If you would like to be added to this mailing list, send a request to Molly Werner at werner022@umn.edu. This newsletter and the advice herein are free. You usually get what you pay for.

**Crop Weather**

Rainfall, temperatures, degree-days and other current and historical weather data for a spot about two miles west of Lamberton, MN can be found at the University of Minnesota Southwest Research and Outreach Center (SWROC) website: [http://swroc.cfans.umn.edu/WeatherInformation/index.htm](http://swroc.cfans.umn.edu/WeatherInformation/index.htm).

As of June 15th we were at 1157 degree days (Base 50/86 °F). We picked up 141 degree-days and 0.36 inches of precipitation the week of July 9-15. Some nearby areas received more precipitation; helpful with this week’s high temperatures. Fields with moisture stress will be slowed down with this week’s heat wave.

May 14th planted soybeans at the SWROC are at V10/R2. This is a bad Iron Deficiency Chlorosis year. I would be checking these chlorotic spots for **soybean cyst nematode** - just a word to the wise. Nematodes are probable where chlorosis reappears in August.

May 3rd Planted corn is at V12. A few tassels are peaking through in some fields. I have put an order in for good soil moisture and moderate temperatures during corn pollination. Corn moisture stress is visible on light textured soils and compacted areas.

**Grasshoppers**

**Red-legged** and **differential grasshopper nymphs** are active in some soybean fields. The dry 2012 summer and fall encouraged grasshopper survival and egg lay. Differential grasshoppers are fond of laying eggs in late summer and fall soybean fields. Fields taken from CRP or alfalfa often have higher populations of grasshoppers, red-
legged in particular. There are two ways to determine whether a grasshopper population warrants treatment. The first method is to include grasshopper defoliation with other insects. Treat reproductive stage soybeans when whole plant defoliation reaches 20%. This will prevent defoliation from reaching yield reducing levels. This threshold is conservative and allows time to react. Refer to hail loss charts to see how defoliation at various soybean stages impacts yield.

The second method is to count grasshoppers. This is not as difficult as it sounds. As you walk through an area, note the number of grasshoppers that move out of a one square foot area. I would do a minimum of 10 counts, 20 would be better. Average your square foot grasshopper counts and multiply by 9 to calculate the average number of grasshoppers / square yard. Suggested action levels are given in the table below.

<table>
<thead>
<tr>
<th>Nymphs per square yard</th>
<th>Adults per square yard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Margin</td>
<td>In-field</td>
</tr>
<tr>
<td>50-75</td>
<td>30-45</td>
</tr>
</tbody>
</table>

There is a range in treatment numbers and these thresholds are not absolute. Nymphs and field borders require higher grasshopper populations than within field or adult counts to trigger treatment. Small nymphs and smaller sized grasshopper species (e.g. red-legged) and nymphs cause less injury than larger species (e.g. differential).

I prefer to use a combination of grasshoppers/square yard and defoliation when scouting grasshoppers in soybeans; the former to help gauge risk and the latter to help determine when to treat.

Adults of the Carolina locust are present now. Carolina locusts are the large brown grasshoppers with the yellow bordered black hind wings. The hind wings are noticeably displayed in their noisy flights. They are rarely, if ever crop pests.

Grasshoppers can injure or clip pods when soybeans are under late season drought stress.

**Other soybean defoliators**
I don’t believe that we have a major grasshopper outbreak in the works. Other defoliators present at low levels are forage loopers, flea beetles and soybean/alfalfa loopers.

I received a phone call from an agriculturalist frustrated by the insecticide spraying in his area. It seems that some folks are panicking, possibly with some encouragement, and starting insecticide applications at the first sign of a hole in a soybean leaf. These fear-based spray decisions make little biological sense from the producer’s standpoint.

If you spray now, you are at greater risk for later season soybean aphid and two spotted spider mite problems. Make sure you actually have a problem before you talk yourself into spraying. Sure it’s only money but experience indicates that premature insecticide discharge can produce unintended and undesirable consequences.

**Roundup Ready weeds**
For those of you experiencing problems with glyphosate and formosafen (Flexstar) ragweed or waterhemp control in soybeans, it may be worthwhile to look for signs of insect feeding in the stems. I would appreciate pictures of insect damage or specimens. I do not think that stem feeding insects are responsible for a majority of herbicide failures. Herbicide resistant weeds are real.

Even considering late planting and resistant weeds - spraying for soybean weeds should be wrapping up and done for the year.

**Corn rootworms**
The first rootworm beetles should start to emerge later this week or early next week. Emergence should continue well into August. Beetle populations provide a clue into how well your rootworm management is working.

**Soybean aphid**
Aphids are showing up in more fields. They are still very abundant in the volunteer soybeans in corn that we have examined.

This week’s heat wave will slow aphid increases, particularly where soybeans “tip” from moisture stress.

Buildups have been slowed by predators. Some fields have high populations of **aphid midges**. The small, maggot-like larvae of
these tiny flies feed on aphids. The larvae often have an orange or yellow hue. On soybean leaves and stems, you may see dark, shriveled carcasses of soybean aphids that have been killed by aphid midges.

Aphid midges do a good job of knocking back fall soybean aphid populations on Lamberton buckthorn. On soybean, aphids may respond to predation by these midges by producing winged individuals.

Convergent lady beetles and other lady beetle species, thrips, lacewings, damsel bugs and pirate bugs are also actively feeding on aphids now.

The importance of natural enemies is overlooked by many and scoffed at by some. Give them a chance to solve insect and mite problems for you.

Yes, natural enemies can be overwhelmed by established and rapidly increasing soybean aphid populations. That’s where the 250 soybean aphid/plant economic threshold comes in. It is not hard to reach a 250 aphid/plant average when aphid populations are increasing, 80% or more of the plants have aphids and natural enemies are ineffective or absent.

**Signal flies** Small flies with clear, distinctly black marked wings, brown abdomens and metallic thoraxes have been showing up in SW Minnesota soybean fields.

My fly identification skills are not great, quite poor actually, but these greatly resemble the **soybean nodule fly**. I am reasonably confident that I have the family correct. These are Platystomatidae or signal flies.

The white headless, legless soybean nodule
fly larvae are small and maggot like. The larvae feed on and hollow out the nitrogen fixing nodules. They can induce yellowing on soybean but are not typically serious pests, particularly in northern soybean producing areas.

There are no practical management tactics. I am confident that someone will develop and market some impractical management tactics within a few minutes of reading this.

ReNae Clark and Marilyn Salfer, interns at the SWROC were forced to immobilize the fly in the above photograph to take a proper close up photo. This species is apparently quite fragile. The specimen is still immobile. The soybean leaf isn't doing too well either.

Happy trails,

Bruce Potter

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