SOYBEAN APHID BIOLOGY

WHAT YOU NEED TO KNOW

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The Soybean Aphid In Wisconsin – A Collaborative Effort

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Plant Pathology: Craig Grau, Nancy Kurtzweil
Agronomy: Chris Boerboom, John Gaska
Other: Tom Klubertanz (UW Rock Co.)
The Soybean Aphid – *Aphis glycines*

Where did it come from?

When/how did it get here?
Soybean Aphid – Impacts on Soybean
2001 Yield Loss Estimates

- An informal survey was taken to get a rough estimate of losses to soybean aphid in WI in 2001
- Based on data (unreplicated) from 22 fields, the average yield loss was **12.6%**
  - ave. yield (sprayed) was 44.4 bu, ave. loss from SBA was 5.6 bu
  - this does not take into account planting date, SBA numbers, or spray date
- Also, a windshield survey on August 14 indicated that about half the soybean acres in southern WI were sprayed for SBA
Soybean Aphid Seasonal History

A: fundatrix
B: fundatrigenia
C: spring migrant
D: apterous exule
E: alatae exule
F: gynopara
G: male
H: ovipara
I: egg
Buckthorn,
*Rhamnus cathartica*
Determining the Overwintering Hosts & Insect Stages
### Soybean Aphid Seasonal Pattern in China (Wang et al. 1962)

<table>
<thead>
<tr>
<th>Month</th>
<th>April</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>August</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aphid Activity</td>
<td>Emergence</td>
<td>Egg-laying</td>
<td>Nymphal Development</td>
<td>Adult Aphids</td>
<td>(Data not available)</td>
</tr>
<tr>
<td>Key Events</td>
<td>Flowering</td>
<td>Mid-June</td>
<td>Peak Aphid Populations</td>
<td>Harvest</td>
<td>(Data not available)</td>
</tr>
</tbody>
</table>

*Note: The diagram shows the seasonal pattern of Soybean Aphid activity and important agricultural stages.*
A soybean aphid can begin reproducing when she is 5 days old.

Under optimal conditions a soybean aphid population can increase by a factor of 1.6 per day, which means a population can potentially grow from 10 to 1,000 aphids in a little under 10 days!

(Bob Ellingson data, UW Biotron, spring 2001)
Soybean Aphids Descend on Toronto
August 2-3, 2001
Soybean Aphids Move Down from the Growing Point - August 10, 2001
Soybean Aphid – Biological Controls

Predators – Multicolored
Asian Lady Beetle
Asian Lady Beetle – Help or Just Another Problem?