Tolerance results to white mold and SDS

The Department of Plant Pathology at Iowa State University conducts an annual white mold tolerance test with funding from the Iowa Soybean Promotion Board. This year, for the first time, we also have tested varieties from commercial companies for tolerance to sudden death syndrome (SDS). The data for 1999 are presented below.

White Mold

The white mold test was conducted at Rudd, Iowa, in a field that was severely infested in 1997. Lines were planted in late May. Each variety was replicated four times in plots four rows wide and 12 feet in length with a row spacing of 13 inches. Disease incidence data were collected in mid-September. The table below lists the average tolerance score for each variety. Tolerance of each variety was measured as the percentage of plants killed. When choosing a variety, try to select one that is consistent over years and locations or that seems to perform well for growers in your area. Keep in mind that yield losses are not significant if less than 20 percent of plants are killed. Varieties with less than 30 percent of the plants killed are considered to have an acceptable level of tolerance. In fields with mild disease pressure, varieties that did not receive a high tolerance rating in our test may do well because our fields had higher disease pressure than most production fields.

Weather in this past season was not ideal for white mold development and disease occurred very late in our plots, even though our test was done in a field that had severe white mold. Therefore, it is important to note that varieties in later maturity groups have greater disease incidence in our test than those of early maturity groups. These varieties should have higher yields and less disease when grown in southern and central Iowa, their normal area of adaptation. Comparisons should be made only among entries within maturity groups.

Sudden Death Syndrome

The SDS tolerance test was conducted in a field near Ames, Iowa. To ensure uniform disease pressure across plots, we artificially infested test plots at planting with a method developed in our laboratory. Lines were planted in plots consisting of two 10-foot-long rows at eight seeds per foot with a row spacing of 30 inches. Lines were replicated three times. Lines were evaluated in early September and each line was given a numerical tolerance score from 1 to 10 based on leaf symptoms with 10 indicating 100 percent defoliation. Low scores indicate a high level of tolerance. Most entries in our tests are tolerant to this disease.

If you observed severe SDS in your field in the past few years, you may want to select varieties that are tolerant to this disease based on the information in the table below. Yield

loss may not be a concern if the tolerance score is less than 3.

ISU SDS tolerance test results (1999).

Company	Variety	Relative Maturity	Average Score
AgriPro Seeds	AP 2002 RR	2.0	1.3
AgriPro Seeds	AP 2415 RR	2.4	2.7
Asgrow Seeds	AG2903	2.9	4.3
Asgrow Seeds	AG3302	3.3	1.3
Dairyland Seeds	DSR-275	2.7	3.7
Dekalb Seeds	CX339C	2.8	0.7
Dekalb Seeds	CX284C	3.0	1.0
Dekalb Seeds	CX302C	3.3	2.7
Growmark	HS 2861		2.7
Growmark	RT 3885		2.7
Latham Seed	950 Brand	2.9	1.0
Latham Seeds	640 Brand	2.3	1.0
LG Seeds	LG6222CRR	2.2	1.7
LG Seeds	LG6278CRR	2.7	2.7
Mark Seed	9824CTA	2.4	2.3
Mark Seed	97CN22CTB	2.2	1.3
Merchman	Shawnee VIIRR	2.9	3.0
Merchman	Fillmore VRR	3.4	2.0
Naylor Seed	NS 2770	2.5	1.7
Naylor Seed	NS 2450	2.5	2.3
Novartis	S33-N1	3.3	1.3
Novartis	X9925	2.5	2.3
Ottlie Seed	8350	3.5	1.7
Ottlie Seed	8240 RR	2.4	2.0

Sands Seed	Exp 2424RR	2.4	1.3
Sands Seed	Exp 3434RR	3.4	2.3
Sieben	SS 3001RR		2.7
Sieben	SS 289		4.0
Pioneer Hi-Bred	93B82		1.7
Pioneer Hi-Bred	92B91		1.0
Tolerant control	Pharaoh		0.3
Tolerant control	Ripley		0.3
Susceptible control	Spencer		5.0
Susceptible control	P9344		4.0

ISU white mold tolerance test results (1999).

