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Pesticide Applicator Training with Simultaneous Spanish Translation on Jan 31

Glen Nice, PAT Program, UW-Madison

A pesticide applicator training designed specifically for Spanish-speaking individuals will be held on January 31 at UW Fond du Lac in Fond du Lac County. The training will be presented in English and simultaneously interpreted into Spanish by a team of professional language interpreters. The day will also include Worker Protection Standard training for workers and show the EPA approved training video in Spanish. Participants will have the option of taking the private applicator certification test following the training. Please note: The training is offered in both English and Spanish, but the test is only offered in English.

January 31st, UW Fond du Lac, 400 University Drive, Room AE-205/206. Registration is required – $30.
Before we start, we fully acknowledge our title “Best management practices for growing second year soybeans” is a bit misleading as we do not advocate this practice (its not a BMP!) but we thought we could sucker you into reading this article if it had an enticing title!

Our main reason for writing this article stems from growers questioning their 2017 bottom line. This issue was highlighted in the article written by Gary Schnitkey and Darrel Good entitled 2017 Crop Budgets and Current Prices Say Switch to Soybeans and Expect Low Returns. It is thought that farmers may plant 5 million more acres of soybean in 2017 than they did in 2016 based on current corn:soybean price ratios and input prices. Those acres have to come from somewhere and many of them will be from second-year soybean.

1. Balancing short-term versus long-term profitability (i.e. economic sustainability). Short-term profitability may drive some farmers to consider planting more soybeans in 2017. Data from our long-term rotation experiment clearly shows the benefit of crop rotation to the soybean crop. It is amazing that after 5 years of corn, it only took 3 years of soybean for the yield to drop to continuous soybean (20+ years) yield levels. Good news is that 2nd year soybean yielded the same as soybean in a corn-soybean rotation. We could hypothesize then that the yield of the 3rd year of continuous soybean (in our experiment) would be similar to a 2nd year of soybean in a corn-soybean (C-S-S) rotation. Our data clearly shows that 3 or more years of continuous soybean gives you a 4+ bu per acre hit when compared to a corn-soy rotation and moves you close to that of continuous soybean. In short, you are setting your long-term profitability up for a hit. So what do you do? If it were my land I would stick to my rotations on my owned land and consider 2nd year soybeans on the rented ground.

2. Be aware that soybean after soybean will alter the pest complexes in your fields. Some of these alterations may take years to undo as you will be making a long-term impact on your soil and resulting soil health. Also don’t automatically think that simply adding a cover crop to this S-S rotation will “fix” these issues.

   - Plant a different variety than was planted in that field last year and make sure it has strong disease resistance traits to the problems you have in that field! Every variety has a weakness and planting the same variety on the same land 2 years in a row will expose that weakness. Note that these varieties must be truly different. The same bean in a different color bag will greatly increase your risk of disease losses. Please see our 2016 Wisconsin Soybean Variety Performance Trials for information.

   - Test for SCN and select SCN resistant varieties. SCN proliferates in long-term soybean cropping systems.

   - Be prepared to scout your fields more intensively to get ahead of any disease problems. Increased disease pressure may provide an opportunity to see yield responses from fungicides and insecticides. You may need to include these costs into your original economic decisions.
• Keep seeding rates lower if white mold was a problem in the field

• Use a seed treatment at the max a.i. fungicide rate.

• Use a pre-emergence herbicide and use multiple modes of action. If you had weed escapes, expect even larger problems in soybean after soybean.

• Soil sample and replace K if needed: I know growers are going to want to cut back on inputs but 2016 brought us record yields. An 80 bushel soybean crop meant you removed ~98 pounds per acre of K20 equivalent fertilizer. Growers often routinely rely on carryover fertilizers for soybean when rotated with well-fertilized corn. Soybean after soybean may require additional fertilizer, especially K.

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Team Grains Tackles Profitability in Low-Margin Years

Damon Smith, Extension Field Crops Plant Pathologist

Team grains specialists are hitting the road with a series of talks, “Grain Management in Low-Margin Years” and an accompanying fact sheet that address how to best handle different aspects of production during low-margin years. The talks will start in in February of 2017 and will take place at locations throughout the state. Each talk is about a half-hour long with time for Q&A. If one of the presenters is not available for any of the dates, the talks will also be available as high quality video presentations. For each location, the agent or sponsor can decide what topics to include and a flyer template is available to customize and promote the event.

Talks and speakers include:

1. **Soybean Inputs that Deliver the Highest ROI in a Low-Margin Year**  
   – Shawn Conley, UW Agronomy, Soybean and Small Grains Specialist

2. **Practical Weed Management for Low-Margin Years**  
   – Dan Smith, UW NPM, Southwest Regional Specialist

3. **Fundamental Soil Fertility Strategies for Success**  
   – Carrie Laboski, UW Soil Science, Soil Fertility/Nutrient Management Specialist

4. **How to Survive and Thrive on Current Corn Price Projections**  
   – Joe Lauer, UW Agronomy, Corn Specialist

5. **Low Grain Prices = Smart Disease Management Decisions**  
   – Damon Smith, UW Plant Pathology, Field Crops Pathology Specialist

6. **Managing Insects Economically Using Conventional Hybrids and Thresholds**  
   – Bryan Jensen, UW Entomology, Field Crops Entomology Specialist

7. **Machinery/Technology Management and Tillage Considerations to Reduce Operational Costs**  
   – Francisco Arriaga, UW Soil Science, Soil Science Specialist and Brian Luck, UW Biological System Engineering, Machinery Specialist

8. **Partial Budget Analysis: A Practical Tool for Low Margin Years**  
   – Paul Mitchell, UW Ag & Applied Econ, Cropping Systems Specialist

[CLICK HERE](#) For information on specific locations and host agent contact e-mail.

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2016 Wisconsin Oats and Barley Performance Test Results

Lucia Gutierrez and Shawn Conley

The Wisconsin oats and barley performance trials are conducted each year and include released varieties, experimental lines from Wisconsin and Midwestern States, and lines from private companies. The main objective of these trials is to obtain data on how varieties perform in different locations and years. Growers can use this data to help choose the best varieties to plant, and breeders can use the data to decide on whether or not to release a new variety and to select parents to make new crosses.
2016 Wisconsin Field Crops Pathology Fungicide Tests Summary

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

The 2016 Wisconsin Field Crops Pathology Fungicide Tests Summary is now available online as a downloadable PDF. This report is a concise summary of pesticide related research trials conducted in 2016 under the direction of the Wisconsin Field Crops Pathology program in the Department of Plant Pathology at the University of Wisconsin-Madison.

Click here –> 2016 Wisconsin Field Crops Pathology Fungicide Tests Summary

2017 OGRAIN Organic Grain Production and Marketing Workshop

Anders Gurda, Associate Researcher in Organic and Sustainable Cropping Systems

Registration is open for the 2017 OGRAIN Organic Grain Production and Marketing Workshop on January 21st and 22nd, 2017!

Two days of expert presentations, engaging panels, productive discussions, and plenty of time to meet other farmers interested in organic grain production in the Upper Midwest.

For more information and to register go to: http://ograin.bpt.me

Response of Broad Spectrum and Target Specific Seed Treatments and Seeding Rate on Soybean Seed Yield, Profitability and Economic Risk

Adam P. Gaspar, Daren S. Mueller, Kiersten A. Wise, Martin I. Chilvers, Albert U. Tenuta and Shawn P. Conley, UW Extension

- Organic certification with Jackie DeMinter of MOSA
- Organic grain 101 with Carmen Fernholz, A-Frame Farm and University of MN
- Beginning farmer panel
- Organic Marketing panel
- Food-grade grain production with Dr. Julie Dawson (UW-Madison) and Gilbert Williams (Lonesome Stone Milling LLC)
- Organic No-Till production with Dr. Erin Silva and farmer panel
- Finding the right rotation for you (workshop led by successful organic grain farmers)
- And many more....

• The commercial base (CB) and ILeVO (CB + fluopyram) seed treatments decreased risk and substantially increase profit across a wide range of seeding rates.

• X Yield response to seed treatment was environment specific, and across all environments, the yield response to ILeVO was 2.8% compared to 5.3% (WI-SDS) and 6.1% (IA) when visual SDS symptoms were present.

• X At 2016 and 2017 seed and seed treatment costs, CB and ILeVO seed treatments at 140,000 seeds/a reduced risk greater than 70% of the time and increased average profit ($4 –19/a) across an array of environments and grain sale prices ($8 –11/bu).

• X The CB or ILeVO seed treatments realized the lowest risk and highest average profit increase when seeding rates were lowered to the economically optimal seeding rate of 103,000 – 112,000 seeds/a.
• X Increase seeding rates as grain sales prices increase to reduce economic risk and maximize profit, especially for untreated seed. CB and ILeVO seed treatments maintain higher break-even probabilities and profit margins at reduced seeding rates.

• X Particularly target these seed treatments for fields with a history of SDS and damage from early

Click here to read the full publication.

**Evaluation of Ascend®: Hormones that stimulate corn root growth – Experiment 2**

Joe Lauer, Corn Agronomist

During good times and bad, but especially years with strong grain prices, numerous products appear on the market that seem too good to be true. Often these products come with wild claims. Little information is available for growers to make an informed decision, so it often becomes a case of “buyer beware.”

Ascend® is touted by Winfield Solutions, LLC, as a “… tool to increase plant efficiency” and “… can stimulate higher yields through a larger root mass ….” Ascend® contains the plant growth regulators cytokinin (0.09%), gibberellic acid (0.03%) and indole butyric acid (0.045%). It can be applied at rates of 4.5 to 6 oz/A in-furrow at planting, 2×2 inches below the seed at planting, at 6.4 to 10 oz/A at the 3 to 10 leaf stage, and/or at 6.4 oz/A at the R1-R3 leaf stage. We tested the plant growth regulator Ascend® at eleven locations in Wisconsin by applying it to an adapted hybrid and comparing it to the same hybrid left untreated during 2012 (4 reps) and 2016 (3 reps).

The 2012 results have been posted earlier (click here). If there was any growing season when a corn root growth enhancer should work it was during the drought of 2012. During 2012, locations that exhibited significant drought stress included Chippewa Falls, Lancaster, Janesville, Arlington and Fond du Lac. Hancock was an irrigated site. At seven of eleven locations there was no statistical difference when using Ascend®. At three of eleven locations, the untreated plots yielded more than plots treated with Ascend®. At one of eleven locations, Ascend® treated plots yielded more than untreated plots. At none of the sites that had significant drought stress during the growing season did Ascend® stimulate higher yields. Across all locations there was no statistical difference between corn treated with Ascend® (196 bu/A) and untreated corn (200 bu/A).

During 2016, we expanded the number of Ascend® treatments to in-furrow and foliar treatments. All were applied within the labelled rates and timings. The 2016 growing season was an ideal season throughout the state. Little stress was observed. We measured no signifi-

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<td>NS</td>
</tr>
<tr>
<td>Fond du Lac</td>
<td>238</td>
<td>247</td>
<td>241</td>
<td>246</td>
<td>NS</td>
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<tr>
<td>Galesville</td>
<td>233</td>
<td>241</td>
<td>231</td>
<td>231</td>
<td>NS</td>
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<tr>
<td>Hancock</td>
<td>216</td>
<td>228</td>
<td>219</td>
<td>230</td>
<td>10</td>
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<tr>
<td>Janesville</td>
<td>259</td>
<td>255</td>
<td>256</td>
<td>253</td>
<td>NS</td>
</tr>
<tr>
<td>Marshfield</td>
<td>208</td>
<td>211</td>
<td>215</td>
<td>211</td>
<td>NS</td>
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<tr>
<td>Montfort</td>
<td>254</td>
<td>257</td>
<td>255</td>
<td>267</td>
<td>NS</td>
</tr>
<tr>
<td>Seymour</td>
<td>209</td>
<td>204</td>
<td>199</td>
<td>204</td>
<td>NS</td>
</tr>
<tr>
<td>Valders</td>
<td>226</td>
<td>214</td>
<td>226</td>
<td>219</td>
<td>NS</td>
</tr>
<tr>
<td>All locations</td>
<td>230</td>
<td>229</td>
<td>228</td>
<td>230</td>
<td>NS</td>
</tr>
</tbody>
</table>
cantly yield response using Ascend® plant growth regulator (Table 1). At only one location, Hancock, was there a statistical difference using Ascend® when the control and the Ascend® foliar treatment were higher yielding than the Ascend® in-furrow and Ascend® in-furrow + foliar treatment. Across all locations there was no statistical difference between corn treated with Ascend® (228-230 bu/A) and untreated corn (230 bu/A). No statistical differences were observed for other agronomic measurements (Table 2).

*Ascend® is a “buyer beware” product. Across all locations, the yield range due to treatment response is 2 bu/A, with the untreated check as responsive as the best Ascend® treatment. The evidence from 11 locations across two years seems to confirm the conclusion to be “wary” of this product. However, I always encourage people who may want to try it on their farm to do so by buying a small amount and testing it across a few acres. You may find a response on your farm. If you do, you can always buy more next year.

### New Resource Available for Grain Production in Low-Margin Years

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

A new resource “A4137 – Grain Management Considerations in Low-Margin Years” is now available [online for download](#). This fact sheet is meant to assist you in making informed decisions about your production system in a low-margin production year.

To further complement this new resource, the authors which are team Grains specialists, are hitting the road with a series of talks, “Grain Management in Low-Margin Years” that address how to best handle different aspects of production during low-margin years. The talks will start in February of 2017 and will take place at locations throughout the state. Each talk is about a half-hour long with time for Q&A. If one of the presenters is not available for any of the dates, the talks will also be available as high quality video presentations. A hardcopy of the A4137 fact sheet will also be handed out at each meeting.

**Talks and speakers (authors) include:**

- **Soybean Inputs that Deliver the Highest ROI in a Low-Margin Year** – Shawn Conley, UW Agronomy, Soybean and Small Grains Specialist
- **Practical Weed Management for Low-Margin Years** – Dan Smith, UW NPM, Southwest Regional Specialist
- **Fundamental Soil Fertility Strategies for Success** – Carrie Laboski, UW Soil Science, Soil Fertility/Nutrient Management Specialist
- **How to Survive and Thrive on Current Corn Price Projections** – Joe Lauer, UW Agronomy, Corn Specialist
- **Low Grain Prices = Smart Disease Management Decisions** – Damon Smith, UW Plant Pathology, Field Crops Pathology Specialist
- **Managing Insects Economically Using Conventional Hybrids and Thresholds** – Bryan Jensen, UW Entomology, Field Crops Entomology Specialist
- **Machinery/Technology Management and Tillage Considerations to Reduce Operational Costs** – Francisco Arriaga, UW Soil Science, Soil Science Specialist and Brian Luck, UW Biological System Engineering, Machinery Specialist
- **Partial Budget Analysis: A Practical Tool for Low...**
Pest Management in Wisconsin Field Crops, A3646

P. J. Liesch, Glenn Nice, Mark Renz, Damon Smith and Bryan Jensen

There have been changes in location and distribution of UW Extension’s, Pest Management in Wisconsin Field Crops Bulletin (A3646). This publication can now be purchased ($30, plus $1.65 third party credit card acceptance fee) or downloaded at the Pesticide Applicators Training Program’s Store https://patstore.wisc.edu/secure/browse_cat.asp?category_id=39

Pest Management in Wisconsin Field Crops is updated annually and contains general and specific pest management recommendations for corn, soybean, forages, small grains and stored grain. Including rates, remarks and performance data for pesticides.

Nutrient Management Farmer Education Curriculum Revised

Scott Sturgul – NPM Program

An updated Nutrient Management Farmer Education Curriculum was released in early January 2017. This popular collection of nutrient management education tools is produced by the UW-Extension Nutrient Management Team with contributions from numerous programs and individuals. The curriculum contains training materials required for Wisconsin Dept. of Agriculture, Trade and Consumer Protection (WDATCP) certification of farmers writing their own nutrient management plans.

Revisions to the curriculum include:


- Information on the SnapPlus nutrient management planning software program. The SnapPlus module includes the December 2016 version of the SnapPlus training manual, SnapPlus “how to” videos, and information about the SnapMaps feature of SnapPlus.

  - Links to useful nutrient management mobile applications.

  - A collection of informative nutrient management videos.

  - Updated information from WDATCP, WDNR and USDA-NRCS on their nutrient management programs.

The 2017 edition of the curriculum is contained on a USB flash drive. The flash drive contains multiple PowerPoint presentations for the farmer workshops. Also included are speaker notes, associated publications and worksheets, program evaluation materials, and a user’s manual.

If you have not yet received a 2017 version of the curriculum and would like a copy, please contact Scott Sturgul at ssturgul@wisc.edu.


**Cover Crops Do’s & Don’t’s**

Shawn P. Conley, Soybean and Wheat Extension Specialist, Department of Agronomy

[Click here to read the full publication](#), uncovering cover crop facts and myths about weed, insect, and disease management.

