Corn Insects: Management Options for Maximizing Profits

Don Cook
Impact of Corn Seed Treatments on Yield

Cook 2018

Planted 3-22
Impact of Corn Seed Treatments on Yield

- Non-Treated
- Poncho 500

Bu / Acre

Impact of Stink Bug Injury on Field Corn Yield

- Light Streaking: 32.4%
- Heavy Streaking/Stunting: 42.7%
- Dead Heart: 61.7%

Bars indicate the yield in grams per ear for non-damaged and damaged corn.
Impact of Stink Bug Injury on Field Corn Yield

Bushels/acre vs. % Damaged Plants

- 0% damaged plants: 250 bushels/acre
- 8.8% damaged plants: 220 bushels/acre
- 17.4% damaged plants: 200 bushels/acre
- 20% damaged plants: 200 bushels/acre
- 22.1% damaged plants: 180 bushels/acre

Legend:
- a
- b
- c

Note: The bars labeled with 'c' and '22.1%' are identical in height.
Impact of Defoliation on Yield

Bu / Acre

Control  V3  V5  V7  V9  V11  V13  V15  V17

35.3%  38.4%  36.8%  25.1%  20.2%  15.7%  6.5%  6.1%
Impact of Kernel Damage on Yield

Bu/Acre

Control 10 20 40 60 100

Cook 2017
Corn Earworm Damage and Aflatoxin

Damaged kernels / ear

Aflatoxin (ppb)

Non-Bt Viptera Non-Bt Viptera

0 10 20 30 40

30 20 10 0

Non-Bt Viptera

a b

0 50 100 150 200 250

250 200 150 100 50 0

(250 200 150 100 50 0)
Bt Corn Comparison

![Graph showing yield comparison between Non-Bt and VT2P corn, as well as Non-Bt, Intrasect, and Leptra varieties. The graph includes bars for each category, with labels for statistical significance (b, a, ab).]
Corn Kernel Damage Over Time

- Non-Bt
- YHR
- VYHR

Damaged Kernels / Ear

- 2010
- 2011
- 2012
- 2013
- 2014
- 2015
- 2016
- 2017
- 2018
Corn Borers
Corn Borers

Southwestern corn borer

Sugarcane borer

European corn borer
Impact of Corn Borer Infestations on Yield

- **Low**
  - Non Bt: 150 bu/acre
  - Bt: 10% yield reduction
  - Yield reduction: 1.3%

- **Moderate**
  - Non Bt: 100 bu/acre
  - Bt: 10% yield reduction
  - Yield reduction: 10%

- **High**
  - Non Bt: 200 bu/acre
  - Bt: 7.7% yield reduction
Impact of Corn Borer Infestations on Yield

- Non-Bt: Yield (bu/acre)
- Bt: Yield (bu/acre)

5.6% decrease in yield due to Bt compared to Non-Bt.
Impact of Corn Borers on Yield

B.R. Leonard 2004
LSU AgCenter

- % Lodging in Non Bt
- Yield (>Non Bt)

10-Mar: 17
25-Mar: 26
15-Apr: 39

10-Mar: 14
25-Mar: 23
15-Apr: 47
Southwestern Corn Borer Eggs
<table>
<thead>
<tr>
<th></th>
<th>V1</th>
<th>V2</th>
<th>Vnth</th>
<th>VT</th>
<th>R1</th>
<th>R2</th>
<th>R3</th>
<th>R4</th>
<th>R5</th>
<th>R6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Leaf</td>
<td>2 Leaf</td>
<td>Nth Leaf</td>
<td>Tassel</td>
<td>Silk</td>
<td>Blister</td>
<td>Milk</td>
<td>Dough</td>
<td>Dent</td>
<td>Black Layer</td>
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<td></td>
<td>Treat 7-10 days after moth traps average 50 per trap on a 7 day catch from V1-Vnth or when plants average 5% corn borer egg masses or larval infestations per plant.</td>
<td>Treat 7-10 days after moth traps average 100 per trap on a 7 day catch from R1-R3 or when plants average 10% corn borer egg masses or larval infestations per plant.</td>
<td>Do Not Treat</td>
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