Jan. 1992

IA 2008 SOYBEANS

IA 2008 was developed by the Iowa Agriculture and Home Economics Experiment Station. It is a F_6 selection from the cross BSR 101 x A80-344003. Prior to release, IA 2008 was tested as A87-196014.

IA 2008 is of Group I maturity, relative maturity 105. It has white flowers, gray pubescence, tan pods at maturity, and dull seed coats with buff hila. IA 2008 carries brown stem rot resistance and the Phytophthora resistance gene Rps1 which confers resistance to race 1, 2, 10, 11, 13-18, and 24.

Plant Variety Protection, certification-only option, has been applied for.

Entry	Maturity (Date)	Yield (bu/a)	Lodging[1] (Score)	Height (in)	Protein (%)	Oil (%)
1991 4 Test Mean - Southern Wisconsin Variety Test						
BSR 101	17-Sep	48	1.8	34	34.6	18.7
IA 2008	16-Sep	57	2.6	37	33.9	18.4
Archer	15-Sep	54	1.6	36	34.4	18.7
Hardin	09-Sep	53	3.1	36	35.2	18.7
Corsoy 79	14-Sep	53	3.2	37	35.1	18.2
1991 4 Test Mean - Central Wisconsin Variety Test						
BSR 101	13-Sep	57	3.1	44	34.9	18.4
IA 2008	21-Sep	62	3.9	45	34.6	17.7
Archer	18-Sep	58	3.0	44	35.2	18.3
Hardin	13-Sep	64	3.5	44	35.9	17.8
Jack	27-Sep	65	4.7	52	35.3	18.6
Corsoy 79	21-Sep	62	3.8	47	35.7	17.8
1989-91 Arlington Tests - Uniform Test II						
IA 2008	24-Sep	49	2.6	39	----	----
Burlison	28-Sep	44	2.3	35	----	----
Corsoy 79[2]	25-Sep	47	3.6	40	----	----
1991 24 Test Mean - Uniform Test II						
IA 2008	10-Sep	47	1.9	35	37.5	21.0
Sturdy	09-Sep	46	1.6	32	39.6	21.1
Kenwood	13-Sep	50	1.9	34	37.4	21.8
Burlison	16-Sep	48	1.5	32	42.6	19.5
1989-91 68 Test Mean - Uniform Test II						
IA 2008	18-Sep	50	1.9	34	37.8	21.2
Sturdy	17-Sep	48	1.7	33	39.5	21.1
Kenwood	20-Sep	51	1.9	35	38.0	21.7
Burlison	24-Sep	49	1.6	33	42.1	19.6

[1]Score 1 (all plants erect); to 5 (all plants flat).
[2]1989 and 1990 data only.

Prepared by: E.T. Gritton and E.S. Oplinger. Dept. of Agronomy, Univeristy of Wisconsin-Madison

F1419

DISCLOSURE OF INTELLECTUAL PROPERTY TO THE IOWA STATE UNIVERSITY RESEARCH FOUNDATION

Approval is hereby requested for RELEASE and distribution of the following NEW VARIETY:

IA2008 (A87-196014) Gp. I

Pedigree:

IA2008 is an F_4 plant selection from the cross BSR 101 X A80-244003. BSR 101 is a line selected from the cross L69U40-16-4 X A76-304020 by Iowa State University. L69U40-16-4 is from the cross 'Calland' X 'Amsoy'. A76-304020 is from the cross ('Beeson' X AP68-1016) X (L15 X 'Calland'). AP68-1016 is a line selected from the cross 'Clark^5' X PI 84946-2 by Iowa State University. A80-244003 is a line selected from the cross Northrup King 'S1492' X Pella by Iowa State University.

Origin:

IA2008 was developed by Project No. 2475 of the Department of Agronomy, and Project Nos. 2732, 2766, and 2869 of the Department of Plant Pathology, Iowa State University.

Description (Taxonomic):

IA2008 has white flowers, gray pubescence, tan pods at maturity, a dull seed coat, and a buff hilum.