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**Preventing Cover Crops From Becoming Your Next Weed Problem**

Daniel H. Smith, Mimi Broeske, and Kevin Shelley- Nutrient and Pest Management Program, University of Wisconsin-Madison

Termination of cover crops can be a challenge. A new publication from the Nutrient and Pest Management program details termination techniques, herbicide considerations, herbicides and weather, cover crop vs. forage crop concerns, and finally termination and crop insurance. As farmers and agronomists plan for spring cover crop termination, please follow the link below to read the full article detailing the termination recommendations.

[Click here to view the PDF](#).

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**UW-Madison/Extension Plant Disease Diagnostic Clinic (PDDC) Update**

Brian Hudelson, Sean Toporek, Jake Kurczewski 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 November 26, 2016 through December 2, 2016.

<table>
<thead>
<tr>
<th>Plant/Sample Type, Disease/Disorder, Pathogen, County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Crops</td>
</tr>
<tr>
<td>Wheat, Barley Yellow Dwarf, Barley yellow dwarf virus, Walworth</td>
</tr>
<tr>
<td>Forage Crops</td>
</tr>
<tr>
<td>Alfalfa, Aphanomyces Root Rot, Aphanomyces euteiches, Dane</td>
</tr>
<tr>
<td>Alfalfa, Common Leaf Spot, Pseudopeziza medicaginis, Dane</td>
</tr>
<tr>
<td>Alfalfa, Pythium Root Rot, Pythium sp., Dane</td>
</tr>
<tr>
<td>Alfalfa, Rust, Uromyces sp., Dane</td>
</tr>
<tr>
<td>Vegetable Crops</td>
</tr>
<tr>
<td>Broccoli, Tobacco Mosaic, Tobacco mosaic virus, Milwaukee</td>
</tr>
<tr>
<td>Potato, Late Blight, Phytophthora infestans, Rock</td>
</tr>
<tr>
<td>Tomato, Tobacco Mosaic, Tobacco mosaic virus, Jackson</td>
</tr>
</tbody>
</table>

For additional information on plant diseases and their control, visit the PDDC website at [pddc.wisc.edu](http://pddc.wisc.edu).

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**UW-Madison/Extension Plant Disease Diagnostic Clinic (PDDC) Update**

Brian Hudelson, Sean Toporek, Jake Kurczewski 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 December 10, 2016 through December 16, 2016.

<table>
<thead>
<tr>
<th>Plant/Sample Type, Disease/Disorder, Pathogen, County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vegetable Crops</td>
</tr>
<tr>
<td>Cucumber, Powdery Mildew, Sphaerotheca fuliginea, Waukesha</td>
</tr>
<tr>
<td>Potato, Black Dot, Colletotrichum coccodes, Portage</td>
</tr>
<tr>
<td>Potato, Fusarium Dry Rot, Fusarium sambucinum, Dane</td>
</tr>
<tr>
<td>Potato, Leak, Pythium sp., Dane</td>
</tr>
<tr>
<td>Tomato, Powdery Mildew, Oidium sp., Dane</td>
</tr>
<tr>
<td>Soil</td>
</tr>
<tr>
<td>Alfalfa Soil, Aphanomyces Seedling Blight, Aphanomyces euteiches race 2, Waukesha</td>
</tr>
<tr>
<td>Soybean Soil, Soybean Cyst Nematode, Heterodera glycines, Brown, Dane, Iowa</td>
</tr>
</tbody>
</table>

For additional information on plant diseases and their control, visit the PDDC website at [pddc.wisc.edu](http://pddc.wisc.edu).
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 December 17, 2016 through December 23, 2016.

**Plant/Sample Type, Disease/Disorder, Pathogen, County**

**Vegetable Crops**
Lettuce, Root Rot, Pythium sp., Winnebago

For additional information on plant diseases and their control, visit the PDDC website at pddc.wisc.edu.

The 29th issue of the Vegetable Crop Update is now available. In this edition, please find information on:

- An update on WI's 24(c) Special Registration for Omega 500F for powdery scab management of potato
- Agendas and information for upcoming vegetable education meetings in Wisconsin.

Click here to view this update.
Preventing Cover Crops From Becoming Your Next Weed Problem Video

Daniel H. Smith, Nutrient and Pest Management Program
University of Wisconsin-Madison

Termination of cover crops can be a challenge. A new video from the Nutrient and Pest Management program details preventing cover crops from becoming problematic weeds. As farmers and agronomists plan for spring cover crop termination, watch the video below detailing the termination recommendations.

Click here to watch the video.

Top Four Considerations for Reducing Spray Drift

Shawn P. Conley, Soybean and Wheat Extension Specialist

Spray drift is the movement of herbicides and other crop inputs away from intended target sites through the air. Several factors play a role in reducing spray drift, but farmers should pay particular attention to these four:

- Nozzle Selection
- Drip Size
- Application Speeds
- Additional Options

Click here to read the PDF.
Herbicide Classification “Cheat Sheet” Poster

Shawn P. Conley, Soybean and Wheat Extension Specialist

This chart groups herbicides by their modes of action to assist you in selecting herbicides

1. to maintain greater diversity in herbicide use and

2. to rotate among effective herbicides with different sites of action to delay the development of herbicide resistance.

Click here to view the Herbicide Classification “Cheat Sheet.”

Call for Nominations

Bryan Jensen, IPM Program

The Wisconsin CCA Board is now accepting nominations for two positions on the WI CCA Board. The nominee must be a CCA in good standing and submit a short biography (up to ½ page) by Thursday, March 9, 2017. The board meets 3-4 times/year and each term lasts three years. There is a two term limit. Please consider nominating yourself or another qualified CCA.

Anticipated election timeline:

- Nomination deadline: March 9, 2017
- Electronic Ballot emailed: Approximately March 17, 2017
- Voting Deadline: April 7, 2017
- Notification of results: Mid-late April, 2017

Biographies should be submitted by the March 9, 2017 deadline to Bryan Jensen, bmjense1@wisc.edu Please email or call Bryan (608-263-4073) if you have questions.

Handy Bt Trait Table: 2017 Update

Bryan Jensen, Extension Entomology and IPM Program

Dr. Chris DiFonzo, Extension Entomologist at Michigan State University, has recently updated her Handy Bt Trait Table and has made it available on her website. This publication continues to be my primary resource for all the Bt corn hybrids and helps me determine which Bt proteins are available in each trait family as well as the insect control spectrum. This year it has gotten even better! Chris has included a column which indicates any local and/or regional insect control problems that have been encountered to date. Thank you Chris!

MOSES Organic Farming Conference and Organic University to offer Continuing Education Units (CEU) for Certified Crop Advisors (CCA)

Kevin B. Shelley, Nutrient and Pest Management Program University of Wisconsin-Madison

Professionals certified through the American Society of Agronomy as Certified Crop Advisors (CCA) working in organic crop production, and those professionals interested exploring approaches to organic production, can obtain continuing education units (CEU’s) at the 2017 MOSES Organic Farming Conference. The conference, conducted by the Wisconsin-based Midwest Organic and Sustainable Education Service (MOSES), will be held February 23-25 in La Crosse, WI.

Advanced registration is OPEN until Feb. 9, and walk-in registration after that. The conference offers a total of 115 CEU credits to attending certified crop advisors in three days of programming in many of the 65 workshops on field crops, livestock, dairy, market and specialty crops, plus strategies to help you manage and grow your business. Whether you are experienced in, or new to organic production, you’ll find workshops tailored to your needs. CEUs are also offered in several popular pre-conference Organic University courses which offer a deep dive into a particular farming topic and a custom-made resource book. These courses take place Thursday, Feb. 23. See the 2017 course topics here. Finally, there is a trade show featuring over 170 exhibitors from resource groups, certification agencies, buyers, processors, cooperatives and suppliers in the organic industry.
Wisconsin Herbicide Mode of Action Chart

Daniel H. Smith and Mimi Broeske, Nutrient and Pest Management Program

University of Wisconsin-Madison

The Nutrient and Pest Management program has recently updated the Wisconsin herbicide mode of action chart. This publication provides herbicide mode of action, group number, site of action, chemical family, active ingredient, and example trade names for herbicides currently registered in Wisconsin. The second page of the chart details registered herbicide combination products in Wisconsin including the trade name, active ingredients, trade name examples included in the premix, and site of action group.

Click here to view the full PDF.

Winners of the 2016 WSA Soybean Yield Contest are Announced

Shawn P. Conley, Soybean and Wheat Extension Specialist

The 1st place winner in Division 4, RnK DeVoe Farms of Monroe, grew DuPont Pioneer P31T77R and harvested 98.34 bu/a. In second place, Bahr Farms Inc. of Belmont grew Asgrow AG2535 and harvested 94.02 bu/a. Also in Division 4, the Wisconsin Bean Team of UW Graduate students Adam Gaspar and Steve Vosberg grew DuPont Pioneer P28T33R and harvested 104.80 bu/a. The WI Bean Team is ineligible for official prizes as they are grad students of Dr. Conley; however, their efforts are still unofficially recognized. In Division 3, David and Karen Wilkens of Random Lake won 1st place with NK S20-T6 Brand at 93.04 bu/a, and in 2nd place, Jim Salentine of Luxemburg harvested 83.76 bu/a with Steyer 1401L. In Division 2, Thad Sparby Farms of Arkdale achieved 72.87 bu/a from FS HiSOY HS 19A50 for first place. In 2nd place, Osterlohs Farms of Arkdale harvested 68.87 bu/a from FS HiSOY HS 23L50 soybeans. In Division 1 at 71.16 bu/a was David Lundgren from Amery who planted Croplan R2C1572. 2nd place winner in Division 1 was Dawn Lundgren from Amery. She harvested 68.40 bu/a from Croplan R2C1400. Thad Sparby Farms of Arkdale was also the winner of the Soybean Quality contest with 2,361 pounds of protein plus oil per acre.

The contest is sponsored by the WI Soybean Program and organized to encourage the development of new and innovative management practices and to show the importance of using sound cultural practices in WI soybean production.

UW-River Falls Field Scout Training Class

Bryan Jensen, UW Extension, IPM Program

The University of Wisconsin-River Falls, UW-Extension and the Integrated Pest Management Program are co-sponsoring the IPM Field Scout Training Class which will be held March 15-16, 2017 at the UW-River Falls campus. This training session will provide classroom and laboratory instruction for several pest and nutrient management topics (pest identification, life cycle, damage symptoms, economic thresholds and scouting techniques for insects, weeds, plant pathogens, herbicide injury and nutrient deficiency symptoms for corn, alfalfa, soybean and wheat, soil sampling, plant tissue testing, etc). Click here for the complete schedule. CEU’S will be applied for.

Non-student registration fee is $100/person and covers the cost of the training and the Field Crop Scout Training Manual. To register online please go to https://patstore.wisc.edu/ipm/register.aspx

To register by check, send name, phone number, address and email address with a check payable to UW-Extension to: Bryan Jensen Dept. of Entomology 1630 Linden Drive Madison, WI 53706.

For more information call Bryan Jensen at (608) 263-4073 or email at bmjense1@wisc.edu

UW-Madison/Extension Plant Disease Diagnostic Clinic (PDDC) Update

Brian Hudelson, Sean Toporek, Jake Kurczewski 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 January 14, 2016 through January 20, 2016.

**Plant/Sample Type, Disease/Disorder, Pathogen, County**

**Soil**
Soybean Soil, **Soybean Cyst Nematode, Heterodera glycines**, Richland

For additional information on plant diseases and their control, visit the PDDC website at [pddc.wisc.edu](http://pddc.wisc.edu).

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**UW-Madison/Extension Plant Disease Diagnostic Clinic (PDDC) Update**

Brian Hudelson, Sean Toporek, Jake Kurczewski 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 January 21, 2016 through January 27, 2016.

**Plant/Sample Type, Disease/Disorder, Pathogen, County**

**Soil**
Soybean Soil, **Soybean Cyst Nematode, Heterodera glycines**, Jefferson

For additional information on plant diseases and their control, visit the PDDC website at [pddc.wisc.edu](http://pddc.wisc.edu).

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**UW-Madison/Extension Plant Disease Diagnostic Clinic (PDDC) Update**

Brian Hudelson, Sean Toporek, Jake Kurczewski 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 January 28, 2016 through February 3, 2016.

**Plant/Sample Type, Disease/Disorder, Pathogen, County**

**Vegetable Crops**
Potato, Bacterial Soft Rot, *Pectobacterium carotovorum*, Barron

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**Soil**
Soybean Soil, **Soybean Cyst Nematode, Heterodera glycines**, Dane, Outagamie, Richland, Rock

For additional information on plant diseases and their control, visit the PDDC website at [pddc.wisc.edu](http://pddc.wisc.edu).
Recycle your Empty Pesticide Containers — For Free!

Steve Tomasko—UW Pesticide Applicator Training Program

Every year farms, coops, lawn care, structural pest control operators and other businesses purchase and empty millions of plastic containers containing pesticides. A large percentage of those empty containers end up in landfills. But there's a better option: most containers can be recycled into other useful products, and for many businesses, recycling won’t cost a dime.

The Ag Container Recycling Council (ACRC)—an industry funded not-for-profit organization—funds and administers used pesticide container recycling programs across the United States. In 2015, ACRC through its contractors collected and recycled over 10 million pounds of used pesticide containers.

What Can You Recycle? Farms and companies can recycle #2 rigid high density polyethylene (HDPE) containers up to 55 gallons in size that held products used in the following markets:

Crop Protection: Containers that held EPA-registered crop protection products labeled for agricultural uses. Adjuvant, crop oil and surfactant containers also eligible for recycling.

Specialty Pesticides and Fertilizers: Containers that held EPA-registered products labeled for professional structural pest control, animal health, turf, nursery, greenhouse, forestry, and aquatics are eligible for recycling.

Not Acceptable: Containers that originally held consumer products, or home and garden pesticides cannot be recycled through this program.

Rinse, Rinse, Rinse! You MUST rinse containers of all residues after use. Only dry, residue-free rinsed containers are accepted at collection sites.

Above: Pesticide containers are recycled in many products including the corrugated agricultural drain pipe above. Other approved products include highway sign posts, agricultural fence posts, underground utility conduit, industrial pallets and more.
lection sites. You must triple-rinse your containers or use a jet spray to make sure they are clean and residue-free. Why is rinsing important?

- It’s required by law.
- It gives you a return on your investment (you use all of the product in the container).
- Properly rinsed containers are classified as clean, solid waste.

How do you make sure your containers are properly rinsed? Read the product label and follow the procedures for rinsing containers (jugs and drums).

Where Do I Recycle my Containers?

The ACRC contracts out its recycling work to different contractors around the country. For the Midwest, that company is G. Phillips & Sons, LLC. You can schedule a pickup of your clean, empty containers by calling the company at 563-942-0391. They will pick up containers at both farms and other businesses.

G. Phillips & Sons company contact for Wisconsin, Stacey Bruinsma, says it’s best to call and find out if there is a collection site on the route scheduled. If not, they can set up a location for you to meet their truck somewhere. Note that there is a minimum pick up of 1,500 pounds for free pickup. If under this weight, there is usually a fee associated for the cost of trucking/labor to pick up material.

Recycling your used pesticide containers helps to keep millions of pounds of plastic from simply taking up space in a landfill and being turned into useful products. What’s not to like about that?

More Information:

Ag Container Recycling Council (ACRC): www.acrecycle.org


Phone # to schedule a pickup: 563-942-0391

G. Phillips & Sons contact for Wisconsin: Stacey Bruinsma, sbruinsma@gphillipsandsons.com

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Western Bean Cutworm Management

Bryan Jensen, UW Extension and IPM Program

Although this article may seem premature, the warm weather has gotten me thinking about those insects which could be favored by the abnormally high winter temperatures. Western bean cutworm (WBC) is one insect on that list. What also prompted this article is that several states in the Great Lakes Region and Ontario have reported high populations of WBC last year as well as WBC related performance issues with the Cry1F protein. Please consult the Handy Bt Trait Table authored by Michigan State University Extension Entomologist, Dr. Chris DiFonzo, for those trait families which incorporate the Cry1F protein.

WDATCP’s Wisconsin Pest Bulletin also reported a moderate increase in moths/trap last year after three consecutive years of low numbers. Equally important was their survey personnel indicated finding larval damage in both traited and non-traited corn. Although the incidence of larval damage seems to be lower in Wisconsin than the previously mentioned states it does make you wonder what will happen during the 2017 growing season, if anything.

