

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 2003 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. This flavor trait is desirable in producing soy-based foods like soy milk.

Methods

The specialty soybean test for the northern district was planted at four Iowa locations -

Ames, Eldora, 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 maturity, 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 SCN resistant experimental lines A00-711003 and A00-711013 and the SCN resistant variety IA1008 are summarized in Table 1. The data obtained from the test helped determine that A00-711013 should be released and A00-711003 should not be released.

Acknowledgments

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Table 1. 2003 Specialty Soybean Test—North, Iowa State University, Ames, Eldora, Kanawha, and Sioux Rapids, Iowa.

Entry	Yield ¹ bu/a	Maturity ² date	Lodging ³ score	Height inches	Seed mg/sd	Weight sds/lb	Protein ⁴ %	Oil %	Character
IA2021	45.3	9/14	2.1	32	147	3080	35.3	19.4	Commodity check
IA2061	44.0	9/18	2.5	37	156	2900	36.5	18.9	Commodity, yellow hilum
A00-711003	44.8	9/14	1.7	32	127	3560	37.1	18.2	SCN resistant, yellow hilum
IA1008	43.8	9/14	1.5	38	155	2930	36.3	18.3	SCN resistant, yellow hilum
A00-711013	42.9	9/16	2.0	34	116	3930	35.8	18.3	SCN resistant, yellow hilum
IA1007	33.4	9/12	1.5	32	208	2180	38.6	17.3	Large seed
IA1011	37.1	9/13	1.9	33	224	2030	38.0	17.9	Large seed
IA2043	41.0	9/15	1.9	34	223	2030	37.3	17.9	Large seed
IA1010	44.4	9/16	1.6	34	242	1880	37.9	18.2	Large seed
IA2012	42.1	9/16	1.9	34	223	2030	38.2	17.9	Large seed
IA2045	32.9	9/16	1.8	31	204	2230	38.4	17.9	Large seed
IA2062	35.7	9/17	1.6	32	220	2060	38.2	18.0	Large seed
IA2040	37.9	9/19	2.1	38	236	1920	38.3	18.1	Large seed
IA2063	35.4	9/20	2.5	38	230	1970	38.6	17.9	Large seed
IA2044	35.1	9/13	1.6	31	199	2280	38.6	18.0	Large seed & high protein
IA2047	34.6	9/14	1.9	33	197	2300	39.2	17.5	Large seed & high protein
IA2017	35.9	9/15	2.6	38	168	2700	39.1	17.2	Large seed & high protein
IA2016	34.0	9/15	2.7	39	171	2650	39.9	17.1	Large seed & high protein
IA2042	39.6	9/16	2.5	36	178	2550	39.1	17.4	Large seed & high protein
IA1014	35.1	9/16	2.4	35	185	2450	40.6	17.3	Large seed & high protein
IA2048	34.1	9/16	2.0	34	198	2290	39.6	17.6	Large seed & high protein
Vinton 81	31.3	9/16	2.4	41	170	2670	39.3	17.1	Large seed & high protein
IA1013	40.6	9/17	2.0	37	205	2210	39.7	18.0	Large seed & high protein
IA2053	40.5	9/18	2.3	37	189	2390	40.1	17.4	Large seed & high protein
IA2046	39.6	9/18	2.0	33	209	2170	39.0	17.4	Large seed & high protein
IA2054	38.8	9/19	2.0	40	179	2540	39.5	17.2	Large seed & high protein
IA2067	38.8	9/19	1.7	36	192	2360	39.8	17.8	Large seed & high protein
HP204	33.9	9/19	2.9	41	173	2620	39.5	17.3	Large seed & high protein
IA2049	30.1	9/20	1.9	34	194	2340	38.8	17.8	Large seed & high protein
IA1012	30.4	9/9	2.4	30	64	7130	36.4	17.2	Small seed
IA2055	36.3	9/18	2.8	33	69	6610	35.9	18.1	Small seed
IA2056	36.4	9/19	2.8	33	69	6600	36.6	17.4	Small seed
IA2057	35.4	9/19	2.8	33	68	6650	36.2	17.7	Small seed
IA2059	35.2	9/19	2.8	33	68	6650	36.4	17.6	Small seed
IA2058	35.0	9/19	2.7	34	68	6650	36.5	17.5	Small seed
IA2011	40.1	9/18	2.0	34	163	2780	37.8	18.1	Lacks lipoxigenase-2
IA2036LF	39.9	9/17	2.6	40	126	3590	37.3	17.6	Lipo. free, SCN, yellow hilum
IA2042LF	39.9	9/18	2.3	35	180	2520	38.9	17.8	Lipoxygenase-free
IA2025	34.4	9/18	1.8	34	182	2490	39.4	17.8	Lipoxygenase-free
IA2032	34.0	9/18	2.0	38	193	2350	38.7	18.2	Lipoxygenase-free
IA2027	33.5	9/20	2.6	41	180	2520	38.7	18.1	Lipoxygenase-free
IA2040LF	41.3	9/21	2.1	39	235	1930	38.2	18.5	Lipoxygenase-free

¹Yield: bushels/acre at 13% moisture²Maturity: month/day³Lodging: 1=erect, 5=prostrate⁴Protein and oil: 13%-moisture basis