Performance:

The history of development of IA2008 is attached. It was tested in Iowa from 1986 to 1990 and in the Uniform Tests, Northern States from 1988 to 1990. IA2008 has a maturity similar to Archer, a public variety with brown stem rot (BSR) resistance. It is superior to Archer in yield. IA2008 has an excellent emergence rating and brown stem rot resistance. IA2008 has specific resistance to race 1 of Phytophthora rot. IA2008 is susceptible to iron-deficiency chlorosis on calcareous soil.

Reasons for Distribution:

IA2008 has brown stem rot resistance. It is equal or superior in yield to widely-grown private and public varieties of similar maturity.

Table 1. Development of the Cultivar IA2008.

Year	Activity
1984	The cross of BSR 101 X A80-244003 was made at Iowa State University-University of Puerto Rico nursery at Isabela, Puerto Rico, during March to obtain F_1 seeds. Artifical lighting was used to extend the day length to obtain flowers suitable for hybridization. The objective of the cross was to develop a new cultivar with improved yield and acceptable agronomic characteristics. The population was designated as AX3060.
1984	F_1 seeds of AX3060 were planted in the field at Iowa State University, Ames, IA to obtain F_2 seeds.
1984	F_2 seeds of AX3060 were planted during November in Puerto Rico, and the plants were grown under natural day length conditions. Three F_3 seeds of each plant were bulked.
1985	F_3 seeds of AX3060 were planted during February in Puerto Rico, and the plants were grown under natural day length conditions. Three F_4 seeds of each plant were bulked.
1985	F_4 seeds of AX3060 were planted on brown stem rot (BSR) infested soil at the Curtiss Farm near Ames. F_4 plants were classified as early, mid-season, or late maturity. Plants with BSR resistance were threshed individually.
1986	$F_{4:5}$ lines of AX3060 were evaluated in three replications of single-hill plots spaced 1 by 1 m at two Iowa locations. About 50% of the lines with the best visual agronomic characteristics were harvested for seed yield.
1987	a. Selected $F_{4:6}$ lines of AX3060 were grown in two replications of two-row plots at three Iowa locations. The line that became IA2008 was designated A87-196014. b. A87-196014 was tested for resistance in single-row plots on BSR-infested soil near Ames.
1988	a. A87-196014 was evaluated for seed yield and other characters in the Uniform Soybean Tests. b. A87-196014 was tested for BSR resistance on infested soil near Ames. c. Purification of the line was initiated at Ames. F_7 plants with uniform plant and seed traits were threshed individually.

Table 1. Development of the Cultivar IA2008.

Year	Activity
1989	a. A87-196014 was evaluated in the Uniform Soybean Tests. b. A87-196014 was tested for yield and BSR resistance on infested soil at two locations near Ames. c. Progeny rows were grown at Ames. Progeny with uniform characteristics were harvested separately.
1990	a. A87-196014 was evaluated in the Uniform Soybean Tests. b. A87-196014 was tested for yield and BSR resistance on infested soil at two locations near Ames. c. Progeny rows harvested in year 6 were used to plant about 3 ha for breeder seed production.

Table 2. Mean performance of IA2008 and other public cultivars in single-hill plots at Ames, Iowa during 1986.

Strain	Yield g/plot	Rank	Maturity Date*
IA2008	269	2	9-20
BSR 101	245	4	9-19
Corsoy 79	221	5	9-20
Elgin	298	1	9-22
Hack	256	3	9-23

* Month-Day

Table 3. Mean performance of IA2008 and other public cultivars evaluated in two-row plots at Ames, Corwith Royal, Iowa during 1987.

Strain	Yield g/plot	Rank	Maturity Date*	Lodging Score**	Plant Height In.
IA2008	2089	1	9-12	1.9	45
Hardin	1784	4	9-7	2.4	41
BSR 101	2059	2	9-11	1.3	41
Elgin	2054	3	9-13	1.6	38

* Month-Day
** 1 = Erect, 5 = Prostrate

Table 4. Mean performance of IA2008 and other public cultivars evaluated in four-row plots in the Uniform Preliminary Test I at Kanawha and Royal, Iowa during 1988.

