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Specialty Soybean Test - South

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Abstract

The purpose of this test is to evaluate the experimental food-type soybean lines adapted to southern Iowa. The 2000 Specialty Test included commodity yellow hilum, large-seeded high protein, small-seeded, and lipoxygenase free experimental lines, and for comparison of agronomic traits, commercially grown varieties released by Iowa State University. Large-seeded, large-seeded high protein, small-seeded, and lipoxygenase free soybean varieties grown in Iowa are used to fill a niche in the food-bean market. These soybeans are mainly exported to Japan. Large-seeded soybeans are used in the production of miso and are consumed as a vegetable. Large-seeded high protein soybeans are used for tofu production. Small-seeded soybeans are used to create natto. Lipoxygenase free soybeans have less of the “beany” flavor associated with conventional varieties. This flavor trait is desirable in producing soy-based foods like soy milk.

Keywords

Agronomy

Disciplines

Agricultural Science | Agriculture | Agronomy and Crop Sciences

Specialty Soybean Test - South

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Introduction

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Methods

The specialty soybean test for the southern district was planted at four Iowa locations including Ames, Atlantic, Crawfordsville, and Winterset. At each location, three replications of four-row plots were planted. The plots were 12

feet long with a row spacing of 27 inches. The seeding rate was nine seeds per foot. Agronomic characteristics evaluated at Atlantic included plant height and lodging susceptibility. The center two rows were harvested using a self-propelled research plot combine. The moisture and weight of each plot were measured on the combine during harvest. The harvested seed was brought to Ames for seed weight calculation and oil and protein analysis.

Results

The test results of the lipoxygenase free varieties IA2036LF and IA3012LF, the large-seeded high protein varieties IA2053 and IA2054, the small-seeded varieties IA2055, IA2056, IA2057, IA2058, IA2059, IA2060, IA3013 and IA4002, the commodity yellow hilum variety IA2061, and the commodity varieties IA2021 and Macon are summarized in Table 1. Unfortunately, near the end of July hail damaged the Atlantic plots. Therefore, data from those plots were not included in the 2000 Specialty Soybean Test South.

Acknowledgments

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Table 1: 2000 Specialty Soybean Test South, Iowa State University.

