map of 2001 Locations



Additional Information about SCN

There are several Iowa State University Extension publications available containing information about SCN. The biology, life cycle, and recommended management of SCN are described in publication PM 879, Soybean Cyst Nematode. Publication PM 1649, Soybean Cyst Nematode-Resistant Soybean Varieties for Iowa, lists soybean varieties with resistance to SCN. Publication IPM 47s, Scouting for Soybean Cyst Nematode, illustrates the recommended procedures for scouting for SCN. Finally, publication PD 32, Plant Nematode Sample Submission Form, is the form that should be submitted with soil samples to the Iowa State University Plant Disease Clinic for testing for SCN. All of these publications should be available at your county extension office or can be ordered by telephone from the office of Extension Distribution Center (515) 294-5247.

Table 1. Location Summary.

Location	Soil Type	Planting Date	Harvest Date	Herbicide Trt.	----- Yield ----- (bushels per acre)			--- Final SCN Population Density --- (eggs per 100 cc soil)		
					resistant	susceptible	LSD ¹	resistant	susceptible	LSD ¹
NW Infested (Luverne)	Nicollet loam	30 May	12 Oct.	Conventional	45.5	40.9	2.4	4,729	9,542	2,701
				Roundup®	46.4	44.7	1.6	3,247	7,625	1,346
NW Noninfested (Luverne)	Nicollet loam	31 May	None	Conventional	-----hailed out-----			-	-	-
				Roundup®	-----hailed out-----			-	-	-
NE Infested (Mason City)	Clyde silty clay loam	16 May	10 Oct.	Conventional	52.7	51.1	NS	4,190	8,017	1,653
				Roundup®	52.1	53.1	NS	5,797	13,345	2,253
NE Noninfested (Greene)	Kenyon silty clay loam	16 May	6 Oct.	Conventional	50.4	49.9	NS	-	-	-
				Roundup®	47.4	52.1	1.4	-	-	-
WC Infested (Scranton)	Wadena loam	12 May	6 Oct.	Conventional	41.8	25.2	3.6	4,412	12,791	2,980
				Roundup®	40.0	26.3	3.8	4,089	11,875	2,153
WC Noninfested (Arcadia)	Marshall silty clay loam	12 May	15 Oct.	Conventional	64.3	64.6	NS	-	-	-
				Roundup®	65.5	67.5	NS	-	-	-
C Infested (Ames)	Canisteo silty clay loam	18 May	15 Oct.	Conventional	42.5	27.0	4.0	3,558	17,225	4,971
				Roundup®	40.3	28.6	3.5	4,961	13,608	2,846
C Noninfested (Boxholm)	Nicollet loam	17 May	11 Oct.	Conventional	55.0	53.9	NS	-	-	-
				Roundup®	51.0	53.3	NS	-	-	-
SW Infested (Lenox)	Winterset silty clay loam	2 May	4 Oct.	Roundup®	52.3	46.2	3.9	4,573	14,467	3,565
SW Noninfested (Griswold)	Marshall silty clay loam	18 May	17 Oct.	Roundup®	51.1	51.5	NS	-	-	-
SE Infested (Crawfordsville)	Mahaska silty clay loam	11 June	18 Oct.	Roundup®	44.6	38.4	4.3	5,991	15,158	6,013
SE Noninfested (Crawfordsville)	Mahaska silty clay loam	10 June	29 Oct.	Roundup®	50.2	51.7	NS	-	-	-

¹Least significant difference: values are from Fisher's least-significant-difference test (P = 0.05), NS = no significant differences among the varieties.

Table 2. Soybean cyst nematode (SCN) reproduction and agronomic performance of conventional varieties in northwest Iowa (LuVerne) in an SCN-infested field and a noninfested field in 2001.

Brand	Variety	Relative Maturity	SCN-Infested Field							Noninfested Field				
			Maturity Date	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank	SCN # ⁽¹⁾ (100 cc)	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank
Public	Bell	1.9	9/26	7.8	36.3	2.3	42.3	18	1,338	7.2	---	---	---	---
Public	Freeborn	1.7	9/26	8.5	33.8	1.8	42.8	15	2,075	9.7	---	---	---	---
KSC/Challenger	K-2021 SCN	2.0	9/27	7.7	29.5	1.3	37.8	24	14,300	8.0	---	---	---	---
Public	BSR 101 (S) ²	1.9	9/27	7.3	36.5	1.5	39.3	21	7,475	7.5	---	---	---	---
Prairie Brand Seed Co.	PB-198N	1.9	9/27	6.2	29.0	1.3	39.5	20	14,250	8.6	---	---	---	---
NK Brand	X118 ³	1.8	9/28	7.8	31.8	1.5	49.9	3	1,400	9.4	---	---	---	---
Public	IA1008	1.9	9/29	7.4	37.3	1.5	45.9	12	3,675	6.8	---	---	---	---
Prairie Brand Seed Co.	PB-210N	2.1	9/29	6.2	31.3	1.5	46.9	8	2,025	8.0	---	---	---	---
Stine Seed Company	1892-2	1.9	9/29	8.8	34.0	2.0	47.6	6	1,275	10.7	---	---	---	---
Kruger Seed Company	K-2220+SCN	2.2	9/29	9.8	30.0	1.5	48.5	5	2,463	7.4	---	---	---	---
Public	IA2021 (S) ²	2.5	10/1	7.5	30.3	2.5	39.2	22	10,825	9.1	---	---	---	---
Pioneer	9234 ⁴	2.3	10/1	6.2	34.8	2.0	45.7	13	1,188	7.2	---	---	---	---
Thompson Seeds	T-3241	2.4	10/1	5.5	33.0	1.5	46.1	11	7,250	7.8	---	---	---	---
Public	IA2036	2.7	10/2	7.7	39.0	3.0	42.2	19	3,213	7.5	---	---	---	---
KSC/Challenger	K-2323 SCN ⁵	2.3	10/2	8.2	33.3	1.8	46.6	10	5,588	9.1	---	---	---	---
Pioneer	9233 (S) ²	2.3	10/2	8.3	36.3	2.0	51.1	2	7,450	9.6	---	---	---	---
Ramy International LTD	R-2200 CN	2.2	10/2	8.0	40.0	3.3	52.0	1	2,713	9.2	---	---	---	---
Public	Hardin 91 (S) ²	1.8	10/3	7.2	35.5	1.8	34.3	25	10,250	8.0	---	---	---	---
Public	Kenwood 94 (S) ²	2.5	10/3	5.9	34.0	2.0	39.1	23	14,050	7.2	---	---	---	---
Dennis Ewing Farm Seed	DeSoy 2434 SCN	2.4	10/3	6.2	32.0	2.0	42.7	16	19,025	7.5	---	---	---	---
Ramy International LTD	R-2575 CN	2.5	10/3	8.4	35.3	2.0	47.3	7	2,600	9.7	---	---	---	---
Latham Seed Company	352CN Brand	1.9	10/3	8.7	40.0	2.8	49.3	4	2,338	8.8	---	---	---	---
Stine Seed Company	2180 (S) ²	2.3	10/4	5.4	28.5	2.3	42.5	17	7,200	6.7	---	---	---	---

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Table 2. Continued.

