

Altered Fatty Acid Soybeans

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Introduction

This project is designed to look at the yields of Iowa State University's new altered fatty acid soybean varieties and a similar Monsanto variety. These soybeans are being grown in the area served by the research farm only to a small extent this year and will be grown much more extensively in 2006. Premiums for 2006 will be designed to cover yield drag and identity preservation costs.

Materials and Methods

The beans were planted into cornstalks that had been fall chisel plowed and spring field cultivated. The plots were planted on May 9 at a rate of 160,000 ppa in 30-in. rows using a John Deere 7000 planter with Kinze soybean meters. The herbicide program consisted of Pursuit Plus applied April 15 and incorporated prior to planting and Poast Plus applied postemergence on June 10.

Results and Discussion

The plot area was previously sampled in the fall of 2003 for soybean cyst nematode with a count of 400 eggs/100cm² of soil. The varieties that

were grown contained a mixture of maturity groups and fatty acid traits. The plot average was 37.53 bushels/acre with the individual variety results shown in Table 1.

The year 2005 turned out to be a respectable year for soybean yields in southeast Iowa due to late August rains. This plot was planted early and contained varieties that would be considered short- and mid-season for the area. August rains came too late to help most of the varieties in this plot. No appreciable damage was observed from disease or insects. The varieties tested fell into three groupings (Table 2). There were three low-saturated fat varieties, three group II maturity low-linolenic varieties, and two group III low-linolenic varieties. The low-saturated fat varieties were early group II with the IA2069 showing a clear yield advantage over the other two varieties. The group II low-linolenic varieties favored the Iowa State varieties when compared with the Asgrow variety. The group III low-linolenic varieties yielded at or near the top in the plot. The plot did show the typical trend of the later-maturing varieties yielding more, especially in this dry year with late rains. The varieties tested represent the best of what is presently available. They will make up the majority of the altered fatty acid varieties for the next few years.

Table 1. Variety results.

Variety	Yield	Maturity
IA2069	45.00	2.4
IA2070	39.60	2.4
IA2071	37.20	2.4
IA2072	44.50	2.5
IA2073	41.50	2.5
IA3024	50.50	3.0
IA3025	44.60	3.0
AG2421V	37.40	2.4

Table 2. The varieties included in the study.

Source	Variety	Maturity	Comments
Iowa State	IA2069	2.4	Low saturated
Iowa State	IA2070	2.4	Low saturated
Iowa State	IA2071	2.4	Low saturated
Iowa State	IA2072	2.5	1% low linolenic
Iowa State	IA2073	2.5	1% low linolenic
Iowa State	IA3024	3.0	1% low linolenic
Iowa State	IA3025	3.0	1% low linolenic
Asgrow	AG2421V	2.4	3% linolenic acid

The study was randomized and replicated four times.