To date, I have not heard of any western bean cutworm performance issues from those corn hybrids which incorporate the Vip3A protein (which also targets black cutworm, stalk borer, true armyworm but not European corn borer). However, it is still worth some effort to monitor those fields and error on the side of caution. For those fields without an above ground trait, which have a trait that does not target WBC and for those hybrids which include the Cry1F trait, field monitoring is highly suggested. Especially if you observed WBC damage in 2016. Plan to initiate scouting at approximately 1320 degree days (accumulated DD will be published in the Pest Survey Bulletin, subscribe). Please continue to watch future issues of the Wisconsin Pest Bulletin and Wisconsin Crop Manager for updates during the growing season. Please feel free to offer your comments and/or observations to me via email.
Diagnostics Through the UW-Madison/Extension Plant Disease Diagnostics Clinic

Brian Hudelson, University of Wisconsin-Madison/Extension Plant Disease Diagnostics Clinic

The UW-Madison/Extension Plant Disease Diagnostics Clinic (PDDC) provides unbiased, research-based plant disease identification and control recommendations for agricultural producers and businesses, horticultural producers and businesses, and homeowners throughout Wisconsin. If you suspect that you have a plant disease problem, you can submit a sample either through your county UW-Extension office (see http://www.uwex.edu/ for the location nearest you) or directly to the clinic (see https://pddc.wisc.edu/sample-collection-and-submission/ for collection details, submission details and forms). Fees for PDDC services (https://pddc.wisc.edu/services-fees/) are typically $20-25, although additional charges may apply depending on the sample type and tests requested.

Diseases of specific interest to field, forage, fruit, vegetable, and specialty crop producers for which the PDDC provides testing include (but are not limited to):

- Soybean cyst nematode (SCN) of soybean;
- Tar spot and Goss’ wilt of corn;
- Aphanomyces seedling blight/root rot (including race testing of soil) of alfalfa;
- Fire blight of apple and pear;
- Fruit rot and vine dieback of cranberry;
- Late blight of potato and tomato (testing provided free-of-charge as a public service);
- Black leg/tuber soft rot (Dickeya and Pectobacterium) of potato;
- Downy mildew of curcubits;
- Root rot (soil testing) of peas;
- Downy mildew and virus diseases of hop.

The PDDC partners with PJ Liesch at the UW-Madison/Extension Insect Diagnostic Lab (http://labs.russell.wisc.edu/insectlab/) who provides unbiased and research-based insect identifications and control recommendations (at no charge). The PDDC also partners with Ann MacGuidwin at the UW Nematode Diagnostic Lab (http://labs.russell.wisc.edu/uw-nematode-diagnostic-lab/) who provides a wide range of unbiased and research-based plant nematode testing (e.g., corn nematode testing) and control recommendations (for $35).

If you have questions about submitting a sample or clinic fees, or would just like to discuss disease issues that you are seeing, feel free to contact PDDC Director Brian Hudelson (https://pddc.wisc.edu/) at (608) 262-2863 or pddc@wisc.edu.

Videos: Grain Crops Management in Low-Margin Years

We have recorded a series of talks, “Grain Management in Low-Margin Years”, that address how to best handle different aspects of crop production during low-margin years. These were presented by UWEX state specialists last month throughout Wisconsin at meeting hosted by UW Agriculture and Natural Resources Extension agents.

You can watch a specific video, or view the full playlist on the UWIPM YouTube channel. There is a table of contents below each video on YouTube with quick links to jump to key parts in longer videos.

- Soybean Inputs that Deliver the Highest ROI in a Low-Margin Year – Shawn Conley, UW Agronomy, Soybean and Small Grains Specialist (40 min)
- Practical Weed Management for Low-Margin Years – Dan Smith, UW NPM, Southwest Regional Specialist (14 min)
- Fundamental Soil Fertility Strategies for Success – Carrie Laboski, UW Soil Science, Soil Fertility/Nutrient Management Specialist (37 min)
- How to Survive and Thrive on Current Corn Price Projections – Joe Lauer, UW Agronomy, Corn Specialist (41 min)
Low Grain Prices = Smart Disease Management Decisions  
– Damon Smith, UW Plant Pathology, Field Crops Pathology Specialist (29 min)

Managing Insects Economically Using Conventional Hybrids and Thresholds – Bryan Jensen, UW Entomology, Field Crops Entomology Specialist (38 min)

Machinery/Technology Management and Tillage Considerations to Reduce Operational Costs – Francisco Arriaga, UW Soil Science, Soil Science Specialist and Brian Luck, UW Biological System Engineering, Machinery Specialist (16 & 10 min)

Partial Budget Analysis: A Practical Tool for Low Margin Years – Paul Mitchell, UW Ag & Applied Econ, Cropping Systems Specialist (31 min)

Here is a summary publication that was handed out at the meetings. “A4137 – Grain Management Considerations in Low-Margin Years” available online for download.

UW-Madison/Extension Plant Disease Diagnostic Clinic (PDDC) Update

Brian Hudelson, Sean Toporek, Jake Kurczewski 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 February 18, 2016 through February 24, 2016.

**Plant/Sample Type, Disease/Disorder, Pathogen, County**

**Fruit Crops**

Apricot, Bacterial Canker, Pseudomonas syringae, Dane

For additional information on plant diseases and their control, visit the PDDC website at pddc.wisc.edu.
Now is a good time to get manure spreaders calibrated for determining manure nutrient credits

Kevin Shelley, UW NPM Program

With profit margins tight, this spring is a good time for manure spreader weighing and calibration on dairy and livestock farms. Determining the weight of an average load of manure is an important step in the process of determining valuable nutrient credits from a farm’s solid or semi-solid manure applications.

Accurate nutrient crediting depends on knowing both the application rate and the nutrient content of the manure. Knowing how much manure is being applied from each load helps determine the application rate part of the equation.

Farmers can get a load weight by weighing a “representative” load of the solid or semi-solid manure they have on the farm. This can always be done by driving a load to the nearest scale, such as at a grain elevator, feed mill or gravel pit. If there are no stationery scales nearby, portable weigh pad scales can be brought to the farm. Many county land and water conservation agencies or extension offices have scales, or have access to them through the University of Wisconsin Nutrient and Pest Management Program (NPM). Farmers or farm consultants can check with their County Cooperative Extension agricultural agent to see who in the county has scales.

Once the average load weight is known, manure application rates, in tons per-acre, can be calculated by keeping track of the number of loads spread on a field or area of known acreage. Knowing the application rate, together with the nutrient content of the manure, will allow calculation of the amount of N, P and K that can be credited toward crop needs as recommended by a soil test.

NPM has produced instructional videos on spreader calibration. The first video shows the step by step process of weighing the tractor and spreader, both full and empty, and doing field measurements.

https://www.youtube.com/watch?v=m9LAsOgVN-g

The second video is a short recorded presentation with further explanation of the calibration process.

https://www.youtube.com/watch?v=XQC8_y6xZwM

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**Factors to Consider While Assessing Your 2017 Winter Wheat Crop Stand and Spring Nitrogen Timing**

Shawn Conley, WI State Soybean and Wheat Extension Specialist

As we begin to contemplate spring and the 2017 winter wheat growing season, many growers and consultants alike are beginning to venture out and across their winter wheat fields to assess winter injury and nitrogen timings. Though it is a bit premature to make any rash decisions regarding crop destruction here are a few considerations for assessing your spring 2017 winter wheat stands.

As you look across your wheat landscape vibrant green patches will be interspersed with drab brown areas. The brown areas do not necessarily indicate those plants are dead.

**2017 Arlington Winter Wheat Variety Trial - Roadside Assessment**

**Planting Depth and Tiller Assessment**

Growers and consultants can either reassess in a week or pull plants from the field and place in warm environments. Milk houses and kitchens work perfect. Root regrowth will appear from the crown and will appear as vibrant white roots as shown below.

**Spring Root Regrowth in Winter Wheat**
If plants do not recover our critical threshold for turning over a field is 12 to 15 live plants per square foot. Below this threshold (< 12 plants per square foot) is an automatic replant decision.

In regards to N application timing for winter wheat that decision is pretty darn simple. Research from Dr. Carrie Laboski's program indicates that the optimal time to apply nitrogen to wheat in WI is green-up regardless of tiller count. For more detailed information check out her blog article here: Time your spring nitrogen applications to maximize winter wheat yield.

Also remember that wheat grain in itself is only part of the revenue you capture with winter wheat. The price of winter wheat straw remains strong and roughly 20% less acres of winter wheat were established last fall than the previous year (2015/16). Please consider that revenue stream before any replant decisions are made.

If you decide your wheat crop is not worth keeping (i.e. you can tell your neighbors your planted a planned cover crop last fall) please remember to terminate it a minimum of two weeks before you establish your next cash crop.

Click for more details on Cover Crop Do's and Don'ts

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Table 1. Yield, economic optimum N rate (EONR), and return to N when N was applied at green-up or GS30 at eight sites in Wisconsin in 2014 to 2016.

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† Previous crop: C = corn, Cs = corn silage, P = peas, S = Soybean.
‡ Economic optimum N rate (EONR) calculated using $ 6/bu and $0.30/lb N.
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Tips for Nitrogen Management in Winter Wheat

Carrie Laboski, Professor and Extension Soil Fertility/Nutrient Management Specialist

In general, apply N early.

At 50% of research sites in 2014 to 2016, N application at green-up out yielded application at Zadoks growth stage 30 (GS30, hollow stem – just prior to first node, approximately Feekes 5.5) by more than 5 bu/a (Table 1). Only at Lamartine in 2016, did N application at GS30 out yield application at green-up. Averaged over all site-years, there was a 6 bu/a yield advantage to applying N at green-up compared to at GS30. This yield advantage translated into a greater economic return when N was applied at green-up.

The amount of N needed to maximize profitability is the economic optimum N rate (EONR). Nitrogen application timing did not affect the EONR at 50% of the sites where the EONR at GS30 was within 3 lb N/a of the EONR at green-up (Table 1). At Chilton15 and Pipe15, there was no yield increase when N was applied at GS30, even though yield increased with N application at green-up. At Lamartine and Pipe in 2016, 41 and 16 lb/a more N, respectively, was needed to produce profitability yields when N was applied at green-up compared to GS30. This was a result of early season N loss due to wet soil conditions.

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# Tips for Nitrogen Management in Winter Wheat

Carrie Laboski, Professor and Extension Soil Fertility/Nutrient Management Specialist

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Topdress with urea.

At these same study sites, N source was evaluated at green-up and GS30 (Table 2). Application of urea at 30 lb N/a produced yields that were not significantly different than or were greater than ESN, a 50:50 blend of ESN and urea, or SuperU. Even at Lamartine and Pipe in 2016 where there was early season N loss, neither ESN or SuperU provided a yield benefit.

![Image of Lamartine field]

Lamartine at green-up on 3/22/16 (top) and on 4/26/16 (bottom). Differences in greenness on 4/26/16 are a result of some plots with and without N applied at green-up as well as early season N loss.

Acknowledgement: This research was funded by the Wisconsin Fertilizer Research Program.

<table>
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<tr>
<th>Location</th>
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<th>ESN</th>
<th>ESN:urea †</th>
<th>SuperU</th>
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<td></td>
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† ESN:urea was a 50:50 blend of ESN and urea.
‡ Within a row, means followed by different letters are significantly different at the 90% confidence level

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**UW-Madison/Extension Plant Disease Diagnostic Clinic (PDDC) Update**

Brian Hudelson, Sean Toporek, Jake Kurczewski 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 March 4, 2017 through March 10, 2017.

**Plant/Sample Type, Disease/Disorder, Pathogen, County**

**Fruit Crops**

Apple, Nectria Twig Blight, Tubercularia vulgaris, Oneida Apple, Thread Blight, Corticium stevensii, Vernon

**Vegetable Crops**

Potato, Edema, None, Dane Rosemary, Powdery Mildew, Oidium sp., Dane Spinach, Heterosporium Leaf Spot, Heterosporium sp., Bayfield

For additional information on plant diseases and their control, visit the PDDC website at pddc.wisc.edu.

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**Follow us**
2017 Field Crop Fungicide Efficacy Tables Now Posted

Damon Smith, Extension Field Crops Pathologist, Department of Plant Pathology, University of Wisconsin-Madison

The 2017 fungicide efficacy tables are now posted for foliar diseases of corn, soybeans, and small grains. New this year is an added efficacy table for fungicides effective against seedling diseases of soybean. You can access these tables by clicking directly on the links imbedded in this page or by clicking on the Fungicide Information tab above, and scrolling down the page to find the tables. The efficacy ratings are generated based on independent, University efficacy trial data from across the U.S. If you can’t find a particular product on the table, it is likely that it isn’t commonly used, or there isn’t enough data to confidently generate an efficacy rating. Remember to follow all label recommendations attached to the fungicide container. The label label is the law!

2017 Wisconsin Soybean Association Soybean Yield Contest

Shawn P. Conley, Soybean and Wheat Extension Specialist

Notable changes to the 2017 WSA Yield Contest:

- Entry fee decreased to $25 per entry
• Due date is extended to December 15th or 2 weeks post field harvest. Whichever comes first.
• Simplified entry form: Growers need only submit one form to enter the contest.
• Your harvest form is your entry form. This will allow growers to start harvest before making entry decisions.
• Entry/Harvest form changed to support a fillable PDF format.

Click here for the contest rules and entry/harvest form.

Stripe Rust Found to be Present and Already Active in Wisconsin Winter Wheat

Brian Mueller, Graduate Research Assistant, Department of Plant Pathology, University of Wisconsin-Madison
Damon Smith, Extension Field Crops Pathologist, Department of Plant Pathology, University of Wisconsin-Madison
Shawn Conley, Extension Soybean and Small Grains Agronomist, Department of Agronomy, University of Wisconsin-Madison

On March 29, 2017 the Field Crops Pathology Team observed the first signs of stripe rust in Wisconsin for the 2017 field season. Plots were located in the Wisconsin Winter Wheat variety trial in Sharon, Wisconsin. A sample was brought back to the Field Crops Pathology lab and placed on water agar to test for spore viability. The red arrow in figure 1 points toward a germ tube extending from the base of a urediniospore, indicating a viable spore. Very low levels of disease incidence and severity were detected in the plots scouted (Fig. 2 and 3). It is speculated that the pathogen that causes stripe rust overwintered on wheat leaves that remained green through the winter of 2016/2017. These same plots were scouted and confirmed to have active stripe rust infection this past fall (Fall 2016). However, application of fungicide was not recommended because stripe rust typically does not overwinter in the northern U.S. To our knowledge this is the first time that overwintering of the stripe rust fungus has been observed in Wisconsin winter wheat fields and is likely due to the mild winter season.

Stripe rust of wheat is caused by the fungus *Puccinia striiformis*. Stripe rust can be identified by orange/yellow pustules that typically occur in a striped pattern on the surface of the wheat leaf. However, under low severity, single, or very few sparsely spaced pustules may be observed. Subsequent infections can arise from a single pustule as seen in Figure 2. Disease is favored by prolonged periods of rain (or dew), high relative humidity, and cool temperatures ranging from 50 to 60 °F. For more information visit the [USDA Cereal Disease Lab](http://www.ceraldisease.net) website.

Figure 1. Urediniospores of the stripe rust fungus. Red arrow indicates a germinating, viable spore.

Figure 2. A single pustule of the stripe rust fungus on a wheat leaf.
Management of stripe rust includes using resistant cultivars and applying fungicides. Although it is too late to make decisions on a cultivar, scouting should be prioritized to fields where you know there was a susceptible cultivar planted. Considering the early start to the stripe rust epidemic, careful and frequent scouting will be critical this season. If stripe rust pustules are observed, consider sending samples to the University of Wisconsin Plant Disease Diagnostic Clinic for positive identification. If stripe rust is confirmed and it appears to be active, a fungicide application might be necessary.

While we typically don’t recommend an application of fungicide at the Feekes 5 growth stage, an application might be necessary this season if you find stripe rust in your wheat stand. This fungicide application could be tank-mixed with your last herbicide application. You should scout prior to this treatment, as it will only be necessary if active rust is observed. Products labeled for control of stripe rust can be found in publication A3646 – Pest Management in Wisconsin Field Crops. Many fungicides are labeled with excellent efficacy on stripe rust. So, find a product rated excellent, that also fits your pocketbook. Finally, remember to stick with labeled rates. Get out there and scout!

Wisconsin Soybean Marketing Board Announces Changes to the 2017 Free Nematode Testing Program

Shawn P. Conley, Soybean and Wheat Extension Specialist

Four out of every five animals on earth today is a nematode so it is not surprising that agricultural fields are home to many nematode species. Fortunately, most nematodes are beneficial to crop growth and soil health because their activities help decompose crop residues and cycle nitrogen and other nutrients. Pest nematodes do not threaten yield if their numbers remain low. The key to avoiding population explosions of nematode pests is to be proactive – know what the situation is and take appropriate measures when nematode numbers indicate a problem is brewing.

The WSMB sponsors free nematode testing to help producers stay ahead of the most important nematode pest of soybean, the soybean cyst nematode (SCN) (Figure 1). Eggs of SCN persist in the soil between soybean crops so a sample can be submitted any time that is convenient. The soil test report indicates the number of eggs in the sample and is useful for selecting the right variety for the next soybean crop. Retests of fields planted with SCN-resistant varieties over multiple years shows how the nematode population is responding to variety resistance and provides an early warning should the nematode population adapt to host genetics.