Brand	Variety	Relative Maturity	SCN-Infested Field							Noninfested Field				
			Maturity Date	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank	SCN # ⁽¹⁾ (100 cc)	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank
Public	Dwight	2.9	10/6	4.9	32.8	2.0	44.3	14	1,713	5.2	---	---	---	---
Garst Seed Company	Garst D259N	2.7	10/6	7.5	33.0	3.0	46.9	8	1,425	7.8	---	---	---	---
LSD ⁶		---	2	1.7	3.4	0.7	4.9	---	5,430	2.0	---	---	---	---

Values presented in table are means. Infested plots were planted on 30 May 2001 and harvested on 11 October 2001. Noninfested plots were planted on 31 May 2001 and lost to hail before harvest. Entries are listed in order of maturity date in the infested location, then by increasing order of yield in the infested location. Unless otherwise noted, source of resistance is PI 88.788.

¹Final SCN egg population density (eggs per 100 cc soil); there were no significant differences among initial SCN population densities; average initial SCN population 4,123 eggs per 100 cc soil; field infested with race 3 SCN.

²Susceptible check variety.

³Experimental variety.

⁴Peking source of resistance.

⁵PI 437.654 source of resistance.

⁶Least significant difference: values are from Fisher's least-significant-difference test (P = 0.05), NS = no significant differences among the varieties.

Table 3. Soybean cyst nematode (SCN) reproduction and agronomic performance of Roundup Ready[®] varieties in northwest Iowa (LuVerne) in an SCN-infested field and a noninfested field in 2001.

Brand	Variety	Relative Maturity	SCN-Infested Field							Noninfested Field				
			Maturity Date	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank	SCN # ⁽¹⁾ (100 cc)	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank
Dennis Ewing Farm Seed	DeSoy 202 RR/SCN	2.0	9/27	6.9	39.8	2.0	43.1	27	975	8.8	---	---	---	---
Pioneer	92B05 (S) ²	2.0	9/28	8.1	29.3	1.3	40.8	30	7,775	10.4	---	---	---	---
United Suppliers, Inc.	US E1802RR ³	1.8	9/29	8.2	32.8	2.0	43.9	26	5,625	9.0	---	---	---	---
NK Brand	S18-U9	1.8	9/29	8.4	34.3	2.0	45.0	22	1,863	8.3	---	---	---	---
Golden Harvest	X11905RR ³	1.9	9/29	8.7	34.5	2.3	46.9	12	6,150	9.5	---	---	---	---
Latham Seed Company	227RRN Brand	1.9	9/29	8.9	33.8	2.0	46.9	12	3,163	10.1	---	---	---	---
Thompson Seeds	T-7178 CR	1.7	9/30	7.8	30.8	2.0	44.1	24	5,975	8.0	---	---	---	---
Prairie Brand Seed Co.	PB-1809NRR	1.8	9/30	7.9	32.5	2.0	45.4	21	4,400	8.2	---	---	---	---
Stine Seed Company	1902-4	2.1	9/30	8.5	35.3	2.0	46.9	12	1,350	9.6	---	---	---	---
Merschman Seeds, Inc.	Navaho VIIRR	2.2	9/30	9.5	33.0	1.5	47.2	9	2,513	10.6	---	---	---	---
KSC/Challenger	K-231 RR/SCN	2.3	9/30	7.5	32.5	1.8	49.3	2	1,913	9.9	---	---	---	---

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Table 3. Continued.

Brand	Variety	Relative Maturity	SCN-Infested Field							Noninfested Field				
			Maturity Date	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank	SCN # ⁽¹⁾ (100 cc)	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank
Kruger Seed Company	K-199 RR/SCN	1.9	10/1	7.8	32.0	2.0	44.1	24	7,000	8.5	---	---	---	---
ProfiSeed	PS 422 NRR	2.2	10/1	7.1	33.3	2.3	46.8	15	2,425	9.7	---	---	---	---
Ramy International LTD	R-2350 CNRR	2.3	10/1	8.0	31.3	2.0	46.8	15	1,663	8.8	---	---	---	---
Merschman Seeds, Inc.	Lakota RR	2.2	10/1	8.3	32.8	2.3	47.1	10	4,300	10.3	---	---	---	---
United Suppliers, Inc.	US S2201RR	2.2	10/1	7.6	34.3	1.8	47.3	7	1,625	8.1	---	---	---	---
Latham Seed Company	547RRN Brand	2.2	10/1	7.8	32.5	1.8	47.4	6	2,738	9.5	---	---	---	---
Growmark, Inc.	HS 2106	2.1	10/1	8.1	34.3	1.3	51.3	1	1,513	8.6	---	---	---	---
Asgrow	AG 2301(S) ²	2.3	10/2	7.6	30.3	1.0	42.2	29	6,500	7.6	---	---	---	---
Golden Harvest	H-2348RR	2.3	10/2	8.0	32.8	2.0	44.7	23	3,850	9.0	---	---	---	---
ProfiSeed	PS 423 NRR	2.3	10/2	7.4	33.5	2.3	45.9	20	2,463	7.6	---	---	---	---
Growmark, Inc.	RT 2396	2.3	10/2	8.5	25.3	2.3	46.8	15	3,638	9.8	---	---	---	---
Ottilie RO Seed	RO 8235 RRN	2.3	10/2	6.8	32.3	2.0	46.8	15	5,275	8.8	---	---	---	---
Garst Seed Company	AgriPro/Garst 2112 RR/N	2.1	10/4	7.9	29.8	3.3	42.5	28	2,438	10.1	---	---	---	---
Pioneer	92B71 (S) ²	2.7	10/4	8.9	33.8	1.5	46.8	15	5,700	9.3	---	---	---	---
Growmark, Inc.	HS 2606	2.6	10/4	8.2	37.0	1.8	47.0	11	2,438	9.7	---	---	---	---
Wilson Genetics, L. L. C.	2350 RR (S) ²	2.3	10/4	7.3	33.5	2.0	47.6	5	8,500	8.5	---	---	---	---
Kruger Seed Company	K-252 RR/SCN	2.5	10/4	8.8	33.3	2.3	48.8	3	5,900	8.8	---	---	---	---
Garst Seed Company	AgriPro/Garst 2612 RR/N	2.6	10/5	8.3	30.8	1.8	47.3	7	1,650	8.8	---	---	---	---
Dennis Ewing Farm Seed	DeSoy 262 RR/SCN	2.6	10/6	5.3	32.5	1.8	48.3	4	1,575	8.5	---	---	---	---
LSD⁴		---	2	1.5	5.2	0.8	4.1	---	3,524	NS	---	---	---	---

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Values presented in table are means. Infested plots were planted on 30 May 2001 and harvested on 12 October 2001. Noninfested plots were planted on 31 May 2001 and lost to hail before harvest. Entries are listed in increasing order of maturity date in the infested location, then by increasing order of yield in the infested location. Unless otherwise noted, source of resistance is PI 88.788.

¹Final SCN egg population density (eggs per 100 cc soil); there were no significant differences among initial SCN population densities; average initial SCN population 5,978 eggs per 100 cc soil; field infested with race 3 SCN.

²Susceptible check variety.

³Experimental variety.

⁴Least significant difference: values are from Fisher's least-significant-difference test (P = 0.05), NS = no significant differences among the varieties.

Table 4. Soybean cyst nematode (SCN) reproduction and agronomic performance of conventional varieties in northeast Iowa in an SCN-infested field (Mason City) and a noninfested field (Greene) in 2001.

