Soybean Aphids (Aphis glycines Matsamura) Present in Most Soybean Fields continued from page 129

- This insect prefers cool conditions and reproduces at an optimal rate when temperatures are around 78 degrees F.
- Numbers of this pest vary from field to field so each field should be individually scouted to determine average aphid numbers per plant and plant growth stage.
- Treatment is justified when the economic threshold of 250 or more aphids per plant is reached and the soybean plants are in the R1 to R5 stages of growth.

The following insecticides are recommended for use on soybean aphid infestations in soybean:

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Trade Name</th>
<th>Rate of formulated material per acre</th>
<th>Additional Label Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>esfenvalerate</td>
<td>*Asana XL</td>
<td>5.8 to 9.6 fl. oz.</td>
<td>On foliage</td>
</tr>
<tr>
<td>cyfluthrin</td>
<td>*Baythroid XL</td>
<td>2.0 to 2.8 fl. oz.</td>
<td>On foliage</td>
</tr>
<tr>
<td>bifenthrin</td>
<td>*Brigade 2EC</td>
<td>2.1 to 6.4 fl. oz</td>
<td>On foliage</td>
</tr>
<tr>
<td>chlorpyrifos + gamma-cyhalothrin</td>
<td>*Cobalt</td>
<td>13 to 26 fl. oz</td>
<td>On foliage</td>
</tr>
<tr>
<td>carbofuran</td>
<td>*Furadan 4F</td>
<td>1/2 pt (see note below**)</td>
<td>On foliage</td>
</tr>
<tr>
<td>zeta-cypermethrin</td>
<td>*Hero</td>
<td>4.0 to 10.3 fl. oz</td>
<td>On foliage</td>
</tr>
<tr>
<td>chlorpyrifos</td>
<td>*Nufos 4E</td>
<td>1 to 2 pt.</td>
<td>On foliage</td>
</tr>
<tr>
<td>acephate</td>
<td>Orthene 97</td>
<td>3/4 to 1 lb.</td>
<td>On foliage</td>
</tr>
<tr>
<td>microencapsulated methyl parathion</td>
<td>*Penncap-M</td>
<td>1 to 3 pt</td>
<td>On foliage</td>
</tr>
<tr>
<td>permethrin</td>
<td>*Pounce 3.2 EC</td>
<td>4.0 to 8.0 fl. oz</td>
<td>On foliage</td>
</tr>
<tr>
<td>gamma-cyhalothrin</td>
<td>*Proxais</td>
<td>1.92 to 3.2 fl. oz</td>
<td>On foliage</td>
</tr>
<tr>
<td>lambda-cyhalothrin</td>
<td>*Warrior</td>
<td>1.92 to 3.2 fl. oz</td>
<td>On foliage</td>
</tr>
</tbody>
</table>

*Designates a restricted-use pesticide. Use is restricted to certified applicators only. Regardless of the formulation selected, read the label to determine appropriated insecticide rates, directions, precautions, and restrictions.

**Furadan 4F produced and labeled before 2009 season may still be used until Dec. 31, 2009

The Missouri Corn Stalk Nitrate Test Challenge

By John Lory

Did you do a good job predicting nitrogen need for your corn crop last spring? Did you over apply? Under apply? Or get your rates just right? The stalk nitrate test is a powerful tool for assessing the fertilizer nitrogen decisions in a corn field.

Research from Iowa and other states has calibrated nitrate concentration in the corn stalk with the nitrogen status of the harvested corn crop. Nitrate concentrations above 2000 parts per million are indicative of a crop that had excess nitrogen; nitrate concentrations below 700 parts per million are indicative of plants that had marginal nitrogen supply (250-700 parts per million) or were clearly nitrogen deficient (<250 parts per million).

How to sample fields
- The window of opportunity for collecting samples is from ¼ milk stage to up to three weeks after black layer formation.
- Use a set of hand shears or loppers to remove an eight-inch segment of corn stalk from the corn plant. The top cut should be 14 inches above the ground; the bottom cut six inches above the ground.
- Get a stalk segment from at least 15 randomly selected plants from the field or subfield you are sampling.
- Place the samples in a paper bag for shipping to the lab for analysis. Do not freeze the sample. Samples held more than 24 hours before shipping should be refrigerated.

The Missouri Corn Stalk Nitrate Test Challenge

My program is working with the University of Missouri Soil Testing Laboratory to promote use of this test in Missouri. Typical analysis cost for the test is $12 per sample. We will analyze up to 10 samples from any Missouri farm at the MU lab at no cost if you submit the requested information on the following form when you submitted sample. Send samples to Attention Stalk Nitrate Test Challenge, 23 Mumford Hall, University of Missouri Soil Testing Lab, Columbia, MO 65211 or MU Delta Regional Soil Testing Lab, 147 State Hwy T, Portageville, MO 63873.

Visit the Corn Stalk Nitrate Challenge website at http://nmplanner.missouri.edu/tools/Stalk_Nitrate_Challenge.asp for more information and to download more copies of the reporting form.

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(573) 864-9905

John Lory
LoryJ@missouri.edu
(573) 884-7815

Form available on page 131
Stalk Nitrate Trial Data Form

Your Name: ________________________     Your phone # or email address: _______________________
Your address: ________________________________________________________________________
Field location (description or GPS coordinates at center of field): ________________________
__________________________________________________________________________________
Corn Variety: ______________________   Yield goal: ______ bu/A Planting date: ______________
Winter cover/trap crop? (if yes, what crop?): _____________________________
Crop(s) previous year: ________________________________________
Source of Nitrogen 1:
Fertilizer type ___________________________ Date of Application: ____________
Method of application: ___________________ Target N rate: ________ lbs/A
If surface applied: Incorporated (yes/no): _______ Days to incorporation: ____________
N loss inhibitor used (yes/no) _________ Type used ______________________________

Source of Nitrogen 2 (if needed):  
Fertilizer type ___________________________ Date of Application: ____________
Method of application: ___________________ Target N rate: ________ lbs/A
If surface applied: Incorporated (yes/no): _______ Days to incorporation: ____________
N loss inhibitor used (yes/no) _________ Type used ______________________________

Source of Nitrogen 3 (if needed):
Fertilizer type ___________________________ Date of Application: ____________
Method of application: ___________________ Target N rate: ________ lbs/A
If surface applied: Incorporated (yes/no): _______ Days to incorporation: ____________
N loss inhibitor used (yes/no) _________ Type used ______________________________

Stalk Nitrate Sample Information: 
Date of sampling: __________
Number of stalks included: _______ Area represented by sample ______ Acres

There will be no analysis cost for your first 10 samples if you provide the requested information.
Discount may be available for more samples, contact me. Test cost typically is $12/sample.

SAMPLE HANDLING: Sample anytime from ¼ milk line to three weeks after black layer formation. Sample at least 15 stalks from the sampling area. For each stalk remove the 8-inch section from six inches above the ground to 14 inches above the ground. Select representative plants and do not include heavily diseased or damaged plants. Place the sample in a paper bag (not plastic). Do not freeze sample. Refrigerate if samples are shipped more than one day after sampling.

Mail the sample plus this data sheet to: Missouri Soil Testing Lab, Attn: Stalk Nitrate Test Challenge, 23 Mumford Hall, University of Missouri, Columbia MO 65211 or MU Delta Regional Soil Testing Lab, 147 State Hwy T, Portageville MO 63873. You must include a completed form with each sample to qualify for no-cost analysis.

Questions? Contact John Lory (LoryJ@missouri.edu; 573-884-7815).