In 2017, the WSMB is again offering the expanded nematode testing program to include other pest nematodes in addition to SCN. These nematodes are less damaging

Above: Soybean Cyst Nematode Confirmed Counties as of 2016
to soybean than SCN but can cause enough yield loss to warrant treatment. As is the case for SCN, there are no rescue treatments for nematodes so the primary purpose of this year’s soil test is to plan for next year’s crop. Soil samples collected in corn for nematode analysis have predictive value for explaining yield if they are collected before the corn V6 growth stage. Sampling early in the season will provide information about the risk potential for the current corn crop AND the next soybean crop.

The assays used to recover nematode pests other than SCN in soil require that the nematodes are alive. So, it is important to keep the samples moist and at least room temperature cool. Collecting a sample that includes multiple cores ensures that there will be plenty of root pieces to assay. It is not necessary to include live plants in the sample. The soil test report will indicate which pest nematodes are present and at what quantities and their damage potential to soybean and corn based on the numbers recovered.

In 2017 the WSMB will use PestPros Inc. as the diagnostic lab for nematode quantification. Please discard all old kits and order now ones at the email address below.

Free soil sample test kits are available now and can be requested at (freescntest@mailplus.wisc.edu).

For more information on SCN testing and management practices to help reduce the losses from this pest, please contact: Shawn Conley: spconley@wisc.edu; 608-262-7975 or visit www.coolbean.info.

Seed applied fungicides and insecticides have become a common component in modern soybean production for their broad spectrum of activity and the implementation of earlier planting dates. Recent studies have shown farmers can maximize their economic return on investment by lowering seeding rates alone (De Bruin and Pedersen, 2008; Epler and Staggenborg, 2008) or in conjunction with a fungicide + insecticide seed treatment (Gaspar et al., 2015). However, it is unknown if a target specific seed treatment, like ILeVO (fluopyram, Bayer CropScience AG), can be profitable when added to these seed treatment packages, especially when farmers make seed treatment choices during the winter when upcoming diseases and/or insect problems are unclear.

Response of Broad Spectrum and Target Specific Seed Treatments and Seeding Rate on Soybean Seed Yield, Profitability and Economic Risk (Above)

Wisconsin Farm Technology Days Peterson Award

John Shutske, 608-890-2949, john.shutske@wisc.edu

It’s not often that people can have their picture taken with a ten foot tall goat or be able to pose in a pen with pigs and not get dirty, but it was possible for people who visited the University of Wisconsin Integrated Pest Management (IPM) and Nutrient Management Programs (NPM) booth at the 2016 Wisconsin Farm Technology Days.

Using an iPad and some creativity to run a photo booth where visitors could pose and interact with images of farm animals, IPM/NPM staff demonstrated the computer power that simple mobile devices have and explained how the University of Wisconsin-Extension uses digital technology to be flexible and relevant to the needs of farmers, including developing apps for farmers.
“UW-Extension doesn’t manufacture giant farm machinery,” said Roger Schmidt, UW-Extension computer specialist at UW-Madison, “But we do create research and foster community relationships that help farmers reap bountiful harvests, earn more money and allow people to eat the best food the earth can grow sustainably.”

The IPM and NPM exhibit, which provided information about free smartphone apps developed for agriculture by these two programs, received the 2016 Donald R. Peterson Technology Transfer Award. Individuals recognized for their efforts with this display were Roger Schmidt, UW-Extension computer specialist at UW-Madison and Mimi Broeske, UW-Madison senior editor.

NPM and IPM mobile apps include Wisconsin’s Corn N Rate Calculator, N Price Calculator, Crop Calculators for Corn, NPK Credits – Manure and Legume Nutrient Credit Calculator, Soybean Replant Calculator, and an IPM toolkit. The apps are available for both Apple and Android devices.

The award was presented at the annual Wisconsin Farm Technology Days Board of Directors meeting in April 2017.

The Donald R. Peterson Award recognizes outstanding educational effectiveness and impact via an interactive exhibit and activities at Wisconsin Farm Technology Days. To receive this award, groups must successfully engage audiences around topics such as: effectively using new management tools, processes, or concepts; incorporating new technologies into a modern farm operation; or issues that challenge contemporary agriculture and our natural resource base.

The Donald R. Peterson Wisconsin Farm Technology (Progress) Days Technology Transfer Award was established in honor of Don Peterson, UW-Madison College of Agriculture and Life Sciences (CALS) Professor and Associate Dean. Peterson was Chair of the Board of Directors from 1975-1993 and Executive Director of Wisconsin Farm Progress Days from 1993-1998.

The Award memorializes Peterson’s diligent efforts to encourage CALS faculty and staff to convey the fruits of College research and knowledge to the public through Wisconsin Farm Technology Days.

Wisconsin Farm Technology Days 2017

The Wisconsin Farm Technology Days is the largest agricultural show in Wisconsin and one of the largest in the nation. The three-day outdoor event showcases the latest improvements in production agriculture, including many practical applications of recent research findings and technological developments. Each year, it is held in a different Wisconsin county – on a different host family farm.

Kewaunee County is excited to be hosting the 2017 Farm Technology Days. Kewaunee has diverse agriculture which provides 2,058 jobs, about 20.7% of the county’s workforce and contributes $423.9 million in economic activity, more than 25% of the county’s total economic activity. The county has more than 176,735 acres, or 81%, used as farming ground. This includes cropland, rangeland, pasture, tree farms, and farm forests. Sales of Christmas trees, fruits and vegetables, greenhouse, nursery and floriculture add strong agriculture impact totaling $2.1 million per year. Leading the list of agriculture impact is milk at $190 million per year followed by grain at $33.95 million per year.

Agriculture in the county is extremely diverse, and in addition to dairy and grain, includes a wide range of livestock and horticultural crops. The direct marketing of vegetables, meat and poultry, cheese, and fruits is a rapidly growing segment of Kewaunee agriculture.

Where: Ebert Enterprises, E5083 County Road K, Algoma, WI 54201

When: July 11-13, 2017

Find more info by clicking here.
**Wisconsin Fruit News, Invasive Insects Supplemental Issue**

Janet van Zoeren, Christelle Guédot, and Amaya Atucha, University of Wisconsin – Madison, Departments of Entomology and Horticulture

[Click here for a supplemental issue on invasive insects of the Wisconsin Fruit News.](#)

In it you will find information about:

- Spotted wing drosophila: end-up-season update
- Brown marmorated stink bug: end-up-season update

All newsletters will also be posted onto at the Wisconsin Fruit website, available at [www.fruit.wisc.edu](http://www.fruit.wisc.edu). There you will also be able to search by category or tag, to find crops and/or subject material of interest to you on a particular day.

**UW-Madison/Extension Plant Disease Diagnostic Clinic (PDDC) Update**

Brian Hudelson, Sean Toporek, Jake Kurczewski 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 March 25, 2017 through March 31, 2017.

**Plant/Sample Type, Disease/Disorder, Pathogen, County**

**Vegetables**

For additional information on plant diseases and their control, visit the PDDC website at [pddc.wisc.edu](http://pddc.wisc.edu).

**Vegetable Crop Update January 14, 2017**

Amanda J. Gevens, Associate Professor & Extension Vegetable Plant Pathologist

2017’s 1st issue of the Vegetable Crop Update is now available. In this edition, please find information on:

- Information on spinach downy mildew, seen this fall/winter on spinach in season extension systems
- An updated agenda for the UWEX/VPVGA Grower Education Conference, Stevens Point, WI
- Info on the recently updated 2017 UWEX Commercial Vegetable Production guide for Wisconsin, the A3422 document. Please note that the guide **now includes information on hops**

It was very nice to see many of you at the Wisconsin Agri-Business Classic this past week in Madison. Thank you for all of those that supported and attended the meeting.

[Click here to view this update.](#)
Planting Date and Maturity Group Considerations Moving into a Potentially Early Spring 2017

Dr. Adam Gaspar and Dr. Shawn P. Conley

Early May planting in Wisconsin has been documented to increase yield due to increased light interception (Gaspar and Conley, 2015). Earlier planting dates are able to increase light interception in two ways, which are both demonstrated in Figure 1. First, the reproductive growth period between R1-R6 occurs during longer days with the May 1st (Green line) compared to June 1st (Orange line) planting date. Secondly, the time spent in the R1-R6 growth stages is increased with the earlier planting date. As Figure one shows, the May 1st planting date spent ~60 days from R1-R6 compared ~45 days for the June 1st planting date. Therefore, early planted soybeans experience both longer duration in reproductive growth (more days) and reproductive growth during the longest days of the summer.

Yet, in some instances (weather or logistical problems) planting can be delayed or replanting may be needed. Therefore, investigating the effect of different MG’s at multiple planting dates across the state would be useful. Thus, DuPont Pioneer and the Wisconsin Soybean Marketing Board funded a 3-year study to examine proper MG selection at 5 different planting dates across the state to maximize yield. So let’s look at the 2014-2016 data.

Trials were conducted at Arlington, Hancock, and Spooner, WI. The five planting dates at each location were planting roughly on: (1) May 1st, (2) May 20th, (3) June 1st, (4) June 10th, and (5) June 20th. Planting after June 20th is generally not recommended in WI. Two
varieties within each realistic MG from a 2.5 all the way down to a 00.5 were tested depending upon the location and planting date and are displayed in Table 1.

We will start with the easy and redundant part, get your soybeans in the ground ASAP to maximize yield. This is very evident again in this trial as shown in Figure 2 and 3. If the soil is fit, soil temps are near 50˚F, and the forecast is favorable…. get that soybean planter rolling! As you would expect we found some very interesting synergies between early planting and longer MG’s. Figure 2 contains MG 1.5 soybeans which at the May 1st planting date only achieved ~85% of max yield. Figure 3 contains the longest maturing soybean varieties (>1.5) for each location where soybeans reached 99% of max yield, with May 1st planting. Furthermore, as planting is delayed, the earlier MG bean’s (Figure 2) do not show a quick and dramatic yield decline compared to the later maturing beans (Figure 3). Therefore, those that may have not experienced yield loss from delayed planting are likely planting varieties from a MG too short for their respective area. Clear yield synergies are demonstrated in Figure 2 and 3 from planting early and using a longer MG soybean variety. Both management practices add no additional cost, meaning any yield increase is direct profit.

Table 2 agrees with the conclusion from Figures 2 and 3, that early planting and longer maturity groups maximize yield. However, due to no significant MG effect at the Spooner location, the synergy of early planting and longer MG’s, may not be as consistent in Northern WI where the growing season is condensed. Planting date 5 at Arlington and Hancock was not significant for MG effects, but the longest MG planted there still yielded the highest numerically. This was also the case at Spooner, but the 0.5 MG significantly out yielded the 0.0 and ultra-early 00.5 MG varieties.

These results suggest planting a portion of your acres to slightly longer MG than normal within May can result in greater yields with no additional dollars spent. In addition, when planting is delayed into June, switching to a variety much more than 0.5 MG earlier than a full season variety (2.5 MG) may limit yield potential. However, if

**Table 1.** Maturity Group’s tested within each location and planting date.

<table>
<thead>
<tr>
<th>Planting Date</th>
<th>Arlington</th>
<th>Hancock</th>
<th>Spooner</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (May 1&lt;sup&gt;st&lt;/sup&gt;)</td>
<td>2.5, 2.0, 1.5</td>
<td>2.5, 2.0, 1.5</td>
<td>1.5, 1.0, 0.5</td>
</tr>
<tr>
<td>2 (May 20&lt;sup&gt;th&lt;/sup&gt;)</td>
<td>2.5, 2.0, 1.5</td>
<td>2.5, 2.0, 1.5</td>
<td>1.5, 1.0, 0.5</td>
</tr>
<tr>
<td>3 (June 1&lt;sup&gt;st&lt;/sup&gt;)</td>
<td>2.0, 1.5, 1.0</td>
<td>2.0, 1.5, 1.0</td>
<td>1.0, 0.5, 0.0</td>
</tr>
<tr>
<td>4 (June 10&lt;sup&gt;th&lt;/sup&gt;)</td>
<td>2.0, 1.5, 1.0</td>
<td>2.0, 1.5, 1.0</td>
<td>1.0, 0.5, 0.0</td>
</tr>
<tr>
<td>5 (June 20&lt;sup&gt;th&lt;/sup&gt;)</td>
<td>1.5, 1.0, 0.5</td>
<td>1.5, 1.0, 0.5</td>
<td>0.5, 0.0, 0.0</td>
</tr>
</tbody>
</table>

**Figure 2.** Yield of planting date from May 1st (120) into June of 1.5MG soybean varieties.

**Figure 3.** Yield of planting date from May 1st (120) into June for longest maturing soybean varieties at each location.

**Table 2.** Effect of Maturity Group on Yield tested within each location and planting date, during 2014, 2015, and 2016

<table>
<thead>
<tr>
<th>Planting Date</th>
<th>Arlington</th>
<th>Hancock</th>
<th>Spooner</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (May 1&lt;sup&gt;st&lt;/sup&gt;)</td>
<td>2.5</td>
<td>3.5</td>
<td>1.5</td>
</tr>
<tr>
<td>2 (May 20&lt;sup&gt;th&lt;/sup&gt;)</td>
<td>2.5</td>
<td>3.5</td>
<td>1.5</td>
</tr>
<tr>
<td>3 (May 30&lt;sup&gt;th&lt;/sup&gt;)</td>
<td>2.0</td>
<td>3.0</td>
<td>1.0</td>
</tr>
<tr>
<td>4 (June 10&lt;sup&gt;th&lt;/sup&gt;)</td>
<td>2.0</td>
<td>3.0</td>
<td>0.5</td>
</tr>
<tr>
<td>5 (June 20&lt;sup&gt;th&lt;/sup&gt;)</td>
<td>1.5</td>
<td>1.5</td>
<td>0.5</td>
</tr>
</tbody>
</table>

The numerically highest yielding MG for each planting date and location. MG that are bold and colored red were significantly higher at the P < 0.10
planting is delayed until mid to late June or more likely replanting is needed, a variety that is at least a full MG earlier should be considered to avoid fall frost damage.

In conclusion, early planting is critical for higher yields through increased light interception, and can be further maximized by planting longer MG's. However, variety selection heavily based upon the MG is not the “silver bullet” for increasing yields. Yet, it does provide a strong “potential” for higher yields with no additional dollars spent, especially in early planting situations. Therefore, growers should give consideration to MG when selecting varieties, but past local and regional performance, disease package, scn-resistance, etc. should also strongly be considered.

References:

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**Bulk Ordering Pest Management in Wisconsin Field Crops (A3646)**

Bryan Jensen, IPM Program and UW Extension


Pest Management in Wisconsin Field Crops is updated annually and contains both general and specific pest management recommendations for corn, soybean, forages, small grains and stored grain. Including rates, remarks and performance data for pesticides.

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**Hay Desiccants and Preservatives**

Dan Undersander, UW-Extension Forage Agronomist

Hay preservatives can reduce the spoilage and heating losses from hay baled wetter than optimum.

First, it is important to recognize that two totally different types of products with different modes of action are sold: one is a desiccant which is a compound applied to the hay at cutting to increase drying rate and the other is a preservative which is applied to hay as it is baled to allow baling of wetter than normal hay without spoilage during storage. Both products are usually applied through a spray system, either on the mower (for desiccants) or on the harvesting equipment (for preservatives).

Potassium or sodium carbonate are effective desiccant's. These compounds disturb the waxy cuticle of the alfalfa stem to allow it to dry faster. Desiccants work only on legumes such as alfalfa, trefoil, and clovers, not on grasses. Effectiveness varies with climatic conditions. Desiccants reduce drying time most when drying conditions are good. Thus, they tend to work better on second and third cuttings in Wisconsin. They are seldom used due to the large volume of water that must be applied along with the desiccant.

Preservatives are applied to the hay as it is harvested to prevent heating and spoilage of hay baled at higher than 14 to 18% moisture content. Preservatives are cost effective if used only when needed to prevent rain damage to hay and if applied uniformly to windrow as it is entering the baler. The most effective preservatives for alfalfa are organic acids, primarily propionate (propionic acid) and acetate (acetic acid).

Any preservative containing a high percentage propionate (propionic acid) will be effective. Use of ammonium propionate (also called buffered propionic acid) rather than propionic acid is recommended because the product is less caustic – therefore safer to handle and less corrosive to machinery. When purchasing preservatives, compare cost on a per pound of propionic acid basis. Other additives do little if anything to preserve hay. Hay preservative products that dilute the propionic acid require greater product use rates.

Rates of propionic acid required to preserve hay vary with the moisture content of the hay. As indicated in Figure 1, the amount of propionic acid required varies from 8 lb/dm ton for hay with less than 18% moisture to 20 lb/dm ton for hay with over 25% moisture. Note that rates are for pounds of propionate not product. Therefore, a product with 50% propionate would need to be applied at twice the above rates.

Acetic acid is about half as effective as a preservative and therefore requires twice as much product for equal preservation.

Use of preservatives for hay above 35% moisture is not recommended.

Anhydrous ammonia is an effective preservative for grasses. It can be injected into bales or released into a
stack of bales covered and tightly sealed with plastic. Ammonia should be applied at the rate of 20-40 lbs/ton with higher rates used for hay near 35% moisture and lower rates used when moisture is near 20%. Anhydrous ammonia should not be used as a preservative on alfalfa because the additional nitrogen is of little benefit to animals and toxic chemicals can form in the hay.