Brand	Variety	Relative Maturity	SCN-Infested Field							Noninfested Field				
			Maturity Date	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank	SCN # ⁽¹⁾ (100 cc)	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank
Public	Freeborn	1.7	---	9.0	34.0	2.5	48.8	23	2,525	9.0	38.5	2.0	46.7	21
Public	Bell	1.9	---	7.5	37.3	2.5	50.7	18	2,100	7.9	40.0	2.0	45.8	24
KSC/Challenger	K-2021 SCN	2.0	---	9.1	34.0	1.8	51.1	15	8,750	8.0	40.5	1.8	51.7	10
Public	BSR 101 (S) ²	1.9	---	7.3	38.5	2.0	51.2	14	9,125	9.4	43.0	2.3	46.0	22
Prairie Brand Seed Co.	PB-198N	1.9	---	7.5	35.5	1.5	52.0	13	5,400	7.8	41.5	2.0	52.2	8
NK Brand	X118 ³	1.8	---	8.1	32.5	2.0	57.2	2	5,450	9.2	38.0	1.3	53.0	4
Public	IA1008	1.7	---	7.4	40.8	2.0	53.0	11	3,225	7.5	44.3	2.0	49.2	16
Prairie Brand Seed Co.	PB-210N	2.1	---	8.7	32.8	1.5	53.7	9	3,388	7.7	39.0	2.0	51.2	12
Kruger Seed Company	K-2220+SCN	2.2	---	11.0	34.0	1.8	56.0	5	3,513	7.9	40.0	1.5	53.0	4
Stine Seed Company	1892-2	1.9	---	10.4	36.8	2.5	57.5	1	2,425	10.1	40.3	2.8	51.2	12
Thompson Seeds	T-3241	2.4	---	6.4	38.0	1.8	49.3	22	7,850	8.0	42.0	1.5	53.9	2
Public	IA2021 (S) ²	2.5	---	10.0	34.8	2.8	51.1	16	8,000	8.5	39.0	2.3	52.3	7
Pioneer	9234 ⁴	2.3	---	6.5	37.5	2.3	56.5	3	1,988	8.2	41.3	2.0	49.2	16
Public	IA2036	2.7	---	8.4	42.0	3.3	50.2	19	3,250	7.5	44.8	4.0	48.3	19
KSC/Challenger	K-2323 SCN ⁵	2.3	---	9.4	38.0	2.0	51.1	16	8,025	9.3	41.8	1.8	51.9	9
Pioneer	9233 (S) ²	2.3	---	8.7	37.8	2.0	54.6	6	8,775	8.0	42.8	2.3	53.4	3
Ramy International LTD	R-2200 CN	2.2	---	8.6	41.5	3.0	56.4	4	3,200	8.2	44.8	3.0	50.2	15
Dennis Ewing Farm Seed	DeSoy 2434 SCN	2.4	---	6.9	36.0	2.0	45.6	25	8,200	7.6	40.8	2.0	50.8	14
Public	Hardin 91 (S) ²	1.8	---	8.2	40.8	3.0	47.4	24	6,850	10.4	41.3	4.0	44.4	25
Public	Kenwood 94 (S) ²	2.5	---	6.4	38.0	2.3	49.6	20	10,675	7.1	44.3	2.3	48.0	20
Ramy International LTD	R-2575 CN	2.5	---	9.2	37.0	2.0	54.5	8	4,500	9.5	43.3	2.0	48.9	18
Latham Seed Company	352CN Brand	1.9	---	8.2	45.5	3.5	54.6	6	863	8.2	45.0	3.3	51.4	11
Stine Seed Company	2180 (S) ²	2.3	---	7.0	35.3	2.5	53.0	11	4,675	7.8	40.8	1.8	55.1	1

Table 4. Continued.

Brand	Variety	Relative Maturity	SCN-Infested Field							Noninfested Field				
			Maturity Date	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank	SCN # ⁽¹⁾ (100 cc)	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank
Public	Dwight	2.9	---	5.6	35.8	2.5	49.5	21	2,950	5.6	40.5	2.0	46.0	22
Garst Seed Company	Garst D259N	2.7	---	7.4	41.0	2.3	53.3	10	2,000	8.1	41.0	2.8	52.4	6
LSD ⁶			---	1.8	3.4	0.6	4.0	---	4,389	2.1	1.7	0.5	3.4	---

Values presented in table are means. Infested plots were planted on 16 May 2001 and harvested on 10 October 2001. Noninfested plots were planted on 16 May 2001 and harvested on 6 October 2001. Entries are listed in order of maturity date in the northwest infested location, then by increasing order of yield in the infested location. Unless otherwise noted, source of resistance is PI 88.788.

¹Final SCN egg population density (eggs per 100 cc soil); there were no significant differences among initial SCN population densities; average initial SCN population 5,475 eggs per 100 cc soil; field infested with race 3 SCN.

²Susceptible check variety.

³Experimental variety.

⁴Peking source of resistance.

⁵PI 437.654 source of resistance.

⁶Least significant difference: values are from Fisher's least-significant-difference test (P = 0.05), NS = no significant differences among the varieties.

Table 5. Soybean cyst nematode (SCN) reproduction and agronomic performance of Roundup Ready[®] varieties in northeast Iowa in an SCN-infested field (Mason City) and a noninfested field (Greene) in 2001.

Brand	Variety	Relative Maturity	SCN-Infested Field							Noninfested Field				
			Maturity Date	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank	SCN # ⁽¹⁾ (100 cc)	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank
Dennis Ewing Farm Seed	DeSoy 202 RR/SCN	2.0	---	7.1	42.3	2.3	53.0	9	3,088	9.5	44.3	2.3	45.0	27
Pioneer	92B05 (S) ²	2.0	---	9.9	32.5	2.0	47.5	30	13,488	10.8	40.5	1.5	51.8	4
Latham Seed Company	227RRN Brand	1.9	---	8.5	38.3	2.3	49.2	28	10,025	9.4	42.5	2.0	48.7	11
United Suppliers, Inc.	US E1802RR ³	1.8	---	8.0	40.3	2.5	50.3	23	9,725	10.0	42.8	2.0	48.3	13
Golden Harvest	X11905RR ³	1.9	---	9.3	37.5	2.8	50.9	17	5,683	10.6	42.5	2.3	49.0	9
NK Brand	S18-U9	1.8	---	7.8	33.8	1.5	51.1	15	1,475	8.5	40.0	1.8	43.0	30
Thompson Seeds	T-7178 CR	1.7	---	8.2	39.3	2.8	50.7	20	10,350	8.5	42.5	2.3	46.4	20
Prairie Brand Seed Co.	PB-1809NRR	1.8	---	7.8	37.5	2.3	50.9	17	10,925	9.9	41.5	1.8	44.8	28
KSC/Challenger	K-231 RR/SCN	2.3	---	8.5	38.0	2.0	51.7	12	2,800	9.3	40.8	1.8	45.7	25
Stine Seed Company	1902-4	2.1	---	8.2	36.3	1.8	52.4	11	4,200	9.4	41.8	1.8	48.5	12
Merschman Seeds, Inc.	Navaho VIIRR	2.2	---	9.6	38.0	2.3	52.5	10	3,550	10.8	41.5	2.0	44.7	29

Table 5. Continued.