Ames, Crawfordsville, and Winterset, Iowa

<u>Entry</u>	<u>Yield</u>	<u>Mat.</u>	<u>Lodg.</u>	<u>Height</u>	<u>Seed weight</u>		<u>Protein</u>	<u>Oil</u>	<u>Emergence</u>	<u>Chlorosis</u>	<u>Character</u>
	bu/a	date	score	Inches	mg/sd	sds/lb	%	%	score	score	
IA2021	51.9	9/8	1.7	31	151	3010	34.8	19.9	2	3.6	Commodity check
Macon	52.2	9/16	1.6	35	163	2790	36.6	19.2	2	3.9	Commodity check
IA2061	53.9	9/8	1.9	35	165	2750	36.8	19.4	2	3.4	Commod., yellow hilum
IA2043	48.6	9/9	1.3	33	242	1880	37.5	18.2	5	4.0	Large seed
IA2045	47.5	9/11	1.7	31	238	1910	38.1	18.5	5	3.0	Large seed
IA2040	51.9	9/14	1.6	34	255	1780	38.5	18.3	4	3.8	Large seed
IA2037	48.5	9/14	1.6	31	241	1890	39.6	17.8	2	3.9	Large seed
IA3009	46.1	9/18	1.8	35	268	1700	37.9	18.4	5	3.9	Large seed
Ohio FG1	44.8	9/21	1.6	35	216	2100	38.3	18.6	4	3.3	Large seed
IA2017	44.1	9/6	2.9	36	194	2340	39.6	17.8	3	3.3	L. seed & high protein
IA2053	50.3	9/7	1.9	34	205	2220	40.1	17.7	5	3.1	L. seed & high protein
IA2042	48.0	9/7	2.2	35	201	2260	39.4	17.9	4	4.0	L. seed & high protein
HP204	39.6	9/8	2.8	37	200	2270	40.2	17.9	4	3.3	L. seed & high protein
Vinton 81	39.4	9/9	2.7	39	204	2230	39.8	17.8	4	3.3	L. seed & high protein
IA2044	48.1	9/10	1.3	31	218	2080	39.0	18.8	5	3.9	L. seed & high protein
IA2048	46.5	9/10	1.3	30	232	1960	39.6	18.2	4	4.1	L. seed & high protein
IA3006	46.0	9/11	1.5	32	236	1930	39.0	18.3	2	4.0	L. seed & high protein
IA2047	44.7	9/11	1.3	31	235	1930	39.6	18.1	4	4.3	L. seed & high protein
IA2020	43.3	9/11	1.9	36	215	2110	39.7	18.6	5	3.5	L. seed & high protein
IA2046	49.9	9/12	1.6	32	228	1990	39.3	17.7	5	4.3	L. seed & high protein
IA2049	49.4	9/12	1.4	32	239	1900	39.6	18.3	5	4.1	L. seed & high protein
IA2041	48.6	9/12	1.4	36	183	2480	41.0	17.9	3	3.8	L. seed & high protein
IA2054	48.5	9/13	1.6	37	192	2370	40.6	17.3	4	3.3	L. seed & high protein
IA2034	47.2	9/14	1.8	37	190	2390	40.7	17.4	4	3.0	L. seed & high protein
IA3011	47.2	9/14	1.7	33	192	2370	40.7	17.6	4	3.5	L. seed & high protein
IA3001	47.8	9/18	1.8	37	177	2570	40.4	18.2	3	3.4	L. seed & high protein
IA2057	42.9	9/8	2.8	32	73	6230	35.5	17.9	2	3.5	Small seed
IA2059	42.8	9/8	2.7	33	73	6230	35.5	17.9	2	3.8	Small seed
IA2056	46.2	9/9	2.3	32	73	6230	35.4	18.0	3	4.0	Small seed
IA2058	43.6	9/9	2.3	31	73	6230	35.5	18.0	2	3.9	Small seed
IA2035	43.0	9/9	2.4	33	69	6590	41.3	13.6	4	3.6	Small seed
IA2055	42.8	9/9	2.6	31	74	6140	35.5	18.1	3	3.5	Small seed
IA2060	46.3	9/10	1.8	34	77	5900	37.2	17.7	2	3.8	Small seed
IA3013	40.5	9/15	2.4	35	74	6140	36.3	17.3	1	3.5	Small seed
IA3008	42.3	9/16	3.2	33	74	6140	36.0	16.7	3	3.8	Small seed
IA4002	40.3	9/18	2.2	39	74	6140	40.3	14.5	1	3.8	Small seed
IA4001	39.8	9/19	3.5	36	71	6400	35.6	17.1	2	4.0	Small seed
IA2032	43.5	9/9	1.7	34	212	2140	39.4	19.2	4	3.5	Lipoxygenase free
IA2036LF	43.0	9/9	2.9	38	140	3250	38.1	17.6	3	3.9	Lipoxygenase free**
IA2025	44.2	9/10	1.6	33	205	2220	40.6	18.4	3	3.9	Lipoxygenase free
IA2027	42.3	9/10	2.1	38	203	2240	39.2	19.3	5	3.5	Lipoxygenase free
IA2029	39.8	9/10	2.3	35	190	2390	39.8	18.4	2	4.1	Lipoxygenase free
IA3012LF	50.4	9/14	2.1	34	140	3250	35.2	19.5	1	3.4	Lipoxygenase free

**Cultivar has resistance to the soybean cyst nematode and yellow hilum color.

Yield: Bushels/acre at 13% moisture

Protein and oil: 13%-moisture basis

Maturity: Month/Day

Emergence score: 1=Excellent, 5=Poor

Lodging: 1=Erect, 5= Prostrate

Iron-deficiency chlorosis score: 1=No chlorosis, 5=Severe chlorosis