No microbial hay preservatives have been shown to be effective in preserving hay.

Preservatives should not be necessary when making baleage (plastic wrapped bales) since the oxygen is necessary for mold growth and the plastic should prevent oxygen from entering the bale.

For more information from Team Forage, click here.

Cutting Alfalfa Very Frequently

Dan Undersander, UW-Extension Forage Agronomist

There has been some interest in cutting alfalfa frequently to get very low fiber for dairy rations. We had a study in 2000 and 2001 where we compared 20 alfalfa varieties with and without wheel traffic. We cut at 21-day and at 35-day intervals. The yield data averaged across the varieties is presented in the table below. In the seeding year, we saw 33 to 51% yield reductions and, in the first production year, about 50% yield reductions.

The study was not continued beyond the first production year because the 21-day alfalfa varieties with 21-day cutting interval died out the next winter while the same varieties with 35-day cutting intervals came through the winter in good shape.

There did not appear to be any significant differences among the varieties in tolerance of the more frequent cutting.

Thus, as farmers are thinking of the shorter cutting intervals to reduce fiber content of the forage, we should keep the 50% yield reductions and expected shorter stand life in mind. It is difficult to believe that the economics of this practice will be beneficial to the farmer.

For more information from Team Forage, click here.

Table 1. Effect of Cutting Frequency on Alfalfa Yield, Arlington, WI

<table>
<thead>
<tr>
<th>Management</th>
<th>Seeding Year 21-day cutting interval</th>
<th>35-day cutting interval</th>
<th>First Production Year 21-day cutting interval</th>
<th>35-day cutting interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>No traffic</td>
<td>2.9</td>
<td>4.3</td>
<td>3.9</td>
<td>7.3</td>
</tr>
<tr>
<td>Reduction (21 vs. 35 days)</td>
<td>33%</td>
<td></td>
<td>47%</td>
<td></td>
</tr>
<tr>
<td>With wheel traffic</td>
<td>1.8</td>
<td>3.7</td>
<td>3.2</td>
<td>6.6</td>
</tr>
<tr>
<td>Reduction (21 vs. 35 days)</td>
<td>51%</td>
<td></td>
<td>52%</td>
<td></td>
</tr>
</tbody>
</table>
The Seed Variety Database is Now Live

Badgerbean is proud to introduce a grower-generated database that will allow you to look up seed varieties with identical genetics.

We designed this tool for farmers across the country to help each other find the Seed Varieties they need, when they need them, at the best possible price.

Please take a few moments to locate the Variety Lookup tab at the bottom of the badgerbean homepage. Just enter your Seed Variety ID to check if it is already part of the database. If it is, you’re done.

If your Seed Variety ID is not yet in the database, please add the information requested—by Variety ID, Company and Brand. Your submissions to the database are—and will remain—anonymous.

The database will identify seeds with identical genetics by Variety ID, regardless of the company or brand name. This means you may find favorable differences in price among companies and brand names. You may also be able to locate a seed variety you like that a distributor you use no longer carries.

The More Farmers Who Fill the Database, the Better.

This tool benefits all farmers and should reduce the confusion among seed companies and brand names. It will also help farmers know for sure they are diversifying genetics across their farm.

As with anything new, there are two important disclaimers to keep in mind.

First: Two genetically similar varieties may not perform the same side by side in the field due to differences in environmental conditions and management practices among seed production fields. How the seed is handled and processed between the time of harvesting in the seed increase field and planting in a grower’s field also influences overall seed quality, which in turn can affect the performance of two varieties that genetically are the same.

Second: This information in this database is added by farmers like you and collected at random. This means not all varieties that are the same as other varieties may be listed. What’s more, some varieties listed may no longer be sold commercially.

Wisconsin Fruit News, Issue 1

Janet van Zoeren, Christelle Guédot, and Amaya Atucha, University of Wisconsin – Madison, Departments of Entomology and Horticulture

Click here for the first issue of Volume 2’s Wisconsin Fruit News.

In it you will find information about:

- Insecticide Update
- Plant Disease Diagnostic Clinic update
- Insect Diagnostic Lab update
- Pest alert: Blueberry maggot
- Cranberry degree-day map and update
- Brown marmorated stink bugs and grapes
- Sudden Apple Decline — learn all about it
- Planting and caring for your new apple tree
- San Jose scale
- Apple thread blight

All newsletters will also be posted onto at the Wisconsin Fruit website, available at www.fruit.wisc.edu. There you will also be able to search by category or tag, to find crops and/or subject material of interest to you on a particular day.

UW-Madison/Extension Plant Disease Diagnostic Clinic (PDDC) Update

Brian Hudelson, Sean Toporek, Jake Kurczewski 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 April 8, 2017 through April 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>Vegetable Crops</td>
<td>Potato, Bacterial Soft Rot</td>
<td><em>Clostridium sp.</em></td>
<td>Adams, Portage</td>
</tr>
</tbody>
</table>

WCM-32
Potato, Black Heart, None, Adams, Portage
Potato, Dry Rot, *Fusarium sp.*, Adams
Potato, Hollow Heart, None, Adams

For additional information on plant diseases and their control, visit the PDDC website at pddc.wisc.edu.

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**What’s Standing Alfalfa Worth in 2017?**

Greg Blonde, UW-Extension Agriculture Agent

One of the challenges in coming up with a value for standing hay is the lack of established market price information like corn and soybeans. Another challenge is multiple cuttings of hay versus a single harvest for grains. So it’s no wonder the price for standing hay can vary greatly between farms, even between fields. Here’s one approach for pricing standing hay in 2017.

Assuming four ton dry matter (DM)/acre for the entire year of dairy quality alfalfa hay worth $100 to $150/ton baled ($0.06 to $0.09/lb DM), half the value is credited to the owner for input costs (land, taxes, seed, chemical and fertilizer), and half the value is credited to the buyer for harvesting, field loss and weather risk. Obviously, estimated yield is an important factor when negotiating price. This formula will help determine pre-season maximum alfalfa dry matter yield potential…(.10 x stems/ft²) + .38. Actual yield will likely be lower due environmental conditions and individual harvest / management practices. Wait until stems are at least 4-6 inches tall and count only stems upright enough to be cut by the mower.

Using yield distribution based on recent multi-year UW-Extension field research in NE WI for a three cut (43% / 31% / 26%) or four cut (36% / 25% / 21% / 18%) harvest system, the following price range (rounded to the nearest $5) may offer a starting point for buyers and sellers to negotiate a sale of good to premium quality standing alfalfa in 2017:

**3 cuts**

- 1st crop: $100-155
- 2nd crop: $ 70-110
- 3rd crop: $ 60- 95

In this example, the standing value for the entire alfalfa field could range from $230 to $360/acre for the entire growing season. Keep in mind ownership costs can run $300- 400/acre when the seller considers lost rent, establishment costs and top-dress fertilizer to maintain soil fertility. That’s why the same price is not always the right price for everyone. Ultimately, a fair price is whatever a willing seller and an able buyer can agree to.

To help farmers and landowners better evaluate their pricing options, Greg Blonde, UWExtension Agriculture Agent developed a mobile app for pricing standing hay. With more than 1500 downloads and 600 users across the country, the app provides quick access to baled hay market prices for reference calculations, with value per acre by cutting displayed using annual yield and harvest cost projections. The Android app is free to download at the Google Play store (search for Hay Pricing) or by going to:


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Wisconsin Winter Wheat Disease Update – April 21, 2017

Brian Mueller, Graduate Research Assistant, Department of Plant Pathology, University of Wisconsin-Madison
Damon Smith, Extension Field Crops Pathologist, Department of Plant Pathology, University of Wisconsin-Madison

The Wisconsin Field Crops Pathology crew has continued to scout wheat in various locations around the state of Wisconsin. Wheat in the southern part of the state is near or at jointing. Wheat in the central zone is also near jointing.

We have now confirmed stripe rust in a production winter wheat field near Arlington Wisconsin (April 20, 2017). The variety is Pro Seed 420 which is known to be susceptible to stripe rust. We suspect that stripe rust has overwintered in this location, in addition to the Sharon Wisconsin location that we reported several weeks ago.

We have also received a report of stripe rust from Kenosha Co.

In all cases where stripe rust has been found, it is at low incidence and severity. However, the weather is becoming conducive for the stripe rust pathogen, so these areas of active rust should be monitored closely so that an informed management decision can be made. Many are considering a tank-mix of fungicide with their herbicide application. However, be aware that this application will only be effective for 2-3 weeks at most. We have found that when it comes to application of fungicide for stripe rust control, applications that coincide with the introduction of stripe rust that also protect the flag leaf, are most beneficial on winter wheat in Wisconsin. This has been investigated and reported by our laboratory and presented at the Wisconsin Agribusiness Classics. You can find that report here.

At this point in the season, growers and consultants should continue to scout carefully for stripe rust. Also, consider the susceptibility rating of your wheat varieties. In fields where stripe rust is active and you have a susceptible variety, careful monitoring will be required and earlier spraying necessary. In fields with no confirmed rust and resistant varieties, continued monitoring of the situation will be necessary. Fungicide

Above: Two Small Stripe rust pustules on a winter wheat leaf.
application should be saved until as close to flag leaf emergence as you feel comfortable waiting. You can find efficacy ratings of various fungicide products against stripe rust here.

Get out and scout, scout scout!!

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**Consider cover crop plans for summer and fall when selecting crop herbicides this spring**

Kevin Shelley and Dan Smith, UWEX Nutrient and Pest Management Program

If a cover crop will be planted later this cropping season, consider the rotational restrictions for any herbicides used in the field this spring, or the past few seasons. This is especially important if the cover crop might be used as a forage crop. A crop is classified as a cover crop when no biomass is harvested. A cover crop becomes a forage crop when its biomass is harvested for feed.

As part of its EPA registration, each herbicide product’s label provides directions for use on labeled (allowed) crops. It will also provide information on crop rotation intervals. A crop rotation interval is the amount of time required after application of the herbicide product before another (non-labeled) crop can be legally planted. The rotation interval is established for two reasons: To ensure that herbicide residues in the soil will not affect establishment of the following crop, and; To ensure the safety of a subsequent feed or food crop from accumulating herbicide compounds at unsafe levels in plant tissues.

Most corn, soybean and cereal grain herbicides do not have rotational intervals for non-harvested cover crops. If the crop to be used as a cover crop has a rotational interval listed on the herbicide’s label, this interval provides a guide as to the likelihood of successful establishment. But, if not intended for harvest, the time interval is not a legal requirement. If a farmer’s or agronomist’s experience suggests the cover crop will grow, or if the farmer is willing to assume the risk, a decision to plant prior to the expiration of the interval may be made. If, however, the cover crop is used as a forage, the rotation interval becomes a legal requirement for feed and food safety. If the specific crop is not listed on the herbicide label as an allowed crop, nor is among those with established rotation intervals, the maximum rotation interval must be used when planting for forage.

Many dairy farms in Wisconsin are planting a winter cereal grain, such as rye or triticale, following harvest of corn as silage. If planted early enough in the fall, this overwintering “cover crop” helps prevent soil erosion and nutrient losses from runoff and leaching on corn silage fields. Winter rye or triticale also provides the option of harvesting as a forage crop the following spring, usually about the third to fourth week in May in most of WI.

A farmer has multiple herbicide options for silage corn weed control, however their rotational interval restrictions are drastically different. For example, the label for one popular pre-emergence corn herbicide, in the rotational crops section, states that barley, oats, rye or wheat may be planted 4 1/2 months after application. Therefore, if planning to plant rye after corn silage by September 25, an application of this herbicide would need to be made by May 13. It also states, “for all crops not listed, wait at least 12 months following the last application.” Triticale is not specifically listed. So, if this herbicide was used for this year’s corn silage crop, triticale planted this fall could not, technically, be used as forage crop next spring. Other corn herbicides have rotation intervals ranging from 0 to 18 months for cereal grain crops (grain or forage) and up to 26 months for other species.

Similarly, most herbicides labeled for use in wheat or other small grains will have rotation interval restrictions ranging from 0 to 18 months for crops that might be planted for forage (harvested or grazed) following small grain harvest. For current year information on rotation interval requirements for specific herbicides, consult the product’s EPA registered label. A good source for specimen pesticide product labels is the Crop Data Management System’s website at [http://www.cdms.net/Label-Database](http://www.cdms.net/Label-Database).

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**Options for Alfalfa Removal in Spring**

Mark Renz Extension Weed Scientist, University of Wisconsin-Madison

While removal of old stands is recommended with fall applications, many fields are now slated for removal due to winter-kill and changes in cropping plans for the field. This can be challenging, but options exist. Below I discuss management options for common scenarios this spring. If using herbicides, remember to read the label of the products used, as plant-back restrictions can vary between products.

**SPRING REMOVAL AS ALFALFA GREENS-UP**

Alfalfa can be removed with herbicides and/or aggressive tillage. While tillage can result in > 80% mortality,
tillage implement, operation of equipment as well and environmental conditions can dramatically affect control. Spraying an herbicide prior to tillage is usually conducted as this combination greatly improves chances of alfalfa mortality. For no-till fields, spring herbicide application can provide good to great removal depending on the year. In years with little regrowth and stressed plants alfalfa plants often resprout and require control in the planted crop. Most labels recommend at least four inches of regrowth to maximize control. While many herbicides are available to remove alfalfa, the most popular active ingredients include glyphosate, 2,4-D, and/or dicamba. While glyphosate has no plant-back restrictions for other crops, 2,4-D and dicamba do. The restriction varies depending on the crop, rate, and product so read the label carefully. In a typical year the restriction for 2,4-D (7-14 days for corn) and dicamba (0-30 days for corn) can be met easily prior to planting corn.

SPRING REMOVAL DURING/AFTER ALFALFA HARVEST

Producers are sometimes interested in harvesting the first crop of alfalfa before terminating the stand. The best option for this scenario is to apply glyphosate 36 hours or longer before harvesting. Up to 1.5 lbs ae/A is registered for this type of application. This will allow for hay harvest, and improve effectiveness of removal due to the delayed application timing and larger sized alfalfa. I am not aware of any other herbicides that can be used in this fashion. Another option would be to harvest the hay, let the alfalfa regrow then apply an herbicide to eliminate the stand. This option, while effective would result in at least 2 weeks of additional time before planting to allow harvest and regrowth. Plant-back restrictions would then also need to be followed for the products selected.

CONTROL OF VOLUNTEER ALFALFA IN OTHER CROPS

While the goal is to kill plants with the removal treatments, some alfalfa plants can survive and will need to be managed in the following crop, especially in spring removal. For Roundup-Ready crops, glyphosate is the logical choice and is effective, unless removing Roundup-Ready alfalfa. Other products that are effective in corn include products that contain dicamba or clopyralid. I am not aware of effective non-glyphosate options in soybeans. Make applications in a timely fashion, as I expect significant yield loss could be seen from volunteer alfalfa in fields.

Videos: Spring time disease scouting for alfalfa and winter wheat

Here are links to two short videos from Damon Smith, Extension Field Crops Pathologist, Department of Plant Pathology, University of Wisconsin-Madison.

Damon Smith also has a website here >>> http://fyi.uwex.edu/fieldcroppathology/
Variable Rate Seeding
Prescription Maps for Soybean

Shawn P. Conley, Soybean and Wheat Extension Specialist

Looks like many of us will be sitting around for the next 7 to 10 days twiddling our thumbs watching it rain. If you get bored and look to try writing a few variable rate seeding prescription maps for soybean check out http://www.coolbean.info or click our publication entitled: What data layers are important for variable rate soybean seeding prescriptions? to get a few ideas.

UW-Madison/Extension Plant Disease Diagnostic Clinic (PDDC) Update

Brian Hudelson, Sean Toporek, Jake Kurczewski 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 April 15, 2017 through April 21, 2017.

Plant/Sample Type, Disease/Disorder, Pathogen, County

Fruit Crops
Cherry ('Montmorency'), White Rot, Irpex lacteus, Sauk

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.
Insect Prospective

Bryan Jensen, UW Extension and IPM Program

Insects (and their relatives) are probably not the first thing on people's mind right now. However, getting the crop planted probably is. Soon thoughts will turn to pest management. Although too early to tell what will happen, it never hurts to think ahead and prepare for what could be.

I don't think I'm going too far out on a limb to suggest this might be a year with significant slug damage in corn and soybean. The weather we have been experiencing (and had last fall) certainly suggests early season scouting for slugs will be important. As usual, fields which had high slug populations in 2016, are no-tilled, have high amounts of residue or are unusually wet would be first on my list to scout. Fields that are following a small grain and/or cover crop would also be good candidates. Several of our cultural management strategies have been already been made (primary tillage, rotation) or may not be feasible (early planting). If you had fields with high slug activity in 2016, consider planting corn rather than soybean if that option is available as would be increasing the amount of secondary tillage if practical. In season management will be difficult and expensive so any preventative management you do will help significantly. Using slug baits as rescue treatments will have questionable results as a stand-alone treatment especially if slug damage is heavy. Cost effectiveness will certainly be an issue but so is the possibility of stand loss. Read labels carefully! The baits using the active ingredient metaldehyde are NOT labeled for soybeans grown in Wisconsin. A quick, if not hasty read of the label, may indicate otherwise. However, a footnote indicates that Wisconsin is not on the list of approved states for use.