Brand	Variety	Relative Maturity	SCN-Infested Field							Noninfested Field				
			Maturity Date	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank	SCN # ⁽¹⁾ (100 cc)	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank
Merschman Seeds, Inc.	Lakota RR	2.2	---	7.8	37.0	2.5	49.0	29	4,988	10.8	43.5	2.0	46.0	23
Ramy International LTD	R-2350 CNRR	2.3	---	7.8	36.0	2.0	49.5	27	3,613	9.3	42.0	1.8	47.5	16
United Suppliers, Inc.	US S2201RR	2.2	---	6.5	37.0	2.0	49.6	26	2,863	8.9	43.0	1.8	46.5	19
Kruger Seed Company	K-199 RR/SCN	1.9	---	8.1	36.8	2.0	50.3	23	11,150	9.1	41.8	2.3	45.7	25
Latham Seed Company	547RRN Brand	2.2	---	9.3	37.8	2.0	50.9	16	3,700	10.4	41.5	2.0	46.9	18
ProfiSeed	PS 422 NRR	2.2	---	8.6	35.3	2.0	51.7	12	4,475	9.1	41.8	1.8	48.0	14
Growmark, Inc.	HS 2106	2.1	---	8.7	34.0	1.5	57.9	3	2,713	9.8	42.0	1.8	50.7	7
Growmark, Inc.	RT 2396	2.3	---	7.8	36.8	2.3	50.6	21	7,988	11.0	42.3	2.3	47.3	17
ProfiSeed	PS 423 NRR	2.3	---	7.6	36.3	2.5	50.6	21	6,675	10.9	43.3	2.3	46.4	20
Golden Harvest	H-2348RR	2.3	---	8.0	36.5	2.5	50.8	19	9,025	9.0	43.0	2.0	47.9	15
Ottilie RO Seed	RO 8235 RRN	2.3	---	6.7	37.5	2.8	51.6	14	5,550	9.8	42.8	2.0	49.0	9
Asgrow	AG 2301(S) ²	2.3	---	8.3	35.0	1.0	55.6	5	15,925	8.7	40.5	1.0	51.5	5
Pioneer	92B71 (S) ²	2.7	---	9.1	36.0	2.0	50.1	25	11,075	9.8	43.8	1.8	52.7	2
Garst Seed Company	AgriPro/Garst 2112 RR/N	2.1	---	7.5	36.0	2.3	53.5	8	4,063	9.6	39.0	2.8	49.3	8
Growmark, Inc.	HS 2606	2.6	---	7.5	41.5	1.8	55.4	6	4,613	9.8	42.5	1.0	46.0	23
Kruger Seed Company	K-252 RR/SCN	2.5	---	8.5	37.0	2.0	58.7	2	10,425	11.4	40.3	2.0	51.1	6
Wilson Genetics, L. L. C.	2350 RR (S) ²	2.3	---	7.0	37.0	2.5	60.8	1	9,688	9.9	41.8	1.8	52.4	3
Garst Seed Company	AgriPro/Garst 2612 RR/N	2.6	---	8.2	34.3	1.8	55.1	7	2,938	9.3	36.8	1.3	46.1	22
Dennis Ewing Farm Seed	DeSoy 262 RR/SCN	2.6	---	6.6	34.5	2.0	57.1	4	4,088	9.5	40.0	1.0	54.9	1
LSD ⁴			---	1.6	3.6	0.7	3.8	---	5,757	NS	1.6	0.6	3.2	---

Values presented in table are means. Infested plots were planted on 16 May 2001 and harvested on 10 October 2001. Noninfested plots were planted on 16 May 2001 and harvested on 6 October 2001. Entries are listed in order of maturity date in the northwest infested location, then by increasing order by yield in the infested location. Unless otherwise noted, source of resistance is PI 88.788.

¹Final SCN egg population density (eggs per 100 cc soil); there were no significant differences among initial SCN population densities; average initial SCN population 5,140 eggs per 100 cc soil; field infested with race 3 SCN.

²Susceptible check variety.

³Experimental variety.

⁴Least significant difference: values are from Fisher's least-significant-difference test (P = 0.05), NS = no significant differences among the varieties.

Table 6. Soybean cyst nematode (SCN) reproduction and agronomic performance of conventional varieties in westcentral Iowa in an

Brand	Variety	Relative Maturity	SCN-Infested Field							Noninfested Field				
			Maturity Date	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank	SCN # ⁽¹⁾ (100 cc)	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank
Pioneer	9234	2.3	---	5.9	28.0	2.0	44.4	5	3,250	9.3	33.0	1.5	57.0	18
Public	IA2021 (S) ²	2.5	---	7.3	23.3	2.0	29.9	14	20,000	8.8	31.3	1.8	64.1	9
Public	IA2036	2.7	---	7.5	29.5	2.8	38.0	12	4,950	6.5	38.3	3.0	61.4	16
Thompson Seeds	T-3241	2.4	---	7.6	25.0	2.0	27.0	15	9,500	7.7	32.0	1.0	63.4	12
Pioneer	92B71 (S) ²	2.7	---	7.9	22.8	1.8	26.0	17	9,725	8.8	32.0	1.0	63.0	13
Garst Seed Company	Garst D259N	2.5	---	9.2	24.8	2.0	35.9	13	5,325	8.3	32.0	1.3	63.7	11
Public	Kenwood 94 (S) ²	2.5	---	6.6	23.5	1.8	18.4	18	9,788	7.6	33.8	2.0	62.1	14
Public	Dwight	2.9	---	5.0	24.5	2.0	40.6	11	3,725	6.5	31.3	1.0	64.8	7
Golden Harvest	XO2632 ³	2.6	---	6.6	27.0	2.0	41.8	8	2,250	8.5	33.8	1.3	66.2	5
Kruger Seed Company	K-2666 SCN	2.6	---	8.1	28.8	2.0	42.1	7	2,825	8.6	32.0	1.0	61.0	17
Pioneer	9306 (S) ²	3.0	---	6.6	25.3	1.5	26.6	16	11,650	8.5	33.0	1.8	69.4	2
Pioneer	92B91	2.9	---	6.8	31.5	2.5	41.1	10	2,825	7.4	38.5	2.0	65.4	6
NK Brand	S30-Y8	3.0	---	8.3	27.3	1.8	41.8	8	5,763	7.7	32.3	1.0	68.2	4
United Suppliers, Inc.	US S291	2.9	---	7.9	29.5	2.0	46.2	3	3,738	7.5	35.5	1.3	64.6	8
KSC/Challenger	K-2999 SCN	2.9	---	7.8	31.8	2.0	49.9	1	4,300	8.4	35.5	2.0	63.9	10
KSC/Challenger	K-2919 SCN	2.9	---	8.4	29.3	2.0	46.1	4	3,475	8.5	35.5	2.0	68.5	3
Growmark, Inc.	X 2911 ³	2.9	---	8.1	29.3	2.0	47.2	2	3,900	9.1	34.8	2.0	69.9	1
Public	IA3014	3.0	---	8.3	30.0	2.3	43.5	6	5,938	8.7	36.5	2.0	61.7	15
LSD ⁴			---	1.5	3.3	0.4	5.5	---	7,422	NS	1.7	0.4	2.9	---

Values presented in table are means. Infested plots were planted on 12 May 2001 and harvested on 6 October 2001. Noninfested plots were planted on 12 May 2001 and harvested on 15 October 2001. Entries are listed in order of maturity date in the central infested location, then by increasing order of yield in the infested location. Unless otherwise noted, source of resistance is PI 88.788.

¹Final SCN egg population density (eggs per 100 cc soil); there were no significant differences among initial SCN population densities; average initial SCN population 8,268 eggs per 100 cc soil; field infested with race 1 SCN.

²Susceptible check variety.

³Experimental variety.

⁴Least significant difference: values are from Fisher's least-significant-difference test (P = 0.05), NS = no significant differences among the varieties.

