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## Specialty Soybean Test—South

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## Specialty Soybean Test—South

### **Abstract**

The purpose of this test was to evaluate the experimental food-type soybean lines adapted to southern Iowa. The 2002 Specialty Test included commodity yellow hilum, large-seed, large-seed high protein, small-seed, and lipoxygenase free experimental lines, and for comparison of agronomic traits, commercially grown varieties released by Iowa State University. Large-seed, large-seed high protein, small-seed, 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-seed soybeans are used in the production of miso and are consumed as a vegetable. Large-seed high protein soybeans are used for tofu production. Small-seed soybeans are used to create natto. Lipoxygenase-free soybeans have less of the “beany” flavor associated with conventional varieties, a desirable trait in producing soybased foods, such as soy milk.

### **Keywords**

Agronomy

### **Disciplines**

Agricultural Science | Agriculture | Agronomy and Crop Sciences

## Specialty Soybean Test—South

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### Introduction

The purpose of this test was to evaluate the experimental food-type soybean lines adapted to southern Iowa. The 2002 Specialty Test included commodity yellow hilum, large-seed, large-seed high protein, small-seed, and lipoxygenase free experimental lines, and for comparison of agronomic traits, commercially grown varieties released by Iowa State University. Large-seed, large-seed high protein, small-seed, 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-seed soybeans are used in the production of miso and are consumed as a vegetable. Large-seed high protein soybeans are used for tofu production. Small-seed soybeans are used to create natto. Lipoxygenase-free soybeans have less of the “beany” flavor associated with conventional varieties, a desirable trait in producing soy-based foods, such as soy milk.

### Materials and Methods

The specialty soybean test for the southern district was planted at five Iowa locations: Ames, Atlantic, Carlisle, Richland, and

Winterset. At each location, three replications of four-row plots were planted. The plots were 12 feet long, with 27 inch row spacing. 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. 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 and Discussion

The test results of the large-seed high protein varieties IA1013, IA1014, IA2067, IA3021 and IA3022, phytophthora resistant variety IA3006PR and the commodity varieties IA2021, IA2061 and Macon are summarized in Table 1. The data obtained from the test helped determine that these six specialty soybean varieties should be released.

### Acknowledgments

Thank you to Bernard Havlovic, Armstrong Research Farm superintendent and Jeff Butler, ag specialist, for helping to select the plot site, applying the pre-plant herbicide, preparing the seed bed, and harvesting the border rows.

**Table 1. 2002 Specialty Soybean Test—South, Iowa State University: Ames, Atlantic, Carlisle, Richland, and Winterset, Iowa.**

Entry	Yield <sup>1</sup> bu/a	Maturity <sup>2</sup> date	Lodging <sup>3</sup> score	Height inches	Seed mg/sd	Weight sds/lb	Protein <sup>4</sup> %	Oil %	Character
IA2021	51.0	9/6	1.9	29	160	2840	33.1	21.0	Commodity check
IA2061	57.7	9/11	2.4	33	173	2620	35.0	20.6	Commodity, yellow hilum
Macon	60.0	9/25	2.2	35	185	2450	35.7	19.6	Commodity check
IA1013	48.9	9/6	1.9	31	222	2040	39.4	19.0	Large seed & high protein
IA1014	45.2	9/7	2.3	29	210	2160	39.0	19.0	Large seed & high protein
Vinton 81	39.8	9/8	2.6	33	204	2220	37.5	18.7	Large seed & high protein
IA2042	48.1	9/9	2.6	32	211	2150	38.0	18.6	Large seed & high protein
IA2067	47.9	9/9	1.7	32	219	2070	39.0	18.4	Large seed & high protein
HP204	43.5	9/9	2.7	36	205	2210	38.1	18.6	Large seed & high protein
IA2044	42.4	9/9	1.6	27	237	1910	37.4	19.3	Large seed & high protein
IA2046	48.3	9/10	1.7	27	245	1850	38.2	18.2	Large seed & high protein
IA2048	46.9	9/10	1.7	28	244	1860	38.0	18.8	Large seed & high protein
IA3006	47.9	9/11	1.9	29	233	1950	38.5	18.2	Large seed & high protein
IA2049	46.1	9/11	1.7	29	245	1850	37.7	19.0	Large seed & high protein
IA2053	45.7	9/11	2.0	30	207	2190	37.9	18.6	Large seed & high protein
IA2041	46.1	9/12	1.7	31	184	2470	39.4	18.2	Large seed & high protein
IA2047	44.5	9/12	1.7	28	253	1790	38.5	18.7	Large seed & high protein
IA3021	52.3	9/14	1.5	29	227	2000	38.1	19.0	Large seed & high protein
IA2054	50.7	9/14	2.1	33	206	2200	38.8	18.2	Large seed & high protein
IA2034	52.3	9/15	2.2	33	210	2160	39.0	18.1	Large seed & high protein
IA3011	48.5	9/15	1.9	30	211	2150	39.4	18.4	Large seed & high protein
IA2020	47.1	9/15	2.2	35	230	1970	38.5	19.0	Large seed & high protein
IA3001	49.3	9/18	2.0	35	187	2420	39.1	18.7	Large seed & high protein
IA3016	55.6	9/23	2.2	31	242	1870	38.5	18.1	Large seed & high protein
IA3022	54.2	9/27	2.3	34	222	2040	39.8	17.7	Large seed & high protein
IA3006PR	50.0	9/14	1.8	29	237	1920	39.0	18.5	Phytophthora resistant

<sup>1</sup>Yield: Bushels/acre at 13% moisture<sup>2</sup>Maturity: Month/Day<sup>3</sup>Lodging: 1=Erect, 5=Prostrate<sup>4</sup>Protein and oil: 13%-moisture basis