# Specialty Soybean Test—North

Kevin O. Scholbrock, research associate
Department of Agronomy

## 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

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**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 | sds/lb | Protein % | 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 lipoxygenase-2 |
| IA2042LF | 44.7 | 9/20 | 2.1 | 38 | 207 | 2200 | 38.1 | 18.0 | Lipoxygenase free |
| IA2025 | 45.9 | 9/21 | 1.5 | 37 | 209 | 2170 | 38.5 | 18.5 | Lipoxygenase free |
| IA2032 | 41.5 | 9/21 | 2.0 | 39 | 218 | 2080 | 38.3 | 18.4 | Lipoxygenase free |
| IA2040LF | 47.5 | 9/22 | 1.6 | 39 | 261 | 1740 | 37.2 | 18.6 | Lipoxygenase free |
| **IA2036LF | 47.0 | 9/22 | 2.8 | 42 | 143 | 3180 | 35.7 | 17.9 | Lipoxygenase free |
| IA2027 | 42.9 | 9/22 | 2.5 | 43 | 208 | 2180 | 37.7 | 18.6 | Lipoxygenase free |
| IA2029 | 43.2 | 9/23 | 2.4 | 41 | 194 | 2340 | 37.9 | 18.3 | 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.