Table 7. Soybean cyst nematode (SCN) reproduction and agronomic performance of Roundup Ready® varieties in westcentral Iowa in an

Brand	Variety	Relative Maturity	SCN-Infested Field							Noninfested Field				
			Maturity Date	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank	SCN # ⁽¹⁾ (100 cc)	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank
Golden Harvest	H-2348RR	2.3	---	6.3	25.3	1.5	27.7	34	6,775	8.2	33.0	1.0	58.0	35
Thompson Seeds	T-7227 CR	2.2	---	8.1	24.8	2.0	37.5	25	4,038	9.1	31.0	1.0	61.5	33
KSC/Challenger	K-232-1 RR/SCN	2.3	---	7.5	25.3	1.8	32.0	32	4,250	9.5	32.8	1.0	57.9	36
United Suppliers, Inc.	US S2201RR	2.2	---	6.9	25.8	2.0	35.6	29	3,813	9.4	33.5	1.0	65.2	20
Stine Seed Farm	Stine 2302-4	2.3	---	7.9	26.3	2.0	42.8	13	1,950	7.7	33.5	1.0	61.6	32
Garst Seed Company	AgriPro/Garst 2112 RR/N	2.1	---	8.7	25.5	1.8	40.9	16	2,925	9.4	30.5	1.0	62.0	31
Dekalb	DKB26-52	2.6	---	8.1	31.5	2.0	44.4	8	6,025	11.0	39.3	2.0	66.6	15
Prairie Brand	PB-2505NRR	2.5	---	5.8	19.8	1.0	24.6	36	3,975	7.7	30.0	1.0	62.8	27
Pioneer	92B74 (S) ²	2.7	---	6.8	23.5	1.5	26.0	35	6,350	9.2	32.3	1.0	72.3	2
Pioneer	92B71 (S) ²	2.7	---	8.5	24.5	1.5	28.5	33	9,425	9.3	33.8	1.5	64.1	24
Prairie Brand	PB-2204NRR	2.2	---	7.6	25.5	1.8	35.5	31	5,525	7.5	32.0	1.3	65.1	21
Latham Seed Company	747RRN Brand	2.6	---	5.0	28.8	1.5	35.6	29	3,650	4.4	33.3	1.3	60.9	34
NK Brand	S26-H2	2.6	---	8.2	28.8	1.8	39.0	19	4,838	11.0	37.3	1.8	62.9	26
ProfiSeed	PS 426 NRR	2.6	---	7.2	30.3	2.0	41.5	15	3,075	9.7	39.5	2.0	67.4	11
Merschman Seeds, Inc.	Shawnee VIII RR	2.6	---	8.8	33.5	2.0	43.6	10	3,963	10.1	38.8	2.0	67.1	13
Kruger Seed Company	K-252 RR/SCN	2.5	---	9.3	27.8	1.8	38.6	22	5,138	10.4	33.3	1.0	65.1	21
Garst Seed Company	AgriPro/Garst 2612 RR/N	2.6	---	8.8	25.0	1.8	45.1	5	5,150	9.6	27.3	1.0	63.2	25
Golden Harvest	H-2748RR	2.7	---	8.1	28.3	2.0	38.8	21	4,075	8.5	37.5	1.8	62.8	27
Dennis Ewing Farm Seed	DeSoy 262 RR/SCN	2.6	---	7.4	24.5	2.0	37.6	24	3,350	7.8	32.5	1.0	68.3	10
Dennis Ewing Farm Seed	DeSoy 266 RR/SCN	2.6	---	8.6	27.3	2.0	38.9	20	1,775	10.1	36.3	1.5	65.5	18
Merschman Seeds, Inc.	Mohegan IV RR	2.6	---	7.7	29.3	2.0	40.0	18	3,038	10.2	36.3	1.0	62.2	30
Pioneer	93B01 (S) ²	3.0	---	9.9	23.5	1.8	24.5	37	19,850	9.4	33.5	1.0	66.3	16
Stine Seed Company	Stine 2502-4	2.5	---	9.4	31.5	2.0	41.7	14	3,325	9.0	35.5	1.0	62.5	29
Kruger Seed Company	K-288 RR/SCN	2.8	---	7.3	30.0	2.0	47.0	2	4,225	8.5	34.8	1.0	65.1	21
ProfiSeed	PS 4291 NRR	2.9	---	7.3	27.8	2.0	44.4	8	5,713	8.0	33.3	1.5	72.9	1
Trelay Seed Company	2283 RR/SCN	2.8	---	7.9	29.5	2.0	44.7	7	5,150	8.5	34.3	1.3	67.4	11

Table 7. Continued.

Brand	Variety	Relative Maturity	SCN-Infested Field							Noninfested Field				
			Maturity Date	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank	SCN # ⁽¹⁾ (100 cc)	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank
Dennis Ewing Farm Seed	DeSoy 282-1 RR/SCN	2.8	---	7.2	29.0	2.0	38.5	23	2,238	8.4	36.3	2.0	66.7	14
Stine Seed Farm	Stine 2602-4	2.7	---	8.1	26.8	1.8	43.0	12	4,850	10.3	31.5	1.3	72.1	3
NK Brand	X129R ³	2.9	---	8.6	28.3	1.8	36.3	28	3,925	10.1	35.3	1.0	57.9	37
Prairie Brand	PB-2781NRR	2.7	---	5.2	30.5	1.8	37.3	27	3,538	5.6	35.8	1.5	65.4	19
Latham Seed Company	EX 957RRN Brand	3.2	---	7.6	25.8	2.0	40.6	17	3,738	9.6	33.3	1.3	70.7	7
Ottilie RO Seed	RO 8282 RRN	2.8	---	8.9	27.3	1.8	46.6	3	4,563	10.5	33.0	1.5	71.2	5
Merschman Seeds, Inc.	Cherokee XRR	2.9	---	7.9	28.0	2.0	48.2	1	5,225	7.8	32.8	1.0	69.4	9
Growmark, Inc.	HS 3005	3.0	---	9.2	29.3	1.8	37.5	25	1,200	10.0	36.8	1.0	65.9	17
Wilson Genetics, L. L. C.	2960 RR/SCN ⁴	2.9	---	7.6	26.8	2.0	43.1	11	4,288	9.4	32.8	1.5	70.1	8
Stine Seed Company	Stine 2802-4	2.8	---	7.6	27.5	2.0	45.0	6	3,400	9.0	32.8	1.5	71.9	4
Growmark, Inc.	HS 2906	2.9	---	7.3	29.8	2.0	46.3	4	6,325	9.0	32.3	1.8	71.2	5
LSD ⁵			---	1.6	3.9	0.5	6.1	---	4,774	2.1	1.5	0.5	3.7	---

Values presented in table are means. Infested plots were planted on 12 May 2001 and harvested on 6 October 2001. Noninfested plots were planted on 12 May 2001 and harvested on 15 October 2001. Entries are listed in order of maturity date in the central infested location, then by increasing order of yield in the infested location. Unless otherwise noted, source of resistance is PI 88.788.

¹Final SCN egg population density (eggs per 100 cc soil); there were no significant differences among initial SCN population densities; average initial SCN population 7,586 eggs per 100 cc soil; field infested with race 1 SCN.

²Susceptible check variety.

³Experimental variety.

⁴Peking source of resistance.

⁵Least significant difference: values are from Fisher's least-significant-difference test (P = 0.05), NS = no significant differences among the varieties.

