DATCP’s 2001 Insect Survey Results and Outlook for 2002

Krista Lambrecht
Plant Pest and Disease Specialist
WDATCP-ARM
European Corn Borer

Corn Flea Beetle

Soybean Aphid
2001 Statewide Average: 40 larvae per 100 plants

- Highest average recorded: 197
- Lowest average recorded: 5
2001 European Corn Borer Survey

Average Number of Larvae per 100 Plants
- 0 - 25
- 26 - 50
- 51 - 75
- 76 - 100
- 101 - 322

Wisconsin Department of Agriculture, Trade and Consumer Protection
## Summary of 2000-2001 Fall ECB Populations

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2001</th>
<th>10 Year Ave.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NW</td>
<td>24</td>
<td>33</td>
<td>18</td>
</tr>
<tr>
<td>NC</td>
<td>4</td>
<td>5</td>
<td>12</td>
</tr>
<tr>
<td>NE</td>
<td>3</td>
<td>7</td>
<td>20</td>
</tr>
<tr>
<td>WC</td>
<td>31</td>
<td>67</td>
<td>42</td>
</tr>
<tr>
<td>C</td>
<td>41</td>
<td>48</td>
<td>49</td>
</tr>
<tr>
<td>EC</td>
<td>19</td>
<td>33</td>
<td>47</td>
</tr>
<tr>
<td>SW</td>
<td>39</td>
<td>87</td>
<td>110</td>
</tr>
<tr>
<td>SC</td>
<td>33</td>
<td>48</td>
<td>66</td>
</tr>
<tr>
<td>SE</td>
<td>16</td>
<td>36</td>
<td>67</td>
</tr>
<tr>
<td>State Ave.</td>
<td>24</td>
<td>40</td>
<td>48</td>
</tr>
</tbody>
</table>
What can we expect in 2002?

- 80-90% of fall population will survive winter months
- Success of 1st flight is strongly influenced by corn planting date and weather conditions
European Corn Borer Survey Averages

1951-2001

Ave Number of Larvae per 100 plants

Year

To Bt or not to Bt?

- Will an outbreak occur in 2002?
- Is the risk significant enough to warrant the price premium for seed?
Corn Flea Beetle

- overwintering host and vector of P. stewartii
- Pantoea stewartii causes Stewart’s wilt in corn
Stewart’s Wilt Risk Factors

- Effect of winter temps. on corn flea beetle survival
- The prevalence of Stewart’s wilt during previous growing season
- Corn flea beetle populations
- The percentage of corn flea beetles carrying the Stewart’s wilt bacterium
Predicted Risk of Stewart’s Wilt in 2001

Low to Moderate
- Kenosha
- Milwaukee
- West Allis

Moderate to High
- Racine
## Predicted Risk of Stewart’s Wilt Based on Winter Temperatures

*(model developed at Iowa State University)*

<table>
<thead>
<tr>
<th>Duration</th>
<th>Temperature</th>
<th>Risk Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 month</td>
<td>&gt; 24°F</td>
<td>very low risk</td>
</tr>
<tr>
<td>1 month</td>
<td>&gt; 24°F</td>
<td>low to moderate risk</td>
</tr>
<tr>
<td>2 months</td>
<td>&gt; 24°F</td>
<td>moderate to high risk</td>
</tr>
<tr>
<td>3 months</td>
<td>&gt; 24°F</td>
<td>high risk</td>
</tr>
</tbody>
</table>
Other Factors Considered:

- In 2000, Stewart’s wilt was found in Adams, Dane, Grant, Iowa, Lafayette, Marquette, Portage, Richland, Rock and Trempealeau Counties.

- 57% of corn fields inspected for seed certification tested positive for Stewart’s wilt.

- Corn flea beetles were collected at 109 of 220 sites included in fall survey.

- 48% of the corn flea beetles collected carried Pantoea stewartii.
2001 Results

No beetles found during 2001 spring survey for overwintering corn flea beetles

No cases of Stewart’s wilt were detected during 2001 corn disease survey or seed corn inspections
Beetles found in Green, Racine, Rock, Walworth, and Waukesha Cos.
Forecast for 2002

- No Stewart’s wilt found during summer of 2001 +
- Very few beetles collected during fall survey +
- Low percentage carrying Stewart’s Wilt bacterium +
- Winter temperatures? = Low Risk for 2002 ???
Soybean Aphid
Biology and Background

- native to China
- primary host is buckthorn
- alternate host is soybean
- never detected in U.S. prior to 2000
- known to cause yield losses
- transmits plant viruses
Survey Protocol

- Examine 30 plants
- Record plant growth stage
- Assign rating based on number of aphids per plant
- Record presence of winged/not-winged aphids
- Record presence or absence of predators
- Record presence or absence of aphid mummies

Rating Scale for Aphid Severity

<table>
<thead>
<tr>
<th>Rating</th>
<th>No. Aphids per Plant</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>1-10</td>
</tr>
<tr>
<td>2</td>
<td>11-25</td>
</tr>
<tr>
<td>3</td>
<td>26-99</td>
</tr>
<tr>
<td>4</td>
<td>100+</td>
</tr>
</tbody>
</table>
2001 Soybean Aphid Survey

Survey Site
2001 Soybean Aphid Survey Timeline

**June 14**
- First aphids detected in Rock Co.

**July 12-25**
- 65% of fields with 1-99 aphids per plant

**July 26-August 15**
- 73% of fields with 100+ aphids per plant

**August 15-Sept 6**
- 80% of fields with ≤10 aphids per plant
**Forecast for 2002**

- all soybean fields are susceptible
- late planting date and dry soil increase susceptibility
- best defense is routine scouting

For more information see the following resources:
- Cooperative Pest Survey Bulletin
- Wisconsin Crop Manager
- Soybean Health Web
This presentation has been brought to you by
Krista Lambrecht
Plant Pest and Disease Specialist
WDTACP-ARM