**INTRODUCTION**

One of the most common problems facing Texas corn farmers is the injury caused to corn hybrids from lepidopteran pests [1]. The fall armyworm and corn earworm are common residents of Texas that are known to reduce yield. Insect injury can reduce yield although the relationship is variable across hybrids [2]. Advancing technologies in the farming industry have allowed for solutions to this problem that doesn’t involve increasing pesticide use. Corn growers have the option to control insect injury on their farm with the use of genetically modified seeds. There is a wide range of Lepidoptera control in corn with commercially available Bt transgenics [3]. This poster reviews the effectiveness of several Bt transgenics and hybrid families in their ability to reduce insect feeding, and preserve yield.

**OBJECTIVE 1: HYBRID FAMILY 1**

- **HYBRID GENETICS and SS**
  - Yield: 111.28 ± 3.18
  - Ear length: 19.92 ± 0.25
  - Area of ear injury: 3.69 ± 0.37

**OBJECTIVE 1: HYBRID FAMILY 2**

- **HYBRID GENETICS and DOVT2P**
  - Yield: 106.42 ± 3.18
  - Ear length: 20.38 ± 0.25
  - Area of ear injury: 2.72 ± 0.37

**OBJECTIVE 1: HYBRID FAMILY 3**

- **HYBRID GENETICS and NO Bt (RR2)**
  - Yield: 111.75 ± 3.18
  - Ear length: 20.10 ± 0.25
  - Area of ear injury: 3.09 ± 0.37

**OBJECTIVE 1: HYBRID FAMILY 4**

- **HYBRID GENETICS and NO Bt (RR)**
  - Yield: 109.86 ± 3.18
  - Ear length: 19.76 ± 0.25
  - Area of ear injury: 3.05 ± 0.37

**OBJECTIVE 1: HYBRID FAMILY 5 CONTINUED**

- **HYBRID GENETICS and SS**
  - Yield: 106.42 ± 3.18
  - Ear length: 20.38 ± 0.25
  - Area of ear injury: 2.72 ± 0.37

**OBJECTIVE 2: YIELD RESULTS CONTINUED**

<table>
<thead>
<tr>
<th>Hybrid Family</th>
<th>Bt Type</th>
<th>YHRR</th>
<th>Yield, Bu/Acre</th>
<th>Ear Length, cm</th>
<th>Area of Ear Injury, cm²</th>
</tr>
</thead>
<tbody>
<tr>
<td>HYBRID 5 GENETICS and SS</td>
<td>YES</td>
<td>V</td>
<td>108.62 ± 3.18</td>
<td>20.12 ± 0.25</td>
<td>2.36 ± 0.37</td>
</tr>
<tr>
<td>HYBRID 5 GENETICS and NO Bt</td>
<td>NO</td>
<td>V</td>
<td>106.42 ± 3.18</td>
<td>20.38 ± 0.25</td>
<td>2.72 ± 0.37</td>
</tr>
</tbody>
</table>

**OBJECTIVE 3: REVIEW/ECONOMIC INDICATORS**

<table>
<thead>
<tr>
<th>Hybrid Family</th>
<th>Bt Type</th>
<th>YHRR</th>
<th>Income Flow/Acre</th>
<th>Cost/Bushel</th>
<th>Receipts/Bu</th>
<th>Profit/Lb</th>
</tr>
</thead>
<tbody>
<tr>
<td>HYBRID 4 GENETICS and NO Bt (RR2)</td>
<td>NO</td>
<td>V</td>
<td>110.66 ± 5.66</td>
<td>5.66</td>
<td>6.67</td>
<td>5.00</td>
</tr>
<tr>
<td>HYBRID 3 GENETICS and VYHR</td>
<td>NO</td>
<td>V</td>
<td>107.75 ± 9.52</td>
<td>5.25</td>
<td>9.52</td>
<td>4.50</td>
</tr>
</tbody>
</table>

**REFERENCES**

1. Brewer, M., Odvody, G., Anderson, D., & Remmers, J. (n.d). A Comparison of Bt transgene hybrids did not modified seed, however there is added cost to the seed. This poster compares the effects of hybrid background and their commercial Bt transgenes in their ability to reduce preharvest insect feeding.

**CONCLUSION**

In the year where corn insect injury data was collected, it is likely that corn farmers would see a significant reduction in ear injury caused by lepidopteran species if their hybrids incorporate Bt transgenes. Also, not all Bt transgenes are created equal. Hybrid families with Bt transgenes expressed 30% to 50% more corn per acre (Agrisure® Viptera®) less ear injury when compared to their non-Bt counterparts. However, the hybrids with Bt transgenes only accounted for 10% of the variation in yield. This means that a Bt transgene hybrid will likely not make up for a poor hybrid selection. A farmer would be prudent to select a high yielding Bt hybrid before selecting a Bt transgene package although both are important.

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Thanks!!!

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