Table 8. Soybean cyst nematode (SCN) reproduction and agronomic performance of conventional varieties in central Iowa in an SCN-infested field (Ames) and a noninfested field (Boxholm) in 2001.

Brand	Variety	Relative Maturity	SCN-Infested Field							Noninfested Field				
			Maturity Date	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank	SCN # ⁽¹⁾ (100 cc)	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank
Pioneer	9234	2.3	9/23	6.6	31.0	1.8	43.4	9	550	7.8	31.3	2.0	50.6	18
Public	IA2021 (S) ²	2.5	9/26	9.1	27.5	1.5	23.6	18	25,650	8.8	30.3	2.0	53.3	13
Public	IA2036	2.7	9/26	7.3	37.8	2.5	40.4	11	1,838	8.8	41.5	3.0	54.4	12
Thompson Seeds	T-3241	2.4	9/27	7.4	26.0	1.0	26.9	16	24,150	7.9	31.0	1.0	55.2	7
Pioneer	92B71 (S) ²	2.7	9/28	7.5	24.3	1.3	27.6	15	14,400	7.6	32.8	1.0	55.3	6

Table 8. Continued.

Brand	Variety	Relative Maturity	SCN-Infested Field							Noninfested Field				
			Maturity Date	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank	SCN # ⁽¹⁾ (100 cc)	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank
Garst Seed Company	Garst D259N	2.5	9/30	6.8	32.8	2.0	47.6	2	1,863	6.7	33.8	1.8	56.1	4
Public	Kenwood 94 (S) ²	2.5	10/1	5.7	31.0	1.8	26.5	17	16,225	6.2	34.8	2.0	51.8	15
Public	Dwight	2.9	10/1	5.3	28.5	1.5	35.6	13	2,138	7.4	31.8	2.0	51.8	15
Kruger Seed Company	K-2666 SCN	2.6	10/1	7.2	32.3	1.3	44.1	7	938	7.3	34.8	1.3	55.0	9
Golden Harvest	XO2632 ³	2.6	10/1	7.4	32.3	1.8	45.6	4	2,388	6.2	32.0	1.5	55.2	7
Pioneer	9306 (S) ²	3.0	10/2	7.5	31.0	1.5	30.2	14	12,625	6.4	35.3	1.8	55.4	5
United Suppliers, Inc.	US S291	2.9	10/2	8.5	37.8	2.3	42.6	10	3,050	7.6	35.5	2.3	52.9	14
KSC/Challenger	K-2999 SCN	2.9	10/2	7.3	37.8	2.0	43.7	8	4,438	8.4	35.7	1.7	54.9	11
Pioneer	92B91	2.9	10/2	9.1	43.0	2.3	45.0	6	1,425	7.6	43.0	2.5	55.0	9
NK Brand	S30-Y8	3.0	10/2	8.1	31.0	1.5	45.1	5	1,925	8.8	33.0	1.5	57.2	3
KSC/Challenger	K-2919 SCN	2.9	10/3	7.8	33.8	2.0	46.7	3	688	8.5	35.0	2.5	59.5	2
Growmark, Inc.	X 2911 ³	2.9	10/3	9.1	35.3	2.0	49.6	1	838	6.6	34.3	2.0	60.8	1
Public	IA3014	3.0	10/7	7.8	34.5	2.0	38.1	12	3,588	4.6	38.0	3.0	51.6	17
LSD⁴		--	2	1.4	4.9	0.6	7.8	--	10,658	NS	3.2	0.5	4.3	--

Values presented in table are means. Infested plots were planted on 18 May 2001 and harvested on 15 October 2001. Noninfested plots were planted on 17 May 2001 and harvested on 11 October 2001. Entries are listed in order of maturity date in the infested location, then by increasing order of yield in the infested location. Unless otherwise noted, source of resistance is PI 88.788.

¹Final SCN egg population density (eggs per 100 cc soil); there were no significant differences among initial SCN population densities; average initial SCN population 3,321 eggs per 100 cc soil; field infested with race 3 SCN.

²Susceptible check variety.

³Experimental variety.

⁴Least significant difference: values are from Fisher's least-significant-difference test (P = 0.05), NS = no significant differences among the varieties.

Table 9. Soybean cyst nematode (SCN) reproduction and agronomic performance of Roundup Ready[®] varieties in central Iowa in an SCN-infested field (Ames) and a noninfested field (Boxholm) in 2001.

Brand	Variety	Relative Maturity	SCN-Infested Field							Noninfested Field				
			Maturity Date	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank	SCN # ⁽¹⁾ (100 cc)	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank
Golden Harvest	H-2348RR	2.3	9/22	8.4	32.8	1.3	34.8	30	12,725	7.1	30.5	2.0	47.1	35
Thompson Seeds	T-7227 CR	2.2	9/22	7.8	29.8	1.3	42.6	11	5,138	9.6	31.8	1.3	51.2	20
KSC/Challenger	K-232-1 RR/SCN	2.3	9/23	7.8	28.8	2.0	32.8	32	11,950	5.5	30.3	1.7	47.2	33

Table 9. Continued.

Brand	Variety	Relative Maturity	SCN-Infested Field							Noninfested Field				
			Maturity Date	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank	SCN # ⁽¹⁾ (100 cc)	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank
United Suppliers, Inc.	US S2201RR	2.2	9/24	7.8	30.5	1.3	40.0	20	1,838	10.1	31.5	1.0	50.6	22
Stine Seed Farm	Stine 2302-4	2.3	9/25	7.8	31.0	2.0	44.5	5	1,225	9.1	32.3	1.0	51.4	19
Garst Seed Company	AgriPro/Garst 2112 RR/N	2.1	9/27	9.5	28.3	1.5	39.0	24	2,800	6.0	27.0	1.3	49.0	28
Dekalb	DKB26-52	2.6	9/27	9.1	34.5	2.0	45.8	2	3,200	7.5	43.0	2.8	55.8	2
Pioneer	92B71 (S) ²	2.7	9/28	8.5	28.0	1.0	24.5	37	14,375	11.1	32.8	1.0	53.5	11
Prairie Brand	PB-2505NRR	2.5	9/28	5.9	24.0	1.5	29.3	35	17,100	2.7	29.3	1.7	46.2	36
Pioneer	92B74 (S) ²	2.7	9/28	7.4	25.0	1.3	31.4	34	14,100	6.8	30.3	1.8	54.6	4
Latham Seed Company	747RRN Brand	2.6	9/28	5.2	30.0	1.3	32.8	32	2,838	5.6	31.8	1.8	48.1	60
Prairie Brand	PB-2204NRR	2.2	9/28	7.2	29.8	1.8	40.1	19	12,950	5.0	29.3	1.7	47.5	32
Merschman Seeds, Inc.	Shawnee VIII RR	2.6	9/28	8.2	31.8	1.8	42.4	12	4,363	8.8	36.5	2.0	56.4	1
NK Brand	S26-H2	2.6	9/28	8.9	34.8	2.0	43.7	9	2,450	10.6	35.8	1.5	50.8	21
ProfiSeed	PS 426 NRR	2.6	9/28	7.3	37.8	2.0	47.9	1	3,463	7.8	28.3	2.0	54.6	4
Kruger Seed Company	K-252 RR/SCN	2.5	9/29	8.1	30.0	1.3	36.3	28	9,025	7.3	30.5	1.8	52.3	14
Garst Seed Company	AgriPro/Garst 2612 RR/N	2.6	9/29	7.5	28.0	1.0	41.4	17	4,288	6.4	26.8	1.3	47.2	33
Golden Harvest	H-2748RR	2.7	9/30	6.9	36.8	2.0	44.3	6	4,875	7.7	36.8	1.8	49.6	26
Dennis Ewing Farm Seed	DeSoy 262 RR/SCN	2.6	10/1	7.6	29.5	2.0	39.3	23	5,500	7.4	30.8	2.0	53.5	9
Merschman Seeds, Inc.	Mohegan IVRR	2.6	10/2	8.5	34.0	1.5	39.0	24	2,850	9.4	35.5	1.0	51.9	16
Dennis Ewing Farm Seed	DeSoy 266 RR/SCN	2.6	10/2	8.8	32.8	1.5	42.2	13	5,375	8.2	31.3	1.5	48.0	31
Pioneer	93B01 (S) ²	3.0	10/3	9.1	30.0	1.0	29.9	35	12,350	10.7	30.8	1.0	51.9	16
Stine Seed Company	Stine 2502-4	2.5	10/3	10.4	36.0	2.0	39.8	21	2,125	9.4	38.0	1.3	50.2	23
Kruger Seed Company	K-288 RR/SCN	2.8	10/3	7.2	33.0	1.8	43.5	10	3,325	5.3	35.7	2.0	49.7	25
Trelay Seed Company	2283 RR/SCN	2.8	10/4	8.3	34.8	2.0	42.0	14	2,938	7.1	35.5	1.8	49.3	27
ProfiSeed	PS 4291 NRR	2.9	10/4	6.8	32.3	2.0	45.1	4	1,600	7.7	31.8	1.8	51.5	18
Dennis Ewing Farm Seed	DeSoy 282-1 RR/SCN	2.8	10/5	7.0	35.5	2.0	39.8	21	2,525	6.5	35.0	2.0	53.9	7
Stine Seed Farm	Stine 2602-4	2.7	10/5	8.4	31.8	1.8	44.3	6	3,463	10.9	31.3	1.3	55.3	3

