

Organic Soybean Variety Evaluation, Comstock—Clay County

Cooperator: Lynn Brakke
Nearest Town: Comstock
Soil Type: Fargo Clay
Tillage: Fall chiseled, spring cultivated
Previous Crop: Wheat
Planting Date: May 29, 2004
Seeding Rate: 217,800 seed/a. For established population, see table.
Row Width: 22 inches
Fertilizer: nothing applied
Weed Control: Soybean was row-crop cultivated June 21 and July 23. Weeds were hand pulled throughout the growing season.
Frost August 20: Many top leaves were affected, but plants remained green lower in the canopy.
Harvest Date: October 13, 2004. Soybean was harvested with small plot combine, dried, cleaned and weighed for grain yield and test weight.
Experimental Design: Randomized complete block with 4 replications

Purpose of Study:

To evaluate iron chlorosis response, crop height, maturity, yield, test weight, protein and oil percent of different soybean varieties grown under a certified organic production system.

Results:

There were significant differences between varieties for all measured traits. All varieties had some yellowing due to iron chlorosis. In selecting appropriate varieties it is important to consider data from more years (see 2002 and 2003 data) and other comparable studies.

| Variety Name | 6/16/04 Plants/a | 7/7/04 Iron ¹ Chlorosis (1 - 5) | 8/21/04 Height (inches) | 9/10/04 Visual ² Maturity (7-9) | 2004 Yield ³ (bu/a) | Test Weight (lb/bu) | Protein (%) | Oil (%) | 2003 Yield (bu/a) | 2002 Yield (bu/a) |
|----------------------|------------------|--|-------------------------|--|--------------------------------|---------------------|-------------|---------|-------------------|-------------------|
| Bravado | 150000 | 2.0 | 24.0 | 7.5 | 30.4 | 58.9 | 33.7 | 16.6 | 23.8 | |
| Atwood | 131000 | 1.9 | 22.3 | 8.0 | 30.2 | 59.6 | 35.9 | 16.1 | 31.9 | 27.7 |
| Legend 0557 | 131000 | 3.0 | 22.5 | 8.8 | 30.1 | 59.7 | 35.4 | 16.6 | | |
| Jim | 150000 | 1.8 | 23.8 | 7.0 | 29.5 | 59.1 | 34.8 | 15.4 | | 28.4 |
| 53803 | 158000 | 2.3 | 23.3 | 9.0 | 29.0 | 59.8 | 33.3 | 17.2 | | |
| PI091M10 | 163000 | 1.8 | 25.0 | 9.0 | 27.5 | 59.3 | 34.3 | 17.2 | | |
| Bygland | 177000 | 2.5 | 23.8 | 8.0 | 25.9 | 58.5 | 35.2 | 16.2 | 30.2 | 34.2 |
| Norpro | 193000 | 1.8 | 25.3 | 8.5 | 25.4 | 59.6 | 37.8 | 15.2 | | 23.6 |
| Surge | 150000 | 2.6 | 22.8 | 9.0 | 23.6 | 59.7 | 34.8 | 16.7 | 31.3 | |
| S 0 8 - 8 0 | 188000 | 2.9 | 26.0 | 8.8 | 22.7 | 59.5 | 34.7 | 17.1 | 31.6 | 31.1 |
| Nornatto | 144000 | 2.8 | 25.8 | 7.5 | 22.6 | 59.5 | 33.3 | 15.4 | 27.6 | 20.3 |
| Minori | 172000 | 1.9 | 23.3 | 8.8 | 20.8 | 59.3 | 35.0 | 17.2 | 30.4 | |
| Colibri | 177000 | 2.4 | 22.5 | 7.6 | 20.6 | 61.1 | 34.2 | 14.1 | 22.7 | |
| Panther ⁴ | 79000 | 3.0 | 21.3 | 8.8 | 14.4 | 58.9 | 38.7 | 15.7 | 29.9 | |
| 1F44 | 136000 | 2.4 | 28.0 | 9.0 | 13.6 | 59.5 | 36.3 | 16.1 | | |
| LSD 0.05 | 42000 | 0.8 | 2.1 | 0.7 | 5.6 | 0.3 | 0.8 | 0.4 | 4.2 | 3.6 |

¹ Iron Chlorosis score 1 = no yellowing and 5 = severely chlorotic or dead.

² Visual maturity score 7 = Canopy is yellowing. 8 = Canopy still green but lower canopy starts to yellow. 9 = Canopy still green.

³ Yield bu/a corrected to 13% moisture and 60 lb/bu test weight.

⁴ Poor seed lot resulting in low stand.

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For additional information:

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