Soybean Aphid

Bryan Jensen, UW Extension and IPM Program

Soybean aphid reports indicate that numbers are still low but isolated hot spots have been found within some fields. Now is the time to initiate field scouting if you haven’t already. I think most people are familiar with the economic threshold of 250/plant on 80% of the plants when soybeans are in the R1-R5 stage of development. However, there is one aspect of that threshold which is often overlooked. That is the aphid population must be increasing. It is important to recognize if the population is trending up, down or stagnant. Measurable yield loss, let alone economic yield loss, does not happen at 250 aphids/plant. Rather the 250/plant is a trigger for people to consider spraying aphid populations to prevent them from reach a much higher population where economic yield loss can occur. Therefore, multiple field visits are necessary to recognize population trends. Making a no spray decision is difficult to say the least. The more information you have to support that decision certainly increases that comfort level and reduces anxiety. Multiple scouting dates will certainly give a clearer picture regarding population trends.

As you are making field visits, keep records on beneficial insects and % white dwarfs. This information can help explain why aphid populations are increasing or decreasing. Beneficial insects can play a big role in aphid management. White dwarfs (blue triangle) are simply smaller versions of the “normal” soybean aphids (red circle) and develop as a result to changing environmental conditions. White dwarfs are important to observe because their life span is approximately ½ that of normal soybean aphids and their reproductive capacity is only 70% of normal aphids.

A final word on use of “insurance” applications. That is to say spraying at below threshold numbers because insecticide costs are cheap. Are they? If you do not have an in-
sect population that is capable of causing economic loss you are adding to the cost of production, especially in a year when margins are tight. You will kill natural insect enemies which can lead to a resurgence of aphids, or the release of a secondary pest (spider mites?) which are normally control by these natural enemies. Driving over soybeans automatically reduces yield because of wheel traffic and if that application does not have economic value to begin with the wheel traffic takes even more money out of the pocket. Finally, overuse of insecticides can lead to resistance. That is not a road we want to go down.

Brown Mamorated Stink Bug

Bryan Jensen, UW Extension and IPM Program

The brown marmorated stink bug (BMSB) is a new stink bug species which was first detected in North America in 2001 and Wisconsin during 2010. BMSB has a wide host range and overwinter as adults. Likely, there will be a single generation per year in our state. Nymphs were recently observed by PJ Liesch, UW Insect Diagnostic Lab, and I thought it would be a good time to give you a quick heads-up.

After initial detection within an area/state, the normal progression of events is that BMSB first becomes established as a household nuisance before they become an economic agricultural pest. In some areas of the state we are past that first stage and now is the time to start looking for them in the field. Likely, we are a few years away from significant problems, however, it is better to become familiar with them prior to a serious infestation.

We do have several native stink bug species that can be found in agricultural setting but there are subtle differences. Most native adult stink bugs are slightly smaller (1/2 inch) compared to BMSB (5/8 inch). All species, including BMSB, will have a very distinct “shield-shape”. The most identifiable characteristics of the adult BMSB are 1) alternating light to brown spots on the outer edge of their abdomen 2) antennae have alternating brown and light bands and 3) the eyes of fresh specimens are dark red. Please see PJ’s ID picture below. BMSB do have brown/white mottling; however, this characteristic does not separate BMSB from native stink bugs. The immature BMSB is smaller than the adults and range in size from a pin head to ½ inch in length. Nymphs are oval and have dark red eyes similar to adults. Nymphs vary in color and appearance with age. Initially, they range in color from a yellowish red to a creamy white with reddish spots just prior to turning into adults.

BMSB have piercing sucking mouth parts and damage to corn and soybean is commonly found along field edges. In soybean, economic damage is from pod and/or seed feeding which results in absent, discolored or shriveled seed. Furthermore, foliage may stay green longer. In corn BMSB feed through the husk and individual kernels may become shriveled and discolored.

Economic thresholds specific to BMSB have not been established. Until more information is known, consider treating soybean if 40 stink bugs are found/100 sweeps. In corn, economic thresholds are not well developed especially for the reproductive stages. Again, economic damage is not expected at this point in time.