Table 9. Continued.

Brand	Variety	Relative Maturity	SCN-Infested Field							Noninfested Field				
			Maturity Date	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank	SCN # ⁽¹⁾ (100 cc)	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank
Prairie Brand	PB-2781NRR	2.7	10/6	7.2	32.0	2.0	33.9	31	4,700	5.0	34.8	2.0	49.8	24
NK Brand	X129R ³	2.9	10/6	9.0	32.0	2.0	35.3	29	6,013	5.6	32.7	1.7	41.3	37
Latham Seed Company	EX 957RRN Brand	3.2	10/6	7.9	31.3	1.8	41.6	16	3,825	8.5	30.0	1.0	53.6	8
Ottilie RO Seed	RO 8282 RRN	2.8	10/6	9.8	30.8	1.8	44.0	8	6,750	10.9	30.0	1.0	53.5	9
Merschman Seeds, Inc.	Cherokee XRR	2.9	10/6	8.8	31.0	2.0	45.8	2	4,100	9.7	31.8	2.0	52.2	15
Wilson Genetics, L. L. C.	2960 RR/SCN ⁴	2.9	10/7	6.7	32.0	2.0	37.7	27	3,950	7.8	31.0	2.0	52.7	13
Growmark, Inc.	HS 3005	3.0	10/7	8.2	36.5	1.5	37.8	26	2,138	9.1	35.0	1.0	48.3	29
Stine Seed Company	Stine 2802-4	2.8	10/7	8.6	31.8	1.8	40.4	18	3,513	8.8	30.0	1.3	54.0	6
Growmark, Inc.	HS 2906	2.9	10/8	8.8	32.8	2.0	41.8	15	3,775	9.8	31.3	1.8	53.0	12
LSD ⁵		---	2	1.7	3.6	0.5	6.6	---	5,219	2.8	4.9	0.5	4.1	---

Values presented in table are means. Infested plots were planted on 18 May 2001 and harvested on 15 October 2001. Noninfested plots were planted on 17 May 2001 and harvested on 11 October 2001. Entries are listed in order of maturity date in the infested location, then by increasing order of yield in the infested location. Unless otherwise noted, source of resistance is PI 88.788.

¹Final SCN egg population density (eggs per 100 cc soil); there were no significant differences among initial SCN population densities; average initial SCN population 3,267 eggs per 100 cc soil; field infested with race 3 SCN.

²Susceptible check variety.

³Experimental variety.

⁴Peking source of resistance.

⁵Least significant difference: values are from Fisher's least-significant-difference test (P = 0.05), NS = no significant differences among the varieties.

Table 10. Soybean cyst nematode (SCN) reproduction and agronomic performance of Roundup Ready[®] varieties in southwest Iowa in an SCN-infested field (Lenox) and a noninfested field (Griswold) in 2001.

Brand	Variety	Relative Maturity	SCN-Infested Field							Noninfested Field				
			Maturity Date	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank	SCN # ⁽¹⁾ (100 cc)	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank
Garst Seed Company	AgriPro/Garst 2912 RR/N	2.9	---	8.8	27.0	1.8	46.2	21	1,600	9.1	28.0	1.0	46.6	22
Pioneer	93B01 (S) ²	3.0	---	10.2	29.3	1.5	42.4	23	13,650	9.4	31.0	1.0	50.6	12
Prairie Brand	PB-2920NRR	2.9	---	8.1	29.0	1.8	52.8	10	1,925	7.5	30.3	1.0	48.4	18
Stine Seed Company	Stine 2802-4	2.8	---	7.8	27.8	1.8	62.1	1	1,900	8.6	29.8	1.0	51.4	11
Merschman Seeds, Inc.	Grant IIRR	3.3	---	8.1	33.0	1.8	47.2	19	12,425	7.6	31.5	1.3	49.6	16
Asgrow	AG 2905	2.9	---	9.2	31.3	2.0	57.1	3	3,350	9.1	29.5	1.0	48.5	17

Table 10. Continued.

Brand	Variety	Relative Maturity	SCN-Infested Field							Noninfested Field				
			Maturity Date	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank	SCN # ⁽¹⁾ (100 cc)	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank
Stine Seed Farm	Stine 3232-4	3.2	---	8.4	32.8	1.8	43.8	22	10,933	9.0	31.3	1.0	50.1	14
Wilson Genetics, L. L. C.	3344 RR ³	3.4	---	8.5	31.8	1.8	46.5	20	7,100	8.4	30.8	1.0	48.2	19
Pioneer	93B53 (S) ²	3.5	---	8.7	33.3	1.8	47.4	18	13,175	8.0	33.8	1.0	51.5	10
Garst Seed Company	AgriPro/Garst 3112 RR/N	3.1	---	6.8	32.8	2.0	49.7	15	2,200	8.8	34.3	1.0	52.2	5
Prairie Brand	PB-3320NRR	3.3	---	7.3	34.3	2.0	55.1	5	1,363	7.3	33.5	1.5	50.4	13
Asgrow	AG 3302 (S) ²	3.3	---	8.4	34.5	2.3	48.8	17	16,575	9.8	34.0	1.0	52.5	5
Prairie Brand	PB-3520NRR	3.5	---	6.8	39.0	2.5	52.2	12	3,300	7.3	38.3	1.5	48.2	19
Growmark, Inc.	HS 3306	3.3	---	8.8	34.5	2.0	54.0	7	2,150	9.2	33.5	1.3	50.0	15
NK Brand	X133R ⁴	3.3	---	7.9	37.0	2.3	49.4	16	2,025	9.4	34.8	1.3	46.1	23
United Suppliers, Inc.	US S3301RR	3.3	---	10.8	36.0	2.3	54.4	6	1,738	7.8	33.3	1.3	51.9	7
NK Brand	X139R ⁴	3.9	---	8.8	39.0	2.0	56.7	4	1,425	11.0	36.8	2.0	47.5	21
NK Brand	X138R ⁴	3.8	---	9.0	36.3	2.5	51.2	14	2,150	7.4	34.3	1.3	52.8	4
United Suppliers, Inc.	US E3802RR ⁴	3.8	---	5.3	31.3	2.0	51.2	13	4,800	5.0	31.3	1.3	51.9	7
Growmark, Inc.	HS 3706	3.7	---	7.1	33.5	2.3	53.6	9	1,525	6.9	35.3	1.3	51.9	7
Ottilie RO Seed	RO 8370 RRN	3.7	---	8.3	31.8	2.5	57.3	2	14,950	8.1	31.3	1.0	59.1	1
Stine Seed Company	Stine 3632-4	3.4	---	7.8	29.3	2.0	52.3	11	11,375	9.1	30.5	1.0	58.1	3
Merschman Seeds, Inc.	Kennedy VIRR	3.6	---	8.6	31.3	2.5	54.0	7	4,825	8.4	31.3	1.0	58.3	2
LSD ⁵		---	---	1.4	2.9	0.6	7.7	---	6,809	1.9	1.8	0.5	4.1	---

