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Specialty Soybean Test—South

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Abstract
The purpose of this test was to evaluate experimental food-type soybean lines adapted to southern Iowa. Soybeans used in 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. Primarily these soybeans are exported to Japan, where large-seeded soybeans are used to make miso and are consumed as a vegetable; large-seeded high protein soybeans are used in tofu production; small-seeded soybeans are used to make natto. Lipoxygenase-free soybeans have less of the "beany" flavor associated with conventional varieties, a flavor trait desirable for some soybased foods, such as soy milk.

Keywords
Agronomy

Disciplines
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Introduction

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Methods

The 2001 specialty soybean test for the southern district was planted at five Iowa locations: Ames, Carlisle, Lewis, Richland, and Winterset. At each location, three replications of four-row plots were planted. The plots were 12 feet long, with row spacing of 27 inches. The seeding rate was nine seeds/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. 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

Table 1 summarizes test results of the lipoxygenase-free varieties IA2040LF, IA2042LF and IA3008LF, the large-seeded varieties IA1010, IA1011, IA2062, IA2063 and IA3015, the large-seeded high protein variety IA3016, and the commodity varieties IA2021 and Macon. The data obtained from the test helped determine that these nine specialty soybean varieties should be released.

Acknowledgments

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Table 1. 2001 Specialty Soybean Test—South. Iowa State University: Ames, Carlisle, Lewis, Richland, and Winterset, IA.

Entry	Yield bu/a	Maturity date	Lodging score	Height inches	Seed mg/sd	Weight sds/lb	Protein %	Oil %	Character
IA2021	46.9	9/13	1.5	31	152	3000	32.7	21.6	Commodity check
Macon	50.0	10/2	1.9	37	163	2780	34.1	19.3	Commodity check
IA2061	50.6	9/23	2.0	35	167	2720	33.1	21.4	Commodity, yellow hilum
**IA2036	46.5	9/13	2.7	39	143	3180	34.7	19.3	SCN resistant
IA1010	43.9	9/8	1.3	29	260	1750	35.6	19.9	Large seed
IA1011	47.8	9/9	1.6	32	247	1840	34.9	20.2	Large seed
IA2045	47.4	9/11	1.4	29	249	1820	36.1	20.2	Large seed
IA2043	46.8	9/12	1.6	31	258	1760	35.7	19.7	Large seed
IA2062	46.5	9/12	1.3	29	243	1870	36.1	19.9	Large seed
IA2040	47.7	9/15	1.6	33	263	1730	36.8	19.5	Large seed
IA2037	48.1	9/16	1.5	30	254	1790	36.9	19.3	Large seed
IA2063	49.5	9/17	1.9	34	254	1790	35.8	19.7	Large seed
IA3009	49.7	9/22	1.9	32	259	1760	35.6	19.8	Large seed
IA3015	47.2	9/25	2.2	36	283	1610	35.3	19.4	Large seed
IA2017	45.4	9/9	2.0	37	186	2440	37.1	19.2	Large seed & high protein
Vinton 81	42.0	9/9	1.9	38	195	2340	36.9	19.3	Large seed & high protein
IA2046	50.1	9/11	1.5	30	246	1840	36.7	19.2	Large seed & high protein
HP204	41.4	9/11	2.0	39	194	2340	37.0	19.2	Large seed & high protein
IA2042	47.2	9/12	1.9	35	199	2280	37.4	19.0	Large seed & high protein
IA2041	45.9	9/12	1.5	35	177	2560	37.7	19.5	Large seed & high protein
IA2053	50.5	9/13	1.8	34	208	2180	36.9	19.2	Large seed & high protein
IA2044	42.6	9/13	1.5	28	244	1860	36.5	20.3	Large seed & high protein
IA2020	41.8	9/14	1.8	37	214	2130	37.8	19.2	Large seed & high protein
IA2054	49.7	9/17	1.7	36	200	2270	37.4	18.8	Large seed & high protein
IA3011	48.8	9/17	1.5	34	204	2230	38.4	19.0	Large seed & high protein
IA2049	46.1	9/17	1.4	30	247	1840	36.9	19.8	Large seed & high protein
IA2034	48.7	9/18	1.7	36	200	2270	37.3	19.0	Large seed & high protein
IA3001	48.5	9/19	1.8	38	179	2540	36.9	19.7	Large seed & high protein
IA2048	43.2	9/19	1.5	29	249	1820	37.1	19.6	Large seed & high protein
IA2047	41.5	9/19	1.4	29	242	1880	37.1	19.6	Large seed & high protein
IA3006	44.6	9/20	1.7	30	225	2020	36.7	19.3	Large seed & high protein
IA3016	48.1	9/26	2.0	34	238	1910	36.8	18.8	Large seed & high protein
IA2025	43.0	9/9	1.3	33	199	2280	37.9	19.8	Lipoxygenase free
IA2042LF	40.4	9/12	1.7	33	200	2280	37.1	19.6	Lipoxygenase free
IA2027	39.3	9/13	1.8	37	206	2200	37.9	19.5	Lipoxygenase free
IA2029	42.0	9/14	1.9	36	193	2360	37.1	19.7	Lipoxygenase free
IA2032	42.6	9/15	1.6	34	212	2150	37.9	19.5	Lipoxygenase free
**IA2036LF	41.0	9/16	2.6	39	143	3180	34.7	19.7	Lipoxygenase free
IA2040LF	46.8	9/17	1.6	33	263	1730	36.8	19.8	Lipoxygenase free
IA3006LF	47.9	9/18	1.5	30	224	2030	37.0	19.5	Lipoxygenase free
IA3012LF	52.2	9/24	1.7	32	148	3060	32.7	21.1	Lipoxygenase free
IA3008LF	39.1	9/24	2.3	36	89	5120	33.6	19.2	Lipoxygenase free

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

Yield: Bushels/acre at 13% moisture.
Maturity: Month/Day.
Lodging: 1=Erect, 5=Prostrate.
Protein and oil: 13%-moisture basis.
Emergence score: 1=Excellent, 5=Poor.
Iron-deficiency chlorosis score: 1=No chlorosis, 5=Severe chlorosis.