Strain	Yield bu/a	Rank	EPVA $/A++	Maturity Date*	Lodging Score**	Plant Height In.	Seed Quality Score***	Seed Size g/100	Composition+ Protein %	Composition+ Oil %
IA2008	53.0	1	355	9-7	2.2	46	1.7	15.2	33.4	18.2
Hardin	47.8	2	334	9-5	2.8	44	2.6	14.4	34.6	19.0
Elgin 87	46.0	3	310	9-9	2.0	38	2.6	15.8	32.7	19.0

\+ Reported at 13% moisture
++ Yield (bu/a) X Estimated Processed Value/Bushel
* Month-Day
** 1 = Erect, 5 = Prostrate
*** 1 = Good, 5 = Poor

Table 5. Mean performance of IA2008 and other public cultivars evaluated in four-row plots in the Uniform Test II at Ames and Halbur, Iowa during 1989.

Strain	Yield bu/a	Rank	EPVA $/A++	Maturity Date*	Lodging Score**	Plant Height In.	Seed Quality Score***	Seed Size g/100	Composition+ Protein %	Composition+ Oil %
IA2008	49.9	2	333	9-20	1.9	42	1.5	14.9	32.7	18.6
Sturdy	50.1	1	334	9-18	2.0	40	1.8	17.8	33.4	17.9
Kenwood	49.0	3	319	9-21	2.2	38	1.2	15.1	32.5	17.7

\+ Reported at 13% moisture
++ Yield (bu/a) X Estimated Processed Value/Bushel
* Month-Day
** 1 = Erect, 5 = Prostrate
*** 1 = Good, 5 = Poor

Table 6. Mean performance of IA2008 and other public cultivars evaluated in four-row plots in the Uniform Test II at Ames, Marshalltown, and Halbur, Iowa during 1990.

Strain	Yield bu/a	Rank	EPVA $/A++	Maturity Date*	Lodging Score**	Plant Height In.	Seed Quality Score***	Seed Size g/100	Composition+ Protein %	Oil %
IA2008	55.9	2	382	9-17	2.9	38	2.0	14.2	34.9	17.8
Archer	54.5	3	374	9-15	2.0	37	2.7	17.6	34.6	18.2
Sturdy	54.2	4	379	9-17	2.2	35	2.8	17.5	35.7	18.2
Kenwood	56.8	1	390	9-20	2.3	38	2.8	16.5	35.3	17.7

\+ Reported at 13% moisture
++ Yield (bu/a) X Estimated Processed Value/Bushel
* Month-Day
** 1 = Erect, 5 = Prostrate
*** 1 = Good, 5 = Poor

Table 7. Mean performance of IA2008 and other public cultivars evaluated in four-row plots on brown stem rot-infested soil at two locations near Ames during 1989.

	Yield bu/a	Rank	Maturity Date*	Lodging Score**	Plant Height In.	BSR Plant+ %	BSR Stem++ %
IA2008	51.6	2	9-20	2.5	39	68.8	20.3
Hardin	47.8	4	9-19	3.2	40	96.2	71.0
Archer	52.0	1	9-23	3.2	36	80.0	23.4
BSR 101	49.7	3	9-23	2.5	38	85.0	29.8

* Month-Day
** 1 = Erect, 5 = Prostrate
\+ Percentage of the plants with stem browning from brown stem rot (BSR).
++ Percentage of the stem length browning from BSR.

Table 8. Mean performance of IA2008 and other public cultivars evaluated in four-row plots on brown stem rot-infested soil at two locations near Ames during 1990.

	Yield	Rank	Maturity	Lodging	Plant Height	BSR	
						Plant[+]	Stem[++]
	bu/a		Date*	Score**	In.	%	%
IA2008	48.6	4	9-18	3.7	35	52.5	7.9
Archer	50.8	3	9-20	3.2	34	53.8	10.8
Hardin	48.0	5	9-22	3.6	34	46.2	11.2
BSR 101	53.4	1	9-22	3.2	35	61.2	11.2
Marcus	53.0	2	9-23	3.1	33	77.5	22.2

* Month-Day

** 1 = Erect, 5 = Prostrate

\+ Percentage of the plants with stem browning from brown stem rot (BSR).