Values presented in table are means. Infested plots were planted on 2 May 2001 and harvested on 4 October 2001. Noninfested plots were planted on 18 May 2001 and harvested on 17 October 2001. Entries are listed in order of maturity date in the southeast infested location, then by increasing order of yield in the infested location. Unless otherwise noted, source of resistance is PI 88.788.

¹Final SCN egg population density (eggs per 100 cc soil); there were no significant differences among initial SCN population densities; average initial SCN population 6,304 eggs per 100 cc soil; field infested with race 3 SCN.

²Susceptible check variety.

³Peking source of resistance.

⁴Experimental variety.

⁵Least significant difference: values are from Fisher's least-significant-difference test ($P = 0.05$), NS = no significant differences among the varieties.

Table 11. Soybean cyst nematode (SCN) reproduction and agronomic performance of Roundup Ready® varieties in southeast Iowa (Crawfordsville) in an SCN-infested field and a noninfested field in 2001.

Brand	Variety	Relative Maturity	SCN-Infested Field							Noninfested Field				
			Maturity Date	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank	SCN # ⁽¹⁾ (100 cc)	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank
Garst Seed Company	AgriPro/Garst 2912 RR/N	2.9	9/29	6.6	30.3	1.5	46.6	12	850	6.9	32.8	2.0	46.2	22
Pioneer	93B01 (S) ²	3.0	9/30	7.8	28.3	1.0	36.9	17	19,450	8.2	36.0	1.8	50.9	9
Stine Seed Company	Stine 2802-4	2.8	10/1	6.3	30.8	1.8	50.9	2	2,150	7.9	35.8	2.3	54.4	1
Prairie Brand	PB-2920NRR	2.9	10/1	6.7	31.0	2.0	51.2	1	1,850	6.3	35.5	2.8	53.3	5
Merschman Seeds, Inc.	Grant IIRR	3.3	10/2	5.9	28.3	1.5	34.8	21	12,488	6.7	37.3	2.3	54.2	3
Asgrow	AG 2905	2.9	10/2	8.3	30.8	2.0	50.7	3	3,150	7.7	36.5	2.5	50.7	11
Stine Seed Farm	Stine 3232-4	3.2	10/3	7.7	29.5	1.0	33.7	23	6,150	6.9	38.0	2.0	54.4	1
Pioneer	93B53 (S) ²	3.5	10/3	6.3	32.5	1.3	35.3	19	13,600	6.6	39.0	2.3	50.5	12
Wilson Genetics, L. L. C.	3344 RR ³	3.4	10/3	7.8	27.5	1.3	35.3	19	23,363	8.1	39.8	2.3	51.8	7
Prairie Brand	PB-3320NRR	3.3	10/4	7.1	35.5	2.0	46.7	11	1,300	6.2	40.8	2.0	47.9	19
Garst Seed Company	AgriPro/Garst 3112 RR/N	3.1	10/4	7.5	34.0	2.0	49.5	7	4,425	6.1	40.3	2.0	47.6	21
Asgrow	AG 3302 (S) ²	3.3	10/5	8.0	33.3	2.0	43.1	15	12,425	7.0	44.5	3.0	53.7	4
Prairie Brand	PB-3520NRR	3.5	10/5	6.8	39.8	2.0	48.6	9	1,438	7.2	46.5	2.5	48.6	17
Growmark, Inc.	HS 3306	3.3	10/5	7.2	35.0	2.0	50.3	4	2,163	7.2	41.8	2.8	49.7	15
NK Brand	X133R ⁴	3.3	10/6	6.7	35.8	2.3	45.5	13	1,188	7.7	43.8	3.5	45.9	23
United Suppliers, Inc.	US S3301RR	3.3	10/7	6.5	33.3	2.0	49.6	6	1,000	8.4	37.8	2.0	50.2	13
NK Brand	X139R ⁴	3.9	10/9	7.8	35.8	2.0	49.7	5	1,363	8.5	44.8	3.0	48.5	18
United Suppliers, Inc.	US E3802RR ⁴	3.8	10/12	5.6	28.5	2.3	34.8	21	4,475	5.2	38.5	2.5	51.0	8
Growmark, Inc.	HS 3706	3.7	10/12	7.0	35.0	2.0	46.9	10	675	6.2	43.0	2.3	47.8	20
NK Brand	X138R ⁴	3.8	10/12	7.1	35.5	2.3	49.4	8	1,188	7.2	41.0	2.3	49.2	16
Ottillie RO Seed	RO 8370 RRN	3.7	10/13	6.1	31.0	2.0	43.5	14	12,925	6.2	36.8	3.3	51.9	6
Stine Seed Company	Stine 3632-4	3.4	10/14	6.9	29.0	2.0	38.6	16	23,275	7.5	38.8	2.8	50.9	9

Table 11. Continued.

Brand	Variety	Relative Maturity	SCN-Infested Field							Noninfested Field				
			Maturity Date	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank	SCN # ⁽¹⁾ (100 cc)	Stand (plants/ft)	Height (inches)	Lodging (1-5)	Yield (bu/acre)	Yield Rank
Merschman Seeds, Inc.	Kennedy VIRR	3.6	10/15	5.9	29.5	1.8	35.9	18	14,415	5.6	37.5	2.8	50.0	14
LSD ⁵		---	2	NS	3.3	0.4	5.1	---	11,197	NS	3.0	0.8	3.8	---

Values presented in table are means. Infested plots were planted on 11 June 2001 and harvested on 18 October 2001. Noninfested plots were planted on 10 June 2001 and harvested on 29 October 2001. Entries are listed in order of maturity date in the infested location, then by increasing order of yield in the infested location. Unless otherwise noted, source of resistance is PI 88.788.

¹Final SCN egg population density (eggs per 100 cc soil); there were no significant differences among initial SCN population densities; average initial SCN population 3,072 eggs per 100 cc soil; field infested with race 14 SCN.

²Susceptible check variety.

³Peking source of resistance.

⁴Experimental variety.

⁵Least significant difference: values are from Fisher's least-significant-difference test (P = 0.05), NS = no significant differences among the varieties.