DATCP’s survey personnel have indicated very high black cutworm moth counts in their pheromone traps and
Krista Hamilton has indicated these counts are ahead of last year’s numbers. Remember those nice spring days and warm southerly winds we had several weeks ago? Well, the downside is they brought some hitch hikers along. High trap counts are not always a good predictor of field damage. However, they do give us fair warning that the potential is there. Concentrating scouting efforts on high risk fields would be my suggestion. Those fields would be corn planted into soybean residue, fields with dense broadleaf weed populations and perhaps low areas along stream banks, etc. The outlook looks good for corn planting in the near future. However, late planted fields will also be at risk of black cutworm damage for a longer period of time.

True armyworm catches have been low according to WI Pest Bulletin. Other states have reported locally heavy adult flights. Crop stage and arrival of armyworms is not as critical as it is with black cutworm. Therefore, the threat from this migrating generation of armyworm can last longer into the spring than for black cutworms. Experience tell us that early season damage is often more localized than the summer generation and damage is often very dependent on oviposition preference. These preferences include corn planted after grassy cover crops including cereal rye and corn planted into fields with an abundance of grassy weeds. Although not a grass, corn no-tilled into alfalfa can also be very attractive. Include wheat fields in your scouting efforts as well. Focusing efforts on these high risk fields is not fool proof, but if you have limited time, these hints can be helpful.

Alfalfa weevil damage potential is difficult to predict. Fortunately, degree days can predict egg hatch and I would guess that will start soon in the southwest part of the state as well as in the warmer sandysoils on south facing slopes along the Mississippi River. Early symptoms of alfalfa weevil feeding are small pin-hole sized holes in the upper leaves. Although extensive damage is not usually expected until larvae reach the 3-4th instars early scouting will give you a heads-up and time to prepare.

Cover Crops Becoming Your Next Weed?

Daniel H. Smith, Mimi Broeske, and Kevin Shelley- Nutrient and Pest Management Program, University of Wisconsin-Madison

Spring fieldwork has been a challenge so far and termination of cover crops can be a challenge under less than ideal conditions. A recent publication from the Nutrient and Pest Management program details termination techniques, herbicide considerations, herbicides and weather, cover crop vs. forage crop concerns, and finally termination and crop insurance. Follow the link below to read the full article detailing the termination recommendations.

http://ipcm.wisc.edu/download/misc/2017_CoverCropsTermination.pdf

In addition, a recent video from the Nutrient and Pest Management program details how to prevent cover crops from becoming problematic weeds. Click on the video to watch the termination recommendations.

Finally, termination of winter rye and annual ryegrass using glyphosate can be a challenge. If glyphosate is going to be used for winter rye termination in a forage system, application should always take place following harvest for a legal herbicide application. Even though little biomass is left after harvest, a recent study found termination of the winter rye and annual ryegrass following forage harvest was possible. Follow the link below to read the full article detailing the study with termination recommendations.


Corn Planting Date Concerns for 2017

Dr. Joe Lauer, UW-Madison Agronomy and UWEX state corn specialist

The recent cool, wet weather has some farmers concerned about corn planting. We are currently in the optimum range for the corn planting date response. Soon we will be on the downhill side of this response where grain yield decreases AND grain moisture increases. However, there can be quite a bit of variability associated with this response.
Harvest of rye as forage in mid to late May, in southern Wisconsin, generally allows subsequent planting of a full season crop such as corn, soybeans or alfalfa seeding. The video linked below provides an introduction to the practice of fall planting winter cereal rye as a conservation cover crop following harvest of corn silage to help prevent soil erosion and nutrient runoff. The three minute video focuses on using the rye as an early season forage crop the following spring. Determination of “boot stage,” the development stage of rye where forage yield and quality are optimized, is demonstrated.

**Weed Identification, 2017 Series, Common Chickweed**

Mark Renz UW Madison Associate Professor and Extension Specialist (mrenz@wisc.edu), Chelsea Zegler UW Madison Associate Research Specialist (zegler@wisc.edu)

**Introducing a new Weed ID series of factsheets**

With everyone gearing up for the field season we thought it would be good to periodically review identification for some of Wisconsin’s common and not so common weed species. While identification isn’t always fun, it is a critical component to management and it is widely thought that our ability to identify weeds has declined over the past several decades.

Therefore we are creating a weed identification series to improve this skill. This series will review key characteristics, including images, of relevant weeds that are currently emerging in Wisconsin. Feel free to use this to help you or your staff with weed identification. We have formatted this so it is easily posted in a breakroom or emailed to colleagues. You could even use it to test your staff during meetings (just don’t tell them it was my idea)!

Below is the first of what we hope are ten installments. Expect a new weed factsheet every 1-2 weeks. We will post notices in the crop manager and have downloads on the IPCM website, as they become available. If you have suggestions on weed species to include don’t hesitate to contact either of us.

**WEED IDENTIFICATION SERIES PLANT #1**

Common Chickweed

We decided to start the series with this species as populations have been expanding over the past 3 years in numerous fields throughout Wisconsin. We attribute this to two factors...
The last two falls have been significantly warmer and longer than average. This has allowed for fall germination and survival of this winter annual (as well as other winter annuals species).

This plant also has the ability to act as a summer annual if enough spring/summer precipitation occurs before the canopy of the crop closes. Many parts of Wisconsin have met these criteria over the past several years as we have witnessed the expansion of this plant in many environments (agriculture, horticultural, natural areas) throughout southern Wisconsin.

Enjoy this first species and be looking for a new species every 1-2 weeks.

CLICK HERE TO DOWNLOAD PDF OF COMMON CHICKWEED IDENTIFICATION FACTSHEET

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**Soybean Management Strategies to Facilitate Timely Winter Wheat Establishment in 2017**

Dr. Adam Gaspar and Dr. Shawn P. Conley

Winter wheat acres across WI have declined over the past few years due to late grain harvests, disease concerns (FHB or scab) and poor wheat prices, however anyone that lives and works in WI knows that a base number of cereal acres are needed to support the dairy industry (straw and land to summer haul manure). As farmers get ready to kick off the 2017 growing season here are a few suggestions to help get your 2017/18 winter wheat crop established on time.

- **Plant early.** If weather and soil conditions allow for it plant the acreage you intend to go to winter wheat first. This is regardless of which crop you plan to follow (soybean, corn silage or field corn). Remember the [optimal planting date window](https://www.extension.wisc.edu/expert-advice/soybeans/soybean-management-strategies) for most of our WI winter wheat acres is the last week of September through the first week in October. In table 1 on the next page you will notice that for every 3 days planting is delayed we see ~1 day delay in beginning maturity (R7), so delaying planting by one week equates to about 2 days later maturing. However when planting is delaying past June 1st it turns into more of a 1:1 relationship. Also remember in WI it normally takes another 5-8 days for the soybean crop to move from R7 to R8 (full maturity).

- **Consider an earlier maturity group soybean.** Plant a high yielding, earlier maturity group soybean to help get that soybean crop harvested on time. Though [later maturing varieties](https://www.extension.wisc.edu/expert-advice/soybeans/soybean-management-strategies) “on-average” produce the greatest yields, data from our 2016 [WI Soybean Variety Test Results](https://www.extension.wisc.edu/research/results-soybeans) show the maturity group range that included a starred variety (starred varieties do not differ from the highest yield variety in that test) was 1.8-2.8, 1.4-2.4, and 0.8-1.8 in our southern, central and north central regions respectively. This suggests that the “relative” maturity group rating is trumped by individual cultivar genetic yield potential. Therefore growers have options to plant an early maturity group soybean that will be harvested on time and not sacrifice yield.

- **Crop rotation matters.** Our long-term rotation data suggests winter wheat yields are greatest following soybean, followed by corn silage and lastly corn for grain. Therefore plan your rotation accordingly to maximize yield and system efficiency.

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**Considering Replanting Soybeans?**

Shawn P. Conley, Soybean and Wheat Extension Specialist

Even though very few soybean acres have been planted in WI there will be many agronomists across the Midwest assessing soybean stands after this deluge subsides. Below please find two resources that can assist both farmers and agronomists in making the replant decision easier.

- [Think Twice Before Replanting Soybeans](https://www.extension.wisc.edu/expert-advice/soybeans/soybean-management-strategies)

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WCM-41
Manage for the system not necessarily the crop. If you are serious about maximizing wheat grain and straw yield on your farm one of the biggest contributing factors for both of these in WI is timely wheat planting. Make management decisions to facilitate that. *We all know what inputs can extend maturity that don’t necessarily guarantee greater yields. So instead of listing them and fielding angry emails I am being strategically vague here* As a producer is it better to sacrifice 0-2 bushels of soybean yield or 10-20 bushels of wheat grain yield and 0.5 tons of straw?

As we all know mother nature holds the ultimate trump card on whether we will get our winter wheat crop established in that optimal window. These aforementioned strategies are relatively low risk to the farmer and regardless of what weather patterns we run into are agronomically sound.

### Wisconsin Winter Wheat Disease Update – May 2, 2017

Brian Mueller, Graduate Research Assistant, Department of Plant Pathology, University of Wisconsin-Madison

Damon Smith, Extension Field Crops Pathologist, Department of Plant Pathology, University of Wisconsin-Madison

The Wisconsin Field Crops Pathology crew continues to scout wheat stands in various locations in Wisconsin. The primary disease of focus, remains stripe rust. Late last week we identified yet another stand of winter wheat with early stripe rust in a production field near Arlington, WI. The entire stand was planted to the variety Kaskaskia and had moderate levels of severity on the lower leaves (see picture). Incidence was spotty, but correlated to the greenest plants in the stand that were protected over the winter by snow cover. Other areas of the field that clearly were not insulated by snow and were further behind in growth stage, did not have visible symptoms of stripe rust. This observation reinforces the fact that stripe rust overwintered in this location during the winter of 2016/2017.

<table>
<thead>
<tr>
<th>Planting Date</th>
<th>Maturity Group</th>
<th>Date of Growth Stage Initiation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>R5 Arlington</td>
</tr>
<tr>
<td>May 1st</td>
<td>2.5</td>
<td>3-Aug</td>
</tr>
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<td></td>
<td>2.0</td>
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<td>1.5</td>
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<td>May 20th</td>
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<td>June 1st</td>
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<td>June 20th</td>
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<td>18-Aug</td>
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<td></td>
<td>0.5</td>
<td>16-Aug</td>
</tr>
</tbody>
</table>

**Table 1.** Calendar date for reaching R5 (beginning seed fill) and R7 (beginning maturity) growth stage by planting date and maturity group for the 2014, 2015, and 2016 growing seasons at Arlington and Hancock, WI.

**Above:** Stripe rust on lower leaves of winter wheat plants at the Feekes 5 growth stage.
At this point in the season many growers have made their herbicide applications and either applied fungicide or held off. Growers and consultants should remain diligent in scouting for stripe rust and other diseases as the crop moves toward flag leaf emergence. As I look into my "crystal ball" I think that a decision to spray fungicide at the flag leaf growth stage is going to be critical in Wisconsin, especially on susceptible varieties. Weather has been very wet and temperatures are becoming more conducive for spread of the stripe rust pathogen. As these conditions persist, and we approach the flag leaf growth stage, a decision will need to be made to spray to control stripe rust. Remember that the flag leaf is responsible for much of the yield that a wheat plant will make. Our work in Wisconsin in 2016, demonstrated that for every 10% increase in stripe rust coverage on the flag leaf alone, we lost almost 5.5 bu/acre in grain yield across the Wisconsin winter wheat variety trials (see Fig. 1 here). Thus, protecting this leaf is extremely important. On stripe rust-susceptible varieties, we have seen much benefit in flag applications to control stripe rust, especially when the pathogen is active.

Remember that there are many fungicide options for stripe rust control. Also, fungicide applications directed toward Fusarium head blight (FHB or scab) will also protect against stripe rust. So as you make your decision to spray at the flag leaf growth stage, choose a product that fits your pocketbook and consider that you might spray a strobilurin-containing product at this earlier growth stage. Later in the season, you will want to rotate to a non-strobilurin-containing product for your FHB control (Prosaro or Caramba). Hopefully we won’t have to make two applications of fungicide this year, but be prepared should the conditions necessitate this practice. Get out and scout, scout, scout!

Wisconsin Pest Bulletin 4-27-16

Krista Hamilton, Entomologist, WI Dept of Agriculture, Trade and Consumer Protection

Volume 62 Issue No. 1of the Wisconsin Pest Bulletin is now available. Click here to view this issue.

PLEASE NOTE: This final Wisconsin Pest Bulletin of 2016 provides a post-growing season summary of prevailing insect and plant disease conditions and related weather. Once again, our sincerest thanks to the many cooperators, farmers, county agents and consultants who contributed their time and valuable information to the survey program this year.

INSIDE THIS ISSUE

LOOKING AHEAD: Large spring black cutworm migration underway

FORAGES & GRAINS: First alfalfa weevil larvae expected next week

CORN: Black cutworm traps capture 1,036 moths in April

SOYBEAN: Brown marmorated stink bug alert for 2017

FRUITS: Early STLM and RBLR moth flights in progress across the state

VEGETABLES: Asparagus beetles emerging and laying eggs in southern WI

NURSERY & FOREST: Hemlock wooly adelgid exterior quarantine reminder

DEGREE DAYS: Degree day accumulations through April 26, 2017

UW-Madison/Extension Plant Disease Diagnostic Clinic (PDDC) Update

Brian Hudelson, Sean Toporek, Jake Kurczewski 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 April 21, 2017 through April 28, 2017.

Plant/Sample Type, Disease/Disorder, Pathogen, County

Forage Crops
Alfalfa, Crown Rot/ Decay, 
Fusarium oxysporum, 
Fusarium solani, Fusarium spp., Grant
Alfalfa, Phytophthora Root Rot, Phytophthora sp., Grant

Fruit Crops
Blackberry, Cane Blight, Coniothyrium fuckelii, Taylor

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.
Wisconsin Fruit News, Issue 2

Janet van Zoeren, Christelle Guédot, and Amaya Atucha, University of Wisconsin – Madison, Departments of Entomology and Horticulture

Click here for volume 2’s 2nd issue of the Wisconsin Fruit News.

In it you will find information about:

• Photo guide for disease ID on cold-climate grapes
• Plant Disease Diagnostic Clinic update
• Insect Diagnostic Lab update
• Pest alert: Strawberry mites
• Cranberry degree-day map and update
• Grape insect scouting report: flea beetle vs cutworm damage
• Wine and table grapes developmental stages
• Timing of thinner application for apples
• Mass trapping of Codling Moth in apple orchards
• Apple pest report – spring caterpillars

All newsletters will also be posted onto at the Wisconsin Fruit website, available at www.fruit.wisc.edu. There you will also be able to search by category or tag, to find crops and/or subject material of interest to you on a particular day.

Vegetable Crop Update April 30, 2017

Amanda J. Gevens, Associate Professor & Extension
Vegetable Plant Pathologist

2017’s 3rd issue of the Vegetable Crop Update is now available.

In this edition, please find information on:

• Welcome and review of disease forecasting concepts
• Hop crop status updates – and confirmation of downy mildew on spikes in WI
• Welcome Dr. Yi Wang, our new potato and vegetable horticulture specialist

Click here to view this update.
Common Chickweed

Common chickweed is an annual weed that germinates in fall or spring.

**Leaves:** opposite (0.3 – 1.2 inches long) that are pointed at the tip. No hairs are present except for a single line of hairs on the leaf margin.

**Stems:** grow mostly prostate and up to 2 ft long. Stems can root at the nodes and form dense patches. Stems are smooth except for a single band of hairs on one side of the stem.

**Flowers:** 5 petal white flowers that grow from where the leaf connects to the stem. Petals are deeply notched and thus may appear to have 10 petals. Flowers are 0.25 inches wide.

**Biology:** Fall germinating chickweeds are one of the first plants to emerge and flower in spring. While this is commonly thought of as a winter annual, in wet years seeds can germinate and flower throughout the entire summer.

**Similar Plants:** several other chickweeds are common to Wisconsin including mouseear chickweed and giant chickweed. Mouseear chickweed has very hairy leaves and stems with more pointed leaves and giant chickweed leaves and flowers are 3-5 times bigger than common chickweed.
Weed Identification, 2017 Series, Horseweed

Mark Renz UW Madison Associate Professor and Extension Specialist (mrenz@wisc.edu), Chelsea Zegler UW Madison Associate Research Specialist (zegler@wisc.edu)

Weed species #2 that we wanted to emphasize this spring is horseweed, also known as marestail. This species has been in Wisconsin for well over a century and has been identified by experts in all but one county (Pierce). Despite this, I rarely see it as the dominant weed species in production fields. It does thrive in undisturbed areas with large amounts of bareground, so I typically see populations in no-till fields, roadsides, and other right of way areas. If you want to find this plant, it is easy to see populations growing along train tracks and roadsides throughout the state. Unique attributes of this plant include its ability to act as a winter or summer annual weed and its ability to evolve herbicide resistance in Wisconsin (glyphosate) and other states (glyphosate, ALS inhibitors, and PS I & II inhibitors).