Company	Variety	Relative Maturity	Average Score	Average Yield (bu/acre)
Agri-Pro Seeds	AP2002RR	2.0	15.3	50.0
Agri-Pro Seeds	AP2415RR	2.4	31.3	39.0
Agri-Pro Seeds	AP2220	2.2	13.8	52.2
Agri-Pro Seeds	AP2889	2.8	21.3	52.8
Albert Lea Seed House	NS1903	1.9	6.5	53.5
Albert Lea Seed House	NS 1904 RR	1.9	10.3	46.2
Asgrow Seeds	AG1901	1.9	2.3	52.2
Asgrow Seeds	AG2501	2.5	12.8	37.3
Asgrow Seeds	AG2001	2.0	1.8	50.4
Dairyland Seed Co. Inc.	DSR-218	2.1	4.0	50.8
Dairyland Seed Co. Inc.	DSR-215/RR	2.1	2.3	47.6
Dairyland Seed Co. Inc.	DSR-220/STS	2.4	5.3	46.9
Dairyland Seed Co. Inc.	DSR-293/RR	2.7	8.8	35.5

Dekalb Seeds	CX195	1.9	5.3	44.4
Fontanelle Hybrids	8890 RR	3.0	38.8	56.2
Fontanelle Hybrids	8933 RR	2.3	28.8	39.8
Great Lakes Hybrids Inc	GL1715	1.7	1.3	35.5
Great Lakes Hybrids Inc	GL1902RR	1.9	10.3	39.9
Growmark	HT 261 STS		17.5	47.9
Growmark	RT 2175		2.5	54.3
Growmark	RT 2587		18.3	50.4
Latham Seed Co.	Latham 656RR Brand	2.3	15.0	48.7
Latham Seed Co.	Latham 1056RR Brand	3.0	15.3	54.6
LG Seed Inc.	LG6200	2.0	6.3	40.7
LG Seed Inc.	LG6222CRR	2.2	13.8	46.0
LG Seed Inc.	LG6284RR	2.8	9.0	45.8
LG Seed Inc.	LG6283STS	2.8	26.3	56.8
Mark Seed Co.	9519	1.9	4.0	47.3
Mark Seed Co.	9921	2.1	14.0	49.2
Merschman Seeds	Munsee IIRR	2.1	28.8	49.8
Merschman Seeds	Comanche V	2.1	22.5	45.4
Merschman Seeds	Mars VRR	1.9	26.7	49.8
Merschman Seeds	Apache VIIRR	2.4	15.0	43.5
Naylor Seed	NS 2770	2.5	33.8	24.4
Naylor Seed	NS 2450	2.5	21.3	49.4
Naylor Seed	Excel 8261 RR	2.5	18.8	43.9
Novartis Seeds Inc.	X9818	1.9	5.3	42.0
Novartis Seeds Inc.	X9923R	2.3	3.8	47.5
Novartis Seeds Inc.	X9919R	1.9	12.8	44.4
Ottlie RO Seed	Ottlie 8299	2.9	32.5	49.6
Ottlie RO Seed	Ottlie 8240 RR	2.4	30.0	43.9

Pioneer Hi-Bred	93B11		46.3	51.8
Pioneer Hi-Bred	9306		31.3	50.8
Profiseed Inc.	PS 4241 RR	2.4	13.8	51.4
Profiseed Inc.	PS 2509	2.4	21.3	51.3
Sand Seed Service	SOI 260	2.0	3.0	49.2
Sand Seed Service	SOI 275RR	2.7	13.8	43.9
Sieben	SS289		27.5	38.4
Sieben	SS298		46.3	47.1
Sieben	SS2601RR		11.5	41.7
Terra Seeds	TS194		3.8	41.1
Wilson Genetics L.L.C	Wilson 2832 RR	2.8	17.5	44.2
Wilson Genetics L.L.C	Wilson 2844 RR	2.8	38.8	35.3
Wilson Genetics L.L.C	Wilson 3111 RR/SCN	3.1	26.3	49.3
	BSR101	1.7	2.5	50.6
	Corsoy79	1.5	2.5	47.4
	A2242	2.2	17.5	48.3
	Kenwood 94	2.5	6.3	49.3
	Williams 82	3.8	50.0	17.4

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