Wisconsin Pest Bulletin

7/14/2017

Krista Hamilton, Entomologist — Bureau of Plant Industry/Division of Agricultural Resource Management, Wisconsin Department of Agriculture, Trade and Consumer Protection

Volume 62 Issue No. 11 of the Wisconsin Pest Bulletin is now available at:

http://datcpservices.wisconsin.gov/pb/index.jsp

I N S I D E  T H I S  I S S U E

LOOKING AHEAD: Spotted wing drosophila emergence escalating

FORAGES & GRAINS: Potato leafhopper counts surge above-threshold

CORN: Corn rootworm beetles appearing in southern Wisconsin

SOYBEANS: Soybean aphid densities still low in most surveyed fields

FRUITS: Apple maggot emergence reported in the last two weeks

VEGETABLES: Striped cucumber beetles, potato leafhopper and squash bug updates

NURSERY & FOREST: Japanese beetles common on nursery stock

DEGREE DAYS: Degree day accumulations through July 12, 2017
Wisconsin White Mold Risk Maps

Jaime Willbur, Graduate Research Assistant, University of Wisconsin-Madison

Risk of apothecial presence and subsequent white mold development has remained steady since last week in non-irrigated fields (Fig. 1). Higher temperatures have offset higher moisture in these drylands situations to keep risk steady. Risk is highest for soybean fields in the west-central to northwest portions of Wisconsin. Risk is also high in a band stretching from south-central Wisconsin to northeast Wisconsin.

For additional information please review: Wisconsin White Mold Risk Maps– July 11, 2017

Veg Crop Updates Newsletter
July 14, 2017

Amanda Gevens, Associate Professor & Extension Specialist, Potato & Vegetable Pathology, Plant Pathology Department, University of Wisconsin-Madison

Click here >>> UWEX Veg Crop Updates Newsletter #12 <<<

In this issue I address the following topics:

Utility of copper applications to hail-damaged potato and vegetable crops
Late Blight and Early Blight Disease Forecast Updates
Early blight management considerations for 2017 (fungicide discussion)
National Late Blight Updates
Cucurbit Downy Mildew Updates

Japanese Beetle info for WI Corn and Soybean Growers

Bryan Jensen, UW Extension and IPM Program

A number of questions and several sightings of Japanese beetles have occurred this past week. Emergence is well under way and damage has been evident in susceptible ornamentals as well as soybean. This summer’s flight seems to heavier than normal. Likely a result of the mild winter.

Japanese beetles complete one generation/year. Adults began emergence around the July 4th weekend and egg laying is probably underway. Immatures (grubs) are not a pest on field crops but will feed on the roots of turf and other ornamental plants. Larval survival is highest when soil moisture is adequate and winters are mild. Adults will feed and thrive through August before populations

PLANT/SAMPLE TYPE, DISEASE/DISORDER, PATHOGEN, COUNTY
start to decline in September. Adult Japanese beetles are approximately ½ inch in length, have a metallic green thorax, bronze elytra (wing covers) and 6 white tufts of hair on each side of the abdomen below the elytra

![Japanese beetle adults](image)

**Soybean**

Adults tend to feed in groups making spot treatment possible. On soybean, they feed on the upper leaves and this damage is best described as “net-like” or “lacy” in appearance. The economic threshold for Japanese beetles and other defoliators on soybean is dependent on crop stage. Vegetative soybean can withstand a moderate amount of feeding (30%). The economic threshold on reproductive soybean is scaled back to 15%. Defoliation estimates should be made on a whole plant basis and is why many people tend to overestimate injury.

![30% defoliation](image)

**Corn**

In corn, Japanese beetles will feed on green corn silk that can result in poor ear fill. They rarely feed on leaves. Feeding damage is similar in appearance to corn rootworm adults and populations may be mixed. The established threshold for Japanese beetles is 3/plant (5-6/plant for rootworm adults) and silk clipping is within ½ inch of the ear tip. Presence of these numbers does not indicate an immediate need for treatment unless green silks are being clipped. If populations are mixed you will have to use your best judgement. However, once silks turn brown pollination is over and that field is no long susceptible to injury.

---

**Wisconsin Pest Bulletin**

**7/21/2017**

Krista Hamilton, Entomologist — Bureau of Plant Industry/Division of Agricultural Resource Management, Wisconsin Department of Agriculture, Trade and Consumer Protection

Volume 62 Issue No. 12 of the Wisconsin Pest Bulletin is now available at:

[https://datcpservices.wisconsin.gov/pb/pdf/07-20-17.pdf](https://datcpservices.wisconsin.gov/pb/pdf/07-20-17.pdf)

**INSIDE THIS ISSUE**

**LOOKING AHEAD**: Spotted wing drosophila counts exceed 100 per trap

**FORAGES & GRAINS**: Surveys find lower potato leafhopper counts this week

**CORN**: Peak flight of western bean cutworm moths in progress

**SOYBEANS**: Soybean aphid densities remain low

**FRUITS**: Apple maggot emergence increasing across much of the state

**VEGETABLES**: Squash bugs becoming more common in gardens

**NURSERY & FOREST**: Daylily rust, mallow sawfly and other reports from recent inspections

**DEGREE DAYS**: Degree day accumulations through July 19, 2017

---

Thirty percent soybean leaf defoliation example. Photo: Roger Schmidt, UW-Madison

