

2003

## Specialty Soybean Test—North

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### Recommended Citation

Scholbrock, Kevin O., "Specialty Soybean Test—North" (2003). *Iowa State Research Farm Progress Reports*. 1515.  
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# Specialty Soybean Test—North

## **Abstract**

The purpose of this test is to evaluate the experimental food-type soybean lines adapted to northern 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 like soy milk.

## **Keywords**

Agronomy

## **Disciplines**

Agricultural Science | Agriculture | Agronomy and Crop Sciences

## Specialty Soybean Test—North

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### Introduction

The purpose of this test is to evaluate the experimental food-type soybean lines adapted to northern 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 like soy milk.

### Materials and Methods

The specialty soybean test for the northern district was planted at five Iowa locations:

Ames, Eldora, Fayette, Kanawha, and Sioux Rapids. 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 Kanawha 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 small-seed IA1012, the large-seed/high protein varieties IA1013, IA1014, IA2067, and IA3021, and the commodity varieties IA1008, IA1009, IA2021, IA2061, and IA2036 are summarized in Table 1. The data obtained from the test helped determine that these five specialty soybean varieties should be released.

### Acknowledgments

Thank you to David Rueber, Northern Research Farm superintendent, for helping select the plot site, applying the pre-plant herbicide, preparing the seed bed, and harvesting the border rows.

**Table 1. 2002 Specialty Soybean Test (North), Iowa State University–Ames, Eldora, Fayette, Kanawha, and Sioux Rapids, 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	54.3	9/11	2.0	31	168	2700	34.3	20.2	Commodity check
IA1008	54.2	9/11	1.9	36	180	2530	35.8	18.6	SCN resistant, yellow hilum
IA1009	55.1	9/13	2.9	33	149	3040	35.9	18.9	SCN resistant, yellow hilum
IA2061	57.3	9/16	2.6	35	179	2530	36.0	19.7	Commodity, yellow hilum
IA2036	48.1	9/16	2.8	37	152	2990	36.8	17.7	SCN resistant, yellow hilum
IA2017	49.6	9/11	2.6	36	208	2180	38.6	17.9	Large seed & high protein
IA1013	49.4	9/11	2.2	35	232	1960	39.7	18.5	Large seed & high protein
IA1014	48.8	9/11	2.5	31	221	2050	39.4	18.5	Large seed & high protein
IA2044	50.3	9/13	1.7	30	247	1840	37.9	18.7	Large seed & high protein
IA2016	46.6	9/14	2.9	36	223	2030	39.1	17.9	Large seed & high protein
IA2067	54.5	9/15	2.4	36	234	1940	39.4	17.8	Large seed & high protein
IA2053	52.8	9/15	2.3	34	221	2050	38.6	17.8	Large seed & high protein
IA2042	51.3	9/15	2.4	34	219	2070	39.1	17.7	Large seed & high protein
HP204	45.7	9/15	3.1	39	213	2130	38.7	18.0	Large seed & high protein
Vinton 81	42.9	9/15	2.7	38	214	2120	38.2	18.1	Large seed & high protein
IA2046	54.9	9/16	2.0	32	247	1830	38.3	17.8	Large seed & high protein
IA2047	47.4	9/17	1.8	32	259	1750	39.0	18.1	Large seed & high protein
IA3021	52.7	9/18	1.7	34	233	1950	38.6	18.4	Large seed & high protein
IA2048	51.8	9/18	1.9	32	258	1760	38.8	18.1	Large seed & high protein
IA2049	51.1	9/18	1.8	31	259	1750	38.4	18.2	Large seed & high protein
IA2054	51.7	9/19	2.2	37	206	2200	39.5	17.3	Large seed & high protein
IA2041	50.1	9/19	2.1	34	197	2300	40.0	17.7	Large seed & high protein
IA2034	47.8	9/21	2.4	36	212	2140	39.4	17.3	Large seed & high protein
IA2020	46.4	9/21	2.4	37	236	1920	38.7	18.3	Large seed & high protein
IA1012	40.5	9/4	2.2	29	75	6030	35.7	16.9	Small seed
IA2059	47.4	9/17	2.8	32	92	4950	36.0	18.1	Small seed
IA2057	46.7	9/17	2.7	33	90	5050	36.0	18.1	Small seed
IA2056	45.4	9/17	2.6	32	90	5040	36.0	18.0	Small seed
IA2055	44.5	9/17	2.7	33	92	4950	36.2	18.0	Small seed
IA2058	46.5	9/18	2.6	32	89	5070	35.9	18.1	Small seed
IA2035	45.2	9/20	3.0	32	79	5760	41.8	14.0	Small seed

<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