

2002

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### Recommended Citation

Scholbrock, Kevin O., "Specialty Soybean Test—North" (2002). *Iowa State Research Farm Progress Reports*. 1649.  
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# Specialty Soybean Test—North

## **Abstract**

The purpose of this test was to evaluate experimental food-type soybean lines adapted to northern Iowa. Soybeans used in the 2001 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.

## **Keywords**

Agronomy

## **Disciplines**

Agricultural Science | Agriculture | Agronomy and Crop Sciences

# Specialty Soybean Test—North

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## Introduction

The purpose of this test was to evaluate experimental food-type soybean lines adapted to northern Iowa. Soybeans used in the 2001 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 soy-based foods such as soy milk.

## Methods

The 2001 specialty soybean test for the northern district was planted at four Iowa locations: Alden, Ames, Kanawha, and Sioux Rapids. 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 Kanawha 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

The test results of the lipoxygenase free varieties IA2040LF and IA2042LF, the large-seeded varieties IA1010, IA1011, IA2062, and IA2063, and the commodity variety IA2021 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 David Rueber, Northern Research and Demonstration Farm superintendent, for helping to select the plot site, applying the preplant herbicide, preparing the seed bed, and harvesting the border rows.

**Table 1. 2001 Specialty Soybean Test—North. Iowa State University: Alden, Ames, Kanawha, and Sioux Rapids, Iowa**

Entry	Yield bu/a	Maturity date	Lodging score	Height inches	Seed weight mg/sd	Protein sds/lb	Oil %	Character	
IA2021	53.2	9/18	2.0	35	162	2810	32.8	20.4	Commodity check
IA2061	51.6	9/25	2.2	38	172	2640	34.5	19.5	Commodity, yellow hilum
**IA1009	52.9	9/19	2.3	36	140	3250	34.3	19.4	SCN resistant
**IA1008	52.4	9/19	1.8	39	173	2630	35.1	19.0	SCN resistant
**IA2036	49.5	9/22	3.3	42	142	3190	35.5	17.6	SCN resistant
IA1010	51.0	9/18	1.4	35	274	1660	36.3	18.6	Large seed
IA1011	49.2	9/18	1.4	36	252	1800	35.6	18.7	Large seed
IA1007	44.7	9/18	1.5	33	246	1850	36.9	18.3	Large seed
IA2062	50.2	9/19	1.4	33	260	1750	36.6	18.7	Large seed
IA2043	48.8	9/19	1.5	34	253	1800	36.4	18.6	Large seed
IA2012	45.1	9/19	1.7	33	246	1850	37.2	18.3	Large seed
IA2045	50.5	9/20	1.5	33	253	1800	35.8	19.4	Large seed
IA2040	48.3	9/21	1.8	37	263	1730	37.0	18.2	Large seed
IA2063	48.4	9/24	2.1	38	274	1660	36.7	18.1	Large seed
Vinton 81	42.6	9/18	2.5	41	201	2260	37.6	18.0	Large seed & high protein
HP204	41.9	9/18	2.8	41	197	2310	37.5	18.1	Large seed & high protein
IA2016	48.7	9/20	3.2	43	209	2170	37.6	18.3	Large seed & high protein
IA2017	48.7	9/20	2.9	40	200	2270	37.8	17.8	Large seed & high protein
IA2042	46.6	9/20	2.1	39	208	2190	38.0	17.6	Large seed & high protein
IA2046	52.5	9/21	1.6	34	247	1840	36.8	18.2	Large seed & high protein
IA2041	48.4	9/21	1.6	38	188	2420	38.7	17.8	Large seed & high protein
IA2053	46.4	9/22	2.0	37	203	2240	38.0	17.5	Large seed & high protein
IA2049	45.1	9/22	1.5	34	246	1850	37.8	18.3	Large seed & high protein
IA2047	44.1	9/22	1.5	34	238	1910	38.2	18.0	Large seed & high protein
IA2044	43.6	9/22	1.5	31	241	1880	37.8	18.7	Large seed & high protein
IA2048	43.1	9/22	1.7	33	242	1880	38.3	18.2	Large seed & high protein
IA2020	43.5	9/23	2.3	42	220	2070	37.8	18.4	Large seed & high protein
IA2054	47.3	9/24	2.1	40	199	2280	37.9	17.4	Large seed & high protein
IA2034	46.2	9/24	2.2	40	195	2330	37.9	17.4	Large seed & high protein
IA2023	41.0	9/22	2.9	39	82	5560	38.9	14.7	Small seed
IA2058	46.8	9/24	2.9	37	77	5900	34.0	17.8	Small seed
IA2055	43.5	9/25	3.1	37	78	5800	34.2	17.7	Small seed
IA2056	43.4	9/25	2.8	37	78	5830	34.2	17.7	Small seed
IA2057	43.3	9/25	3.0	38	78	5850	34.4	17.6	Small seed
IA2059	42.4	9/25	3.1	38	79	5750	34.2	17.7	Small seed
IA2035	38.7	9/26	2.8	36	71	6390	38.5	14.4	Small seed
IA2060	43.3	9/28	2.3	38	80	5660	35.0	17.7	Small seed
IA2011	48.7	9/19	1.7	39	188	2420	36.7	18.8	Lacks lipoxigenase-2
IA2042LF	44.7	9/20	2.1	38	207	2200	38.1	18.0	Lipoxigenase free
IA2025	45.9	9/21	1.5	37	209	2170	38.5	18.5	Lipoxigenase free
IA2032	41.5	9/21	2.0	39	218	2080	38.3	18.4	Lipoxigenase free
IA2040LF	47.5	9/22	1.6	39	261	1740	37.2	18.6	Lipoxigenase free
**IA2036LF	47.0	9/22	2.8	42	143	3180	35.7	17.9	Lipoxigenase free
IA2027	42.9	9/22	2.5	43	208	2180	37.7	18.6	Lipoxigenase free
IA2029	43.2	9/23	2.4	41	194	2340	37.9	18.3	Lipoxigenase 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.