Similar to our previous weed species we emphasized (chickweed) we have seen an increase in populations over the past several years, and I expect to see populations continue to increase in 2017.

Click here to download this factsheet.

Alfalfa Weevil

Bryan Jensen, UW Extension and IPM Program

Based on current degree day calculations several areas in southern Wisconsin are at, or a little past, 300 accumulated weevil degree days (base 48o F) which is the best tim-
ing to initiate scouting. At 300 weevil degree days, eggs are starting to hatch. Pinhole damage may be difficult to find because larvae are small and do not consume a lot of foliage. Concentrate your efforts on the leaflets at the tip of the stems as small larvae often like to hide in these folded leaflets prior to bud development. Scouting at 300 degree days will give you a heads up on damage potential and allow more time to reach a control decision, if needed. Maximum feeding should occur between 600 and 800 weevil degree days.

A treatment threshold of 40% tip feeding is suggested. This is not to advocate treating at 40% defoliation but rather when 40% of the stems have signs of weevil feeding. If you are over the suggested threshold and within 7 days of cutting, consider an early harvest. Timely cutting is still our best control option and you do not have to delay harvest because of the insecticide’s pre-harvest restriction. For those fields with heavy first crop weevil feeding, plan to check second crop regrowth for feeding on newly forming stem and crown buds. If environmental conditions are conducive, larvae and/or adults can survive harvest and cause significant damage to regrowth.

One of the challenges you may have is knowing when the potential for feeding is over. For that I have two suggestions. First look for silken cocoons (see picture below) which can be found on leaves or w/in the leaf litter on the soil surface. Secondly, use an insect sweep net and look for larvae. Small larvae are not easily dislodged, however, late instar larvae can be easily found in the net. Numbers swept are not used for management purposes other than to tell if larvae are present or not.

At this point in time, I have not received any calls regarding above threshold feeding.

### Soybean Growth Stages

**Shawn P. Conley, Soybean and Wheat Extension Specialist**

As soybean begin to crack and we move into post-emergent labels and restrictions due to crop growth stage here is a pictorial on Understanding Soybean Growth and Development: How to Properly Growth Stage Soybean to help guide timely and on label management decisions.

### Soybean Replant Decisions

**Shawn P. Conley, Soybean and Wheat Extension Specialist**

I had sent this posting out ~two weeks ago but our first planted soybeans are just starting to crack so I thought a friendly reminder of these articles would be timely to help guide soybean replant decisions. On a side note I know many of the growers and retailers are very frustrated with this recent rainfall event however many (10,000’s of thousands of acres) of early planted soybeans were severely crusted and this rainfall event saved many fields
from replanting. As with many things in life a mixed blessing…

**Think Twice Before Replanting Soybeans**

Considering Replanting? Let [Bean Cam](#) Help.

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### Soybean Emergence and Germination Common Issues

Shawn P. Conley, Soybean and Wheat Extension Specialist

Attached please find a YouTube video that addresses [Soybean Emergence and Germination Common Issues](#). Loss of cotyledons from last night’s hail events across the Midwest would cause similar yield loss as that caused by cotyledon loss from emergence related issues. That information is addressed in this video.

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### Black Cutworm

Bryan Jensen, UW Extension and IPM Program

A friendly reminder regarding the potential for Black Cutworm (BCW) damage in corn. Based on arrival of the migrating adults, the WI Department of Agriculture, Trade and Consumer Protection’s Pest Survey is anticipating BCW cutting may appear around May 21. Although BCW’s are an occasional pest in Wisconsin, the Pest Survey’s BCW pheromone trap network had recorded a strong flight this spring. Furthermore, a lot of Wisconsin’s corn will likely be at a stage (VE-V4) which is susceptible to cutting and/or below ground tunneling.

Begin spot checking corn fields that will be most attractive and include fields with significant broadleaf weed populations, soybean residue and/or low lying areas of fields. To get an accurate assessment of BCW damage, count the number of cut plants in 50 consecutive plants in each of 5 areas of a field and collect 10 larvae to determine instar. Treatment is suggested when 2-5% of the plants are cut and before the later instars (roughly 1 inch) are present. Some seed treatments and Bt hybrids may control/suppress black cutworms. However, when BCW populations are high these treatments may not control cutworms effectively. Knowing the size of larvae is important and a head capsule gauge can be found in on page 56 (Table 2-9) of [A3646, Pest Management in WI Field Crops](#). For example, if the majority of larvae are 7th instar, feeding may only continue for another 5 days making control uneconomical. If damage is not uniform within a field, spot treatments may be a good option.

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### Row Spacing and Seeding Rate and Effects on Weed Management

Shawn P. Conley, Soybean and Wheat Extension Specialist

Pigweeds are among the most abundant and troublesome weed species across the Midwest and Midsouth because of their prolific seed production capacity and their ability to rapidly evolve herbicide resistance. This considerable challenge has sparked renewed farmer and practitioner interest in diversifying weed management by implementing integrated weed management (IWM) programs that efficiently manage weeds, increase soybean light interception, and increase grain yield. Our results suggest that even though agronomic practices such as row spacing and seeding rate can positively influence weed crop interactions a combined PRE followed by POST herbicide strategy was our most valuable IWM tool to decrease weed seed production and increase soybean yield.

**Watch Presentation** (26 min 12 sec)

[for PC, Mac, and Mobile Devices](#) | [for iPhone](#)

**Subscribe to PMN**

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### Wisconsin Pest Bulletin issues #2, #3, #4 available

Krista Hamilton, Entomologist, WI Dept of Agriculture, Trade and Consumer Protection

5/4/2017 Issue No. 2 of the Wisconsin Pest Bulletin is now available at:

Vegetable Crop Update May 7, 2017

Amanda J. Gevens, Associate Professor & Extension Vegetable Plant Pathologist

2017’s 3rd issue of the Vegetable Crop Update is now available. Click here to view this issue.

In this edition, please find information on:

- Current Special Local Need Registrations and Emergency Pesticide Exemptions for use in Wisconsin
- National Late Blight Updates
- Blackleg of Potato: Dickeya and Pectobacterium Review for 2017

Vegetable Crop Update May 13, 2017

Amanda J. Gevens, Associate Professor & Extension Vegetable Plant Pathologist

2017’s 4th issue of the Vegetable Crop Update is now available. Click here to view this issue.

In this edition, please find information on:

- Cull pile destruction deadline of May 20 reminder
- National updates on late blight and cucurbit downy mildew
- Updated list of fungicides for hop downy and powdery mildew for WI

UW-Madison/Extension Plant Disease Diagnostic Clinic (PDDC) Update

Brian Hudelson, Sean Toporek, Jake Kurczewski 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 April 29, 2017 through May 5, 2017.

Plant/Sample Type, Disease/Disorder, Pathogen, County

**Fruit Crops**
- Apple, Black Rot, *Sphaeropsis* sp., Rock
- Apple, Cytospora Canker, *Cytospora* sp., Rock
- Apple, Phomopsis Canker, *Phomopsis* sp., Rock
- Apple, *Root Rot*, Pythium sp., *Fusarium* sp., Rock

**Vegetable Crops**
- Tomato, Arabis Mosaic, *Arabis mosaic virus*, Dane
- Tomato, *Cucumber Mosaic*, *Cucumber mosaic virus*, Dane
- Tomato, Tobacco Mosaic, *Tobacco mosaic virus*, Dane

For additional information on plant diseases and their control, visit the PDDC website at [pddc.wisc.edu](http://pddc.wisc.edu).

Follow the clinic on Facebook and Twitter @UWPDDC.

UW-Madison/Extension Plant Disease Diagnostic Clinic (PDDC) Update

Brian Hudelson, Sean Toporek, Jake Kurczewski 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 May 6, 2017 through May 12, 2017.

Plant/Sample Type, Disease/Disorder, Pathogen, County

**Forage Crops**
- Alfalfa, Crown/Root Rot, *Fusarium* sp., Clark
- Alfalfa, Pythium Root Rot, *Pythium* sp., Clark

**Specialty Crops**
- Hop, Apple Mosaic, *Apple Mosaic Virus*, Ingham (MI)
- Hop, *Cucumber Mosaic*, *Cucumber mosaic virus*, Ingham (MI)
**Vegetable Crops**

Potato, Bacterial Soft Rot, *Dickeya sp.*, Portage  
Potato, Dry Rot, *Fusarium sambucinum*, Langlade  
Potato, Leak, *Pythium sp.*, Langlade

For additional information on plant diseases and their control, visit the PDDC website at [pddc.wisc.edu](http://pddc.wisc.edu).  

Follow the clinic on Facebook and Twitter @UWPDDC.

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**Wisconsin Fruit News, Issue 2**

Janet van Zoeren, Christelle Guédot, and Amaya Atucha, University of Wisconsin – Madison, Departments of Entomology and Horticulture

[Click here to view the 3rd issue of the Wisconsin Fruit News.](http://example.com)

In it you will find information about:

- Promalin, a frost rescue alternative for apples  
- Home Fruit Cultivars for Southern Wisconsin – updated publication  
- An integrated approach to pest management  
- Plant Disease Diagnostic Clinic update  
- Insect Diagnostic Lab update  
- Eastern Flower Thrips  
- Cranberry degree-day map and update  
- Planting and caring for young grapevines  
- Wine and table grapes developmental stages  
- Grape insect pest scouting report  
- Using NEWA weather stations to predict spray timings: an example from plum curculio

All newsletters will also be posted onto at the Wisconsin Fruit website, available at [www.fruit.wisc.edu](http://www.fruit.wisc.edu). There you will also be able to search by category or tag, to find crops and/or subject material of interest to you on a particular day.
Managing Rained-on Alfalfa for Haylage

Dan Undersander, Forage Agronomist

When alfalfa is rained on after mowing, forage quality and dry matter are lost. Rain amount and intensity are the significant factors affecting the amount of loss:

- A light drizzle will have little effect (other than to lengthen drying time and increase respiratory losses of starch and sugar.)
- A prolonged rain additionally will leach out some of the soluble nonstructural carbohydrates (sugars) and soluble protein.
- An intense rain will additionally cause leaf loss, resulting in dry matter loss and quality loss since the leaves are low in fiber and the stems remaining are higher in fiber.

Some common questions about rained-on alfalfa are:

Is it better to have alfalfa in a wide swath or a windrow when rain occurs?

Generally, leaching loss is highest on freshly cut material while leaf shattering is low on wet forage and highest on drier forage (shattering is more of an issue for hay making than haylage at 60% moisture, graph below from Scarbrough et al. 2005). Leaching and leaf loss will generally be less in a windrow. On the other hand, the windrow must be turned or spread out to dry again after a prolonged or intense rain which will cause leaf loss. A swath many also
be compressed by moderate to heavy rain and need to be turned to enhance drying. Thus, when making haylage, it is often best to leave forage in a wide swath and rake/merge into windrow just ahead of chopping.

How long can I leave alfalfa in the field to dry and still harvest for haylage? (Alternatively, when do I decide to chop the alfalfa back onto the field rather than harvest?)

The major concern with harvesting rained-on forage are accumulation of mold and mycotoxins and ability of forage to ferment in silo. Generally, alfalfa is worth harvesting (at least for heifer feed) as long as slime molds have not developed on the forage. When such molds have developed, palatability and fermentability of forage are reduced and likelihood of secondary microorganisms producing mycotoxins is increased. Therefore, recommendation is to chop slimy forage back onto the field. This will at least return nutrients to the soil for regrowth. Forage left in the field for more than 3 days will have lost much of the nonstructural carbohydrates (starch and sugars) which are the foodstuffs of silage fermentation bacteria. Should I apply an inoculant to rained-on alfalfa?

The data from Rich Muck in the graph in the lower left show that lack of starch and sugars for fermentation will reduce likelihood of profitable Lactobacillus plantarum inoculant use as forage is left in the field longer. The probability of successful inoculant benefit is also reduced as air temperature increases. Beyond three days in the field, sufficient starch and sugar have been lost to suggest that inoculant is generally not beneficial. At this point, silage should be ensiled with propionic acid (preferably mixed with some acetic and/or benzoic acid). The recommended rate of acid application is 2 lb. active ingredient/fresh weight ton of forage.

Considerations for 2017 Cover Crop Interseeding

Daniel H. Smith, Nutrient and Pest Management Program
Matt Ruark, Soil Science Extension Specialist, Department of Soil Science

University of Wisconsin-Madison

Cover crop establishment following wheat, silage corn, and canning crops can be relatively easy. Corn and soybean production practices allow for a short window for cover crop establishment in the fall and this may not be enough time for some cover crop species to establish and provide agronomic benefits. Corn and soybean growers interested in using cover crops following corn and soybean crops may look to interseeding to establish a cover crop earlier in the season. Interseeding is defined as planting a cover crop during the vegetative growth stage of a crop, whereas overseeding typically occurs near harvest.

Goal of Cover Crop

A goal is needed to achieve maximum cover crop success. Cover crop species often have common benefits but each species may contribute more of one benefit over another. Several cover crop goals include reducing soil erosion, scavenging for nutrients, nitrogen source, forage quality, or winter kill. It is also important to consider interseeding cover crops a long-term strategy for soil improvement. One year of interseeding will have little effect on soil health. It is the long-term and continual use of cover crops that lead to improvements in the soil condition.

Cover Crop Species

Wisconsin research has demonstrated red clover interseeded into V5 growth stage corn successfully the past three years with no significant difference in grain yield.
when compared to a non-interseeded plot. Red clover was seeded with a modified no-till drill at university recommended rates and depths. Many cover crop species may work in an interseeding system, however, experimentation in any unproven species may result in reduction in yield, future cover crop management issues, and lack of desired cover crop performance.

Herbicide History

The herbicides previously applied on the desired field for interseeding may dictate whether interseeding is possible or not. In general, residual herbicides may reduce cover crop growth. Interseeding and using residual herbicides is not impossible but is challenging. Herbicide resistant weed management should be considered when planning herbicide applications. The field should be weed free prior to interseeding. The cost of herbicide program, cover crop benefits, and resistance management should all be considered. More information on cover crop interseeding and herbicides is available through Penn State Extension: http://extension.psu.edu/plants/crops/soil-management/cover-crops/interseeder-applicator/improving-the-success-of-interseeding-cover-crops-in-corn

Crop Insurance

For crop insurance purposes, overseeding and interseeding are defined as planting one or more cover crop species into an existing crop. If the cover crop and insured grain crop are established in such a way that separate agronomic practices and management cannot occur, then the cash crop is not insurable. Overseeding and interseeding a conservation cover crop does not affect the insurability of the grain crop as long as the cover crop is established in a way that does not affect harvest and yield of the cash crop. Any damage or yield loss to the grain crop caused by interseeding or overseeding a cover crop will not be covered by crop insurance and will be applied to appraised value of cash crop, thus reducing any insurance indemnity that may be paid. Finally, note that for crop insurance purposes, interplanting is defined as planting multiple species that are grown together with no distinct row pattern and in this case, separate agronomic practices are not possible and so the grain crop is not insurable. Always talk with your crop insurance agent before interseeding any cover crops.

Seeding Method

Recent Wisconsin research has focused on interseeding using a modified no-till drill. However, there are many ways of interseeding cover crops. Cover crops can be interseeded using specialized commercially made equipment commercially, fertilizer spinner, or an air spreader. Larger growers have relied on overseeding cover crops in late summer via aerial applications or using specialized high clearance seeding equipment that often mounts onto a high clearance sprayer. Cover crop seeding rate, soil moisture levels, and environmental conditions should be considered prior to seeding the cover crop with a cash crop. Cover crop seeding rate can be reduced when drilling a cover crop vs. overseeding.

Cover Crops for Forage Use

A crop is classified as a cover crop when no biomass is harvested. A cover crop becomes a forage crop when biomass is harvested for feed. A cover crop can be used for forage, however, most pesticide labels do not provide the plant back restriction time required from pesticide application to grazing or harvest for cover crops, only forage crops. If a cover crop will be planted later this cropping season, consider the rotational restrictions for any herbicides used in the field the past few seasons.

For more information on Wisconsin cover crop interseeding research:

https://www.youtube.com/watch?v=ipw2IsyYZOE
http://ipcm.wisc.edu/blog/2015/08/interseeding-cover-crops-into-v5-corn/
http://fyi.uwex.edu/covercrop/

For more information on cover crops and cover crop species selection:

http://mccc.msu.edu/
http://mccc.msu.edu/selector-tool/

Managing 2,4-D and Dicamba in Enlist™ and Xtend® Soybean

Shawn P. Conley, Soybean and Wheat Extension Specialist

Enlist™ and Xtend® traits are engineered to provide resistance to the group 4 synthetic auxin herbicides 2,4-D and dicamba, respectively. These traits allow, for the first time, POST applications for control of broadleaf weeds in soybean and cotton. However, many broadleaf plants are inherently sensitive to 2,4-D and dicamba, and the use of the Enlist and Xtend technologies requires proactive stewardship of the herbicides.

