



## Stress Mitigation Study on Corn – 2008

**Planted:** April 24, 2008  
**Harvested:** September 15, 2008  
**Rows:** Three 30" rows  
**Population:** Various  
**Soil Type:** Uniontown Silt Loam

**Previous Crop:** Soybeans  
**Tillage:** Disc & Chisel / Field Cultivator  
**Herbicide:** 3 qts. Degree Xtra  
 1 qt. Atrazine  
 22 oz. Roundup Original Max  
**Insecticide:** 6 oz. Artic

| RAINFALL |                 |
|----------|-----------------|
| April    | 4.64 in.        |
| May      | 6.36 in.        |
| June     | 3.12 in.        |
| July     | 8.90 in.        |
| August   | <u>0.80 in.</u> |
| Total    | 23.82 in.       |

**Purpose:** To compare VT3 technology to non-rootworm corn in both drought-like and normal rain-fed environments. To simulate a drought scenario, a shelter with a clear plastic cover was built over a portion of the study. The clear covering allowed sunlight into the sheltered area but kept all rainfall out.

| Yield Rank  | Brand                   | Planted Population | Harvested Population | Percent Moisture | Bushels* Per Acre   | Yield Adv over RR |
|---|-------------------------|--------------------|----------------------|------------------|---------------------|-------------------|
| <b>SHELTER AREA (Drought environment) Full Rate of Nitrogen</b> |                         |                    |                      |                  |                     |                   |
| 1   | Pioneer 34F96           | 38,000             | 32,333               | 23.3             | 133.0 <sup>^^</sup> |                   |
| 2   | <b>BECK 5444VT3</b>     | <b>33,000</b>      | <b>29,666</b>        | <b>20.8</b>      | <b>114.0</b>        | <b>+0.2</b>       |
| 3   | <b>BECK 5444RR</b>      | <b>33,000</b>      | <b>28,000</b>        | <b>20.6</b>      | <b>113.8</b>        |                   |
| 4   | BECK 5444VT3            | 38,000             | 31,666               | 21.5             | 111.7               |                   |
| 5   | BECK 5444RR w/ Force 3G | 33,000             | 26,333               | 23.4             | 107.0               |                   |
| 6   | BECK 5444RR w/ Force 3G | 38,000             | 30,333               | 21.9             | 104.4               |                   |
| 7   | Pioneer 34F96           | 33,000             | <u>28,000</u>        | <u>19.7</u>      | <u>95.7</u>         |                   |
|   | AVERAGE                 |                    | 29,476               | 21.6             | 111.4               |                   |
| <b>NO SHELTER (Rain-fed environment) 50% Nitrogen</b>           |                         |                    |                      |                  |                     |                   |
| 1   | <b>BECK 5444VT3</b>     | <b>33,000</b>      | <b>30,333</b>        | <b>21.9</b>      | <b>170.7</b>        | <b>+11.5</b>      |
| 2   | <b>BECK 5444RR</b>      | <b>33,000</b>      | <b>29,000</b>        | <b>21.7</b>      | <b>159.2</b>        |                   |
| 3   | Pioneer 34F96           | 33,000             | 29,333               | 21.9             | 154.9               |                   |
| 4   | BECK 5444RR w/ Force 3G | 33,000             | <u>26,666</u>        | <u>21.3</u>      | <u>144.0</u>        |                   |
|   | AVERAGE                 |                    | 28,833               | 21.7             | 157.2               |                   |
| <b>NO SHELTER (Rain-fed environment) Full Rate of Nitrogen</b>  |                         |                    |                      |                  |                     |                   |
| 1   | Pioneer 34F96           | 38,000             | 33,000               | 21.4             | 173.7               |                   |
| 2   | Pioneer 34F96           | 33,000             | 30,333               | 21.3             | 166.7               |                   |
| 3   | <b>BECK 5444VT3</b>     | <b>33,000</b>      | <b>30,000</b>        | <b>22.0</b>      | <b>165.2</b>        | <b>+4.2</b>       |
| 4   | <b>BECK 5444RR</b>      | <b>33,000</b>      | <b>29,666</b>        | <b>21.7</b>      | <b>161.0</b>        |                   |
| 5   | BECK 5444RR w/ Force 3G | 33,000             | 29,666               | 21.7             | 151.4               |                   |
| 6   | BECK 5444VT3            | 38,000             | 34,666               | 21.6             | 133.6               |                   |
| 7   | BECK 5444RR w/ Force 3G | 38,000             | <u>34,333</u>        | <u>20.9</u>      | <u>131.1</u>        |                   |
|   | AVERAGE                 |                    | 31,666               | 21.5             | 154.7               |                   |

\*Bushels per acre and test weight corrected to 15% moisture.

<sup>^^</sup>Entry had water run down rows due to leaking downspout.

**Summary:** This study was located on a ridge top in order to keep water from running into the sheltered portion of this study. Therefore yields were quite a bit lower than the lower lying, more highly productive portions of the farm. The rain-fed portion of this study out yielded the sheltered entries by 43.3 Bu./A. Root digs that were conducted in mid-July both in this study and in various other studies on the Southern PFR farm showed no signs of rootworm larvae feeding on the roots of the RR entries. There was little yield difference between the VT3 entry and the RR planted at 33,000 plants per acre under the shelter, but both of the rain fed portions of the study showed yield advantages for the VT3 over the RR entry planted at the same population. Although some of the more highly productive areas of the farm showed significant yield advantages for increasing planting populations, 33,000 plants per acre proved to be adequate for this more moderately productive portion of the farm.