---

Japanese beetle adults: ½ inch in length, metallic green thorax and bronze elytra (wing covers), and 6 white tufts of hair on each side of the abdomen below the elytra. Photo: Roger Schmidt, UW-Madison

---

Japanese beetle adults: ½ inch in length, metallic green thorax and bronze elytra (wing covers), and 6 white tufts of hair on each side of the abdomen below the elytra. Photo: Roger Schmidt, UW-Madison
We hope you enjoy this issue of the Wisconsin Fruit Newsletter, where you can find out about:

http://go.wisc.edu/31t8yi

- What’s going on with worker protection
- Integrating biological control into an IPM program
- Plant Disease Diagnostic Clinic update
- Insect Diagnostic Lab update
- Some reflections on weed control in strawberries (part I)
- Cranberry degree-day map and update
- Grape insect scouting report — Japanese beetle
- Observations for the vineyard: Berry splitting after heavy rains
- Wine and table grape developmental stages
- Apple summer diseases
- Apple borers
- Calcium products to control Bitter Pit in ‘Honeycrisp’ apples

Plant Disease Diagnostic Clinic (PDDC) Update, July 21, 2017

Brian Hudelson, Sue Lueloff, John Lake and Ann Joy

The PDDC receives samples of many plant and soil samples from around the state. The following diseases/disorders have been identified at the PDDC from July 8, 2017 through July 14, 2017.

<table>
<thead>
<tr>
<th>PLANT/SAMPLE TYPE</th>
<th>DISEASE/DISORDER</th>
<th>PATHOGEN</th>
<th>COUNTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRUIT CROPS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blueberry</td>
<td>Phomopsis Canker</td>
<td>Phomopsis sp.</td>
<td>Kewaunee</td>
</tr>
<tr>
<td>Grape</td>
<td>Anthracnose, Phomopsis Cane and Leaf Spot, Sphaceloma ampelinum, Phomopsis viticola</td>
<td>Dane, Dane</td>
<td></td>
</tr>
<tr>
<td>SPECIALTY CROPS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hop</td>
<td>Fusarium Canker</td>
<td>Fusarium sp.</td>
<td>Racine</td>
</tr>
<tr>
<td>VEGETABLE CROPS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asparagus</td>
<td>Root/Crown/Stem Root</td>
<td>Fusarium oxysporum</td>
<td>Vernon</td>
</tr>
<tr>
<td>Bean (Lima)</td>
<td>Alternaria Leaf Spot, Alternaria sp.</td>
<td>Columbia</td>
<td></td>
</tr>
<tr>
<td>Cabbage</td>
<td>Bacterial Leaf Spot, Pseudomonas syringae pv. maculicola</td>
<td>Waupaca</td>
<td></td>
</tr>
<tr>
<td>Cucumber</td>
<td>Angular Leaf Spot, Pseudomonas syringae pv. lachrymans</td>
<td>Waushara</td>
<td></td>
</tr>
<tr>
<td>Tomato</td>
<td>Septoria Leaf Spot, Septoria lycopersici</td>
<td>Columbia, Dane, Green Lake, Sauk</td>
<td></td>
</tr>
</tbody>
</table>

For additional information on plant diseases and their control, visit the PDDC website at pddc.wisc.edu. Follow the clinic on Facebook and Twitter @UWPDDC.

In-Season Corn Disease Management Decisions – 2017

Damon L. Smith, Extension Field Crops Pathologist, University of Wisconsin-Madison

Tasseling has begun on field corn in the southern region of Wisconsin. With this, comes many questions about applying fungicide to control disease and preserve yield. What diseases are out there? What disease(s) should I focus on in-season? When should I spray? What should I spray?

You may view the latest post at:


Western Bean Cutworm Update

Bryan Jensen, UW Extension and IPM Program

Based on degree day accumulations, DATCP’s Pest Bulletin reports and individual calls, the time for Western Bean Cutworm scouting is here for southern Wisconsin and soon will be in all corn growing areas of Wisconsin. Corn
development is catching up to Western Bean Cutworm phenology and soon will soon be susceptible to injury. Some background information was given in last week’s WI Crop Manager. However, this week I could like to make a few comments on scouting and management.

Scout all susceptible corn regardless of above ground traits. Traits will vary on their susceptibility, however, the Vip3A protein appears to have the best efficacy for Western bean cutworm. For more information regarding the presence of proteins in the different trait families consult the Handy Bt Trait Table that Dr. Chris DiFonzo, Michigan State University, updates annually.