++ Percentage of the stem length browning from BSR.

Table 9. Two-year mean performance of IA2008 and other public cultivars evaluated in the Uniform Soybean Regional Tests II throughout the Midwest during 1989 and 1990.

Strain No. of Tests	Yield 44 bu/a	EPVA $/A++	Rank 44	Maturity 35 Date*	Lodging 44 Score**	Plant Height 44 In.	Seed Quality 40 Score***	Seed Size 44 g/100	Composition+ Protein 10 %	Oil 10 %
IA2008	51.0	343	2	9-23	1.9	34	1.8	15.2	33.0	18.7
Sturdy	50.0	343	3	9-21	1.7	33	2.0	18.1	34.3	18.4
Kenwood	52.3	355	1	9-24	1.9	35	2.1	15.9	33.3	18.8

+ Reported at 13% moisture
++ Yield (bu/a) X Estimated Processed Value per Bushel
* Month-Day
** 1 = Erect, 5 = Prostrate
*** 1 = Good, 5 = Poor

Table 10. Mean Yield of IA2008 and other public cultivars at two locations in Iowa during 1989 and three locations in 1990.

	1989		1990			Mean Yield
	Ames	Halbur	Ames	Halbur	Marshall-town	1989-1990
IA2008	51.3	48.5	51.8	58.2	57.7	53.5
Sturdy	51.3	48.9	55.3	53.2	54.0	52.5
Kenwood	51.0	47.0	54.2	56.4	59.9	53.7

Table 11. Mean performance of IA2008 compared with public and private varieties in the 1990 Iowa Soybean Yield Test at Kanawha, Royal, and Greene, Iowa

Strain	Yield bu/a	EPVA $/A++	Rank	Maturity Date Mon.-Day	Lodging Score*	Plant Height In.	Composition+ Protein %	Oil %
IA2008	51.4	364	1	9-20	2.6	35	34.3	19.9
Archer	47.7	341	6	9-20	2.0	37	34.6	20.0
Marcus	50.3	358	2	9-20	2.0	34	33.8	20.5
NK S23-12**	45.2	324	7	9-20	1.3	35	34.7	20.2
Dekalb CX264**	49.1	351	4	9-23	2.0	35	34.5	20.1
Latham 650**	50.1	358	3	9-24	2.2	35	34.7	20.0
Kenwood	48.8	344	5	9-24	2.4	36	33.8	20.2
LSD (0.05)	2.7	19	2	.2	2	1.0	.5	

+ Reported at 13% moisture
++ Yield (bu/a) X Estimated Processed Value/Bushel
* 1 = Erect and 5 = Prostrate
** Widely Grown Varieties

Table 12. Data for brown stem rot, iron-deficiency chlorosis on calcareous soil, seedling emergence, and shattering of IA2008 and other public cultivars evaluated at different locations in the Uniform Soybean Regional Test II during 1990.

	BSR-Ames		BSR-Boone		Chlorosis	Emergence	Shattering
	Plant* %	Stem** %	Plant* %	Stem** %	Score+	Score++	Score+++
IA2008***	60.0	11.2	80.0	40.1	3.4	1.0	4.0
Archer	60.0	42.4	30.0	3.1	2.0	5.0	2.0
Sturdy	100	87.5	100	89.7	2.5	5.0	2.0
Kenwood	100	68.3	100	50.4	3.1	2.0	1.0

* Percentage of plants with stem browning from brown stem rot (BSR).
** Percentage of the stem length browning from BSR.
*** Variety with moderate resistance to BSR and iron-deficiency chlorosis.
+ 1 = Little or no yellowing to 5 = severe yellowing on calcareous soil
++ 1 = Good, to 5 = Poor
+++ 1 = No shattering, to 5 = 50% shattered