Treat when 5% of the plants have egg masses and/or young larvae but before larvae infest the ear. Eggs masses are usually laid on the upper leaf surface on the upper most leaves. Recognition of egg masses is assisted by the shadow they create when backlit by the sun. Larvae, after hatching, are very small and hard to see. After hatching they consume most of the egg shell before dispersing. This makes identification of egg masses difficult.

Timing of an insecticide application is important, but difficult because of the extended flight and egg laying period. Insecticide applications will not kill unhatched larvae nor will they kill larvae that have already entered the ear. Therefore, applications should be made when corn is most susceptible (tasseling) and when eggs are beginning to hatch so that larvae encounter a lethal concentration soon after hatch.

Building a field history can be important for future planning. Monitor fields prior to harvest to confirm recommendations, control efficacy and to assist with planning for next year. Look for kernel damage, exit holes from the ear. Bird damage may also be a sign of a recent infestation.

**Corn Rootworms**

Bryan Jensen, UW Extension and IPM Program

Northern and Western corn rootworm beetles are emerging and larval feeding is starting to peak. Monitoring root damage over the next few weeks and scouting for beetles in continuous corn will provide useful information for the 2018 growing season.

Digging and evaluating corn roots for damage will tell you several things including:

1. How well your rootworm control practice(s) worked
2. If you had problems with rotation resistance western corn rootworms on first year corn
3. Confirm if Bt resistance might be present

Corn roots may be evaluated for damage starting the end of July and likely can be accomplished throughout the month of August. However, the optimal time period is late July through early August. The main drawback of waiting is that root regeneration may mask injury if you wait too long.

Scouting for corn rootworm beetles is often overlooked but provides valuable information that can be used to diversify management practices. Rotating to a crop other than corn continues to be a viable, if not preferred management practice. However, it does not always fit in every producer’s strategy. If rotation is not an option, whole plant beetle counts taken during the egg laying period (early/mid-August to early September) will provide valuable, field-specific data. Monitoring beetles has never been fun or easy. However, DATCP’s Pest Survey Bulletin indicates low beetle pressure over the past few years which indicates to me, that beetle monitoring will provide useful information to your clientele. Using this data will help you recommend management strategies (Bt hybrids, soil applied insecticides on conventional hybrids and seed treatments) which are the best match for each individual field. Diversifying management strategies will reduce the reliance on Bt CRW hybrids and slow resistance while maintaining economic control. This video will provide basic information needed to monitor beetles.

**Thistle Caterpillars in Soybean**

Bryan Jensen, UW Extension and IPM Program

Several calls and questions have come in to both myself and PJ Liesch of the Insect Diagnostic Lab regarding an odd type of caterpillar feeding on soybean. This is an insect call the thistle caterpillar and is the immature stage of the painted-lady butterfly. They do not overwinter.
in the Midwest but migrate here during the spring and summer as an adult. In most years, people do not notice the larvae or their feeding. This year, however, has been an exception we’ve received many calls and concerns about economic damage.

Although there can be some color variation among larvae, the usual range is from brown to black with yellow striping. One diagnostic, and very eye-catching feature, is that larvae will have several branched spines over the length of their body.

Larvae feed on relatives of the sunflower family, including thistles, but can also feed on soybeans and late instars will tie the soybean leaves together with webbing. It is rare for thistle caterpillars to cause significant economic injury to soybean by themselves. However, the showy nature of their leaf webbing catches a lot of attention. If populations are high, consider treatment if defoliation is greater than 15% on soybean in the reproductive stages of development. Thirty percent defoliation in the vegetative stages. However, do consider the size of larvae before spraying. Thistle caterpillars may grow to a length of 1 ½ inches. Most of the calls this summer have been regarding larvae in the upper ranges of this size limit, indicating they won't be feeding much longer and a rescue treatment will not likely result in a return on investment.

**Wisconsin Cover Crop Conference**

Heidi Johnson, University of Wisconsin-Extension Dane County

The 2018 Wisconsin Cover Crop Conference will take place on February 27 (9am-4pm) at the Holiday Inn in Steven's Point. This will be a statewide conference geared toward helping Wisconsin farmers use cover crops more effectively. Many of the presenters will be Wisconsin grain and livestock farmers speaking from experience about what has worked and hasn't worked in their Wisconsin cropping systems. Barry Fischer, Indiana NRCS Soil Health Specialist and renowned cover crop expert, will be the keynote for the event. A full agenda will be released soon. More info will be available soon: [http://fyi.uwex.edu/covercrop/](http://fyi.uwex.edu/covercrop/)

**Report a pigweed and help prevent spread of new potentially herbicide resistant pigweed**

Mark Renz, UW Madison Associate Professor and Extension Specialist

Sam Marquardt, UW Madison Assistant Outreach Specialist

Concern about the continued spread of waterhemp and Palmer amaranth exist in Wisconsin. While we have long battled other pigweeds like red-root and smooth, these species are a greater concern as they:

1. Are more competitive
2. Can germinate later into the season, requiring additional late season management
3. Produce more seed

However, the biggest concern is that these species possess a higher potential for developing herbicide resistance compared to other pigweed species. Resistance to glyphosate has developed in Wisconsin and other states and continues to expand for this herbicide as well as other modes of action. In fact, nearby states now have waterhemp populations resistant to more than four different modes of action.

Multiple modes of action resistance have also been reported for Palmer amaranth which has become a nuisance in other Midwestern states south of Wisconsin.

---

**New Pigweed ID card available**

Available from the NPM Program! A new visual guide for identifying two of the pigweed species of special concern in Wisconsin: Waterhemp (Amaranthus tuberculatus) and Palmer Amaranth (Amaranthus palmeri). Waterhemp is common in Wisconsin and has documented resistance to some herbicides. Palmer is not common in Wisconsin but with increasing populations in neighboring states, it is of concern since there has been documented resistance to many herbicides.

This informative card has background information about these two species, as well as a visual guide for identifying what type of pigweed you might have. The printed publication is a folded card that is 4 inches wide by 7 inches tall.

Click [here](#) to view the PDF version of the identification card.
Palmer amaranth has been spreading north and found to be in a few counties in the southwest/central Wisconsin region (see map below).

As concern exists on the spread of these species in Wisconsin, we conducted a survey of these two species in Wisconsin corn and soybean fields with the assistance of DATCP. Waterhemp, was on average present in 5% of Wisconsin fields sampled. Comparing results to a survey five years ago, we did not find an overall increase in this plant statewide, but did within specific regions of the state: northcentral, northwestern, and southcentral. Within these regions waterhemp presence was in over 10% of fields sampled. In contrast no populations of Palmer amaranth were discovered. While 474 fields were sampled, tens of thousands of fields exist throughout the state. This randomly sampling alone is not an effective method to detect early populations. We require active monitoring and reporting by YOU! Active monitoring has allowed us to better understand distribution of waterhemp and Palmer in Wisconsin. To date this is our current knowledge of distributions for both of these species.

1. Palmer amaranth Reports

2. Waterhemp Reports

This summer we are looking to improve our understanding of the distribution of these species. Thus we are launching the *report a pigweed program through our first detector’s program*. We are asking that you report locations of suspected waterhemp and/or Palmer amaranth locations throughout the state. We have created videos, factsheets, and other resources to aid in identification (see link above), and will confirm any suspected plants. To keep it simple we are asking that you send any potential observations to reportapigweed@gmail.com. Detailed instructions are available [here](#), but in brief we are asking that you include the following:

1) Location of the pigweed: GPS coordinates or an address/road intersection

2) The habitat where the pigweed is growing: agricultural field (indicate what type of field, e.g. corn, soybean, etc.), home garden, roadside, or other (please describe).

3) Indicate whether the plant may be herbicide resistant, and if so, what herbicide has been applied.

4) Identifying Pictures of the pigweed, including a picture of the whole plant, a picture of the plant stem, and a picture of the leaf and petiole (leaf stem) also are helpful to verify populations. (see images below) Check the [website](#) if you need help distinguishing identifiable features present on these pigweeds.

Include one close-up picture of the stem to show it does not have hairs.
Include one close-up picture of the leaf shape and petiole (leaf stem) folded over the leaf to show whether the petiole is shorter or longer than the leaf.

It is our hope that this information in combination with other efforts to identify and report problem pigweeds will assist in early detection of new populations in Wisconsin and encourage management before they are spread. This information will also help us to better understand what factors are driving spread. Check back on the First Detector Network website periodically to find more information regarding the flowering stages of these pigweeds along with an informational video about why we need to care about herbicide resistance in these pigweeds.

**Wisconsin White Mold Risk Maps-July 21, 2017**

Damon L. Smith, Extension Field Crops Pathologist, University of Wisconsin-Madison
Jaime Willbur, Graduate Research Assistant, University of Wisconsin-Madison

Sclero-cast: A Soybean White Mold Prediction Model

**This tool is for guidance only and should be used with other sources of information and professional advice when determining risk of white mold development.**