Click here to read our United Soybean Board grant funded Take Action publication.
Grain Management in Low-Margin Years

Shawn P. Conley, Soybean and Wheat Extension Specialist

The Winter Grain Meeting series entitled Grain Management in Low-Margin Years was a new focused series of outreach events that aimed to help grain farmers in Wisconsin increase their profitability and reduce their debt load. Click here to review a program assessment of our winter Extension meeting series.

Program Highlights:

• 455 total participants (245 returned assessment surveys)

• 66% of the respondents thought the topics were “very relevant”, and 33% “moderately relevant”

• 99.6% thought that “Overall, attending the meeting was a valuable use of my time”

• 94% thought that “as a result of attending today’s meeting it will help increase my profitability”

• 56% thought that “attending the meeting helped alleviate my stress level about my farm operation”

• All of the respondents (100%) answered yes to the statement: “One part of a county agent’s job is to bring research and unbiased, science-based information to the county. Do you feel this meeting helped fulfill that goal?”

This meeting series was a joint effort led by Dr. Damon Smith and Ted Bay among UWEX state specialists and UW Agriculture and Natural Resources Extension agents.

Here is a summary publication of the information that was handed out at the meetings. “A4137 – Grain Management Considerations in Low-Margin Years” available online for download.

Below also please find a specific video, or view the full playlist on the UWIPM YouTube channel. There is a table of contents below each video on YouTube with quick links to jump to key parts in longer videos.

• Soybean Inputs that Deliver the Highest ROI in a Low-Margin Year – Shawn Conley, UW Agronomy, Soybean and Small Grains Specialist (40 min)

• Practical Weed Management for Low-Margin Years – Dan Smith, UW NPM, Southwest Regional Specialist (14 min)

• Fundamental Soil Fertility Strategies for Success – Carrie Laboski, UW Soil Science, Soil Fertility/Nutrient Management Specialist (37 min)

• How to Survive and Thrive on Current Corn Price Projections – Joe Lauer, UW Agronomy, Corn Specialist (41 min)

• Low Grain Prices = Smart Disease Management Decisions – Damon Smith, UW Plant Pathology, Field Crops Pathology Specialist (29 min)

• Managing Insects Economically Using Conventional Hybrids and Thresholds – Bryan Jensen, UW Entomology, Field Crops Entomology Specialist (38 min)

• Machinery/Technology Management and Tillage Considerations to Reduce Operational Costs – Francisco Arriaga, UW Soil Science, Soil Science Specialist and Brian Luck, UW Biological System Engineering, Machinery Specialist (16 & 10 min)

• Partial Budget Analysis: A Practical Tool for Low Margin Years – Paul Mitchell, UW Ag & Applied Econ, Cropping Systems Specialist (31 min)

Rain Rain Go Away Do I Switch to Soybean From Zea May(s)

Shawn P. Conley, Soybean and Wheat Extension Specialist

As growers begin to contemplate switching intended corn acres to soybean, here is a quick checklist of points and questions to consider or reconsider before making that switch.

• Do I have a residual corn herbicide down that is not labeled for soybean? If the answer to this question is yes, then Don’t Switch Crops. It doesn’t matter how much rain we have had. Plant back label restrictions must be followed.

• What is my cost of production and weather outlook for finally getting this crop in the ground? Dr. Joe Lauer just posted his corn replanting and yield loss guide. Expected corn grain yield if planted in the next 8 days would range from ~70 to 85% of maximum yield. Soybean yield would roughly be 85 to 90% of maximum yield based on your maturity group and final planting date. Run your numbers, talk to your lender, and see what gives you the greatest ROI.

• I already put out all my nitrogen (or for WI growers – I am following alfalfa). What potential impacts will that have on my soybean crop?
1. Dr. Emerson Nafziger did a great job shedding light on question #1 regarding N management… How Much Nitrogen is Gone?

2. Knowing that most of the N will likely be available to the soybean crop, there is a risk of lush vegetative growth, possible lodging (harvest efficiencies) and higher risk for white mold. However soybean total dry matter and growth will be behind due to its late planting so this risk is lessened. I would most be concerned about white mold. Luckily, we have Dr. Damon Smith at UW Madison and he will keep us updated as to potential white mold risk this summer so stay tuned for possible next steps!

3. Soybean is very efficient at N uptake and partitioning so that N will likely still see its way to the elevator.

4. If you decide to plant soybeans into these high N fields, I would pull the inoculant from the seed treatment mix if this field has seen regular soybean cropping (2 years out of the last 5). Biological nitrogen fixation will be delayed due to free N availability and the soybean crop will rely on background soil rhizobia for subsequent infection.

- Will I be planting elite soybean genetics if I switch or will I be planting a dog? Even in late planted situations, we are still roughly at 90% maximum yield potential. Don’t ditch your elite corn genetics to plant junk beans. Please see our Wisconsin Soybean Performance Trials for more information on variety selection.

- Lastly, how much of my 2017 crop is marketed and how flexible are my options. Even though plantings of both crops are delayed, if we continue to see poor corn crop ratings across the ‘I’-states and then see another million acres of corn go to soybeans, I believe this will put significant pricing pressure on both crops.

**UW-Madison/Extension Plant Disease Diagnostic Clinic (PDDC) Update**

Brian Hudelson, Sean Toporek, Jake Kurczewski 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 April 29, 2017 through May 5, 2017.

**Plant/Sample Type, Disease/Disorder, Pathogen, County**

**Vegetable Crops**

| Potato, Black Dot, Colletotrichum sp., Portage |
| Rhubarb, Root/Crown Rot, Pythium sp., Rhizoctonia sp., Dane |

For additional information on plant diseases and their control, visit the PDDC website at [pddc.wisc.edu](http://pddc.wisc.edu).

Follow the clinic on Facebook and Twitter @UWPDDC.

**Vegetable Crop Update May 22, 2017**

Amanda J. Gevens, Associate Professor & Extension Vegetable Plant Pathologist

2017’s 5th issue of the Vegetable Crop Update is now available. Click here to view this issue.

In this edition, please find information on:

- Disease updates for late blight and cucurbit downy mildew

- An updated list of registered fungicides for potato late blight for Wisconsin (as of May 22, 2017). Click here for the list of Potato Late Blight Fungicides

**Corn Late Planting/Replanting Guidelines**

Joe Lauer, Corn Agronomist

This week many farmers will be evaluating corn stands. Find useful links to publications below.

[http://corn.agronomy.wisc.edu/Pubs/UWEX/A3353.pdf](http://corn.agronomy.wisc.edu/Pubs/UWEX/A3353.pdf)

[http://corn.agronomy.wisc.edu/Management/L004.aspx](http://corn.agronomy.wisc.edu/Management/L004.aspx)

**Wisconsin Pest Bulletin 5-25-16**

Krista Hamilton, Entomologist, WI Dept of Agriculture, Trade and Consumer Protection

Volume 62 Issue No. 5 of the Wisconsin Pest Bulletin is now available. Click here to view this issue.
INSIDE THIS ISSUE

LOOKING AHEAD: Black cutworm peak damage period now open

FORAGES & GRAINS: Alfalfa weevil larvae pressure increasing as alfalfa harvest is delayed

CORN: Continue scouting for evidence of black cutworm infestation

SOYBEANS: First soybean aphids expected to colonize fields by early June

FRUITS: Codling moth emergence now underway across southern and central Wisconsin

VEGETABLES: Colorado potato beetle adults migrating into potato fields

NURSERY & FOREST: Assorted observations from this week’s nursery inspections

DEGREE DAYS: Degree day accumulations through May 24, 2017
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Crop Diagnostic Training Center Workshop

July 25 at Arlington WI, Agricultural Research Station

The best of all workshops! This year our crop & pest management workshop and diagnostic troubleshooting workshop have been combined into a single day.

The day starts with 2 hours of multi-disciplinary agro-nomic topics and culminates with 6 separate diagnostic troubleshooting scenarios.

Late and Prevented Planting coverage factsheet

Paul D. Mitchell, Agricultural and Applied Economics, University of Wisconsin-Madison

This fact sheet quickly reviews crop insurance rules to remind returning growers and to help new growers understand late and prevented planting dates and options.

http://www.aae.wisc.edu/pdmitchell/CropInsurance/LatePreventPlant2017.pdf

Tuesday – July 25, 2017, Lunch is provided at noon
Tiered fee: $90 before 7/15/17, $100 after 7/15/17
Location: Arlington Ag Research Station
FAST and easy ONLINE registration by credit card at https://www.patstore.wisc.edu/ipm/register.aspx
See the flyer at the end of the newsletter.
Scouting for Soybean Seedling Diseases

Damon Smith, Extension Field Crops Pathologist, Department of Plant Pathology, University of Wisconsin-Madison

The 2017 planting season has been frustrating for many farmers with frequent rains, wet soils, and cool temperatures. These conditions have resulted in slow, or no planting, for some farmers. To add insult to injury, these conditions are also conducive for many seedling diseases of soybean.

The Crop Protection Network, which the UW Field Crops Pathology program is a part of, has generated several useful publications for diagnosing and managing soybean seedling diseases.

Figure 1. CPN-1008 “Soybean Seedling Diseases”

The first publication is a full length fact sheet titled “Soybean Seedling Diseases.” It also has a companion website found by clicking here. This publication can help you differentiate seedling diseases and also herbicide injury, both of which could be issues for many farmers this season.

Speaking of herbicide issues, the CPN has also generated a useful publication on using ILeVO® seed treatment on soybean. Many farmers in Wisconsin have considering using ILeVO® to manage sudden death syndrome and soybean cyst nematode. Farmers should be aware that it is well known that ILeVO® can cause some phytotoxicity to soybean that looks similar to a soybean seedling disease. A useful fact sheet on this phenomenon can be found by clicking here.

Figure 2. CPN-1016 “Soybean seed treatments: Questions that emerge when plants don’t”

Many farmers have elected to use a seed treatment (fungicide, insecticide, nematicide or combination) to protect their seed investment. This is a wise decision, especially considering the cool wet soils that many of us have planted into this season. However, just because a seed treatment was used, there still can be emergence issues. To aid in understanding these issues, the CPN has generated a webpage and fact sheet “Soybean Seed Treatments: Questions that emerge when plants don’t.”

Finally, if conditions remain wet, Phytophthora root and stem rot may affect soybean stands early to mid-season. The CPN has developed a webpage and PDF on this subject, which can be found by clicking here. The UW Field Crops Pathology program has also generated a similar fact sheet on Phytophthora root and stem rot that can be found by clicking here.

As always, if you have questions about diseases of soybean, or any field crop, please contact and we can assist in diagnosing and developing a management strategy.
Wisconsin Winter Wheat Disease Update – May 28, 2017

Damon Smith, Extension Field Crops Pathologist, Department of Plant Pathology, University of Wisconsin-Madison
Brian Mueller, Graduate Research Assistant, Department of Plant Pathology, University of Wisconsin-Madison

The Wisconsin Field Crops Pathology crew spent some time this past week scouting wheat and rating wheat variety trial plots, between planting soybeans and dodging rain storms. Despite the challenging week, the crew was able to get around to several sites and take a look at winter wheat.

Wheat ranges from fully emerged flag leaf to emerging heads across the sites visited. As predicted, stripe rust is progressing to epidemic levels on susceptible and moderately susceptible varieties (Fig. 1).

Figure 1. Severe stripe rust on winter wheat prior to head emergence.

We were able to find many plots with stripe rust on the L2 leaf (leaf immediately below the flag leaf) with some varieties already showing 20% or more severity on flag leaves (Fig. 2). We were also able to find many varieties still showing no symptoms of stripe rust. We also have had several reports of disease-free winter wheat across the state. Further inquiry suggests that many did their homework last summer and fall, and chose varieties with excellent stripe rust resistance. This will more than pay for itself this season in fungicide spray savings.

Figure 2. Stripe rust on a flag leaf of winter wheat.

We are quickly approaching head emergence and anthesis on many varieties in the state of Wisconsin. I predict that anthesis (flowering) will take place within the next week or so in Wisconsin. Farmers should focus on making a decision on fungicide application to control Fusarium head blight (FHB or scab).

At this point, I think farmers should hold off on a fungicide application specifically for stripe rust. The major focus for fungicide application on winter wheat in Wisconsin should shift to managing FHB. With this said, the two primary products that have performed well in Wisconsin for FHB, also perform well on stripe rust and are ranked excellent in the Small Grains Fungicide Efficacy Table. This means that spraying for FHB will also control stripe rust, as long as the stripe rust epidemic has not advanced to high levels on the flag leaves.

Currently, the Fusarium Head Blight Prediction Center is ranking much of the primary winter wheat growing area of Wisconsin at medium-to-high risk for FHB on susceptible varieties (Fig. 3, next page). Plenty of rain and adequate temperatures are making conditions ripe for FHB in the major wheat production area of the state.
The next 7-10 days poses a critical time to make a decision for fungicide application to control FHB and stripe rust. The primary fungicides for control of FHB are Caramba and Prosaro. I would urge you to wait until anthesis has begun in your field before applying. We have observed poor control of FHB where application of these effective fungicides was made before anthesis. In fact, we have observed improved control of FHB and lower levels of DON in finished grain where fungicide application was delayed 4-5 days after the beginning of anthesis, compared to applications at the start of anthesis.

Data from a fungicide efficacy trial to support this observation can be found by clicking here and scrolling down to pages 16 and 17.

Also, remember that application of fungicides should be made no later than 6-7 days after the start of anthesis. After this time, fungicide efficacy on FHB is much reduced. Finally, DO NOT use any fungicide products that contain a strobilurin fungicide after the “boot” stage in wheat. Some studies have demonstrated that using strobilurin fungicides at, or after heading, can result in increased vomitoxin (DON) levels in finished grain. Get out there and SCOUT, SCOUT, SCOUT!

**Wet weather field crop pests, millipedes and slugs**

Bryan Jensen, UW Extension and IPM Program

**Millipedes**

Because of the wet/cool weather, I’m sure a lot of people will be in fields focusing on corn and soybean emergence. Although there are many potential causes for poor stands, millipedes are often looked at as a potential pest. Millipedes are in the class Diplopoda and therefore, only somewhat distantly related to insects. Millipedes have two sets of legs on most of the body segments and usually feed on decaying plant materials. They are most common when field conditions are wet.

I rarely, if at all, think of millipedes as the primary cause of poor emergence. Rather, they may feed on decaying seeds/seedlings that are already compromised by other pests or environmental problems. However, they are easy to find close to the decaying seed and are often considered “guilty by association”. Although I will not rule out the possibility of millipedes, I would want to focus on all the other possibilities before settling on millipedes. Quickly jumping to a conclusion may prevent finding what the real cause is.

**Slugs**

Not all that unexpectedly, slug calls have started. Both soybean and corn are susceptible and once the field is planted, preventive options (tillage, residue control, rotation, **not** using a neonic seed treatment, seed furrow closure, etc.) are no longer available and focus must be on rescue. Unfortunately, relying on baits and other rescue treatments may not provide economical (or acceptable) control. An integrated approach using prevention is always preferable.

Non-chemical options including row cultivation isn’t always possible, reliable or practical. Effective weed control can help but is already part of your best management practices. Some people have tried spraying liquid fertilizer solutions at night with mixed results. I have had no experience with this practice but can see some problems including lack of replicated research, high costs and that multiple applications may be needed for a lethal dose. Control is by contact only, there is no residual control.

Insecticides will not work. Slug baits can be effective but given tight profit margins they might not be an option depending on severity of infestation.
Economic thresholds do not exist for slugs. Before baits are considered, **thoroughly read the label**. The metaldehyde-based baits labels that I have read exclude soybean use in Wisconsin. This is not obvious because you must read a footnote which indicates states that are approved for use. The Sodium Ferric EDTA containing product (Iron Fist) comes with precautions as well. Although labeled for corn and soybean production in Wisconsin, it must be applied between the rows at the seedling and later stages of crop development. Furthermore, it's availability is restricted in some Midwestern states.

One of the best options available right now may be patience and the hope that summer-like dry weather will arrive.

UW IPM has a video about slug damage and scouting [https://www.youtube.com/watch?v=sgXL14zBEZw](https://www.youtube.com/watch?v=sgXL14zBEZw)

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**Weed Identification Series, 3 Biennial Thistles**

Mark Renz UW Madison Associate Professor and Extension Specialist, Chelsea Zegler UW Madison Associate Research Specialist

We wanted to emphasize Wisconsin’s common weedy biennial thistles in this weed identification series installment. While Wisconsin has dozens of different thistles, we have three relatively common biennial thistles that are considered weeds. Recall that biennial plants germinate and grow leaves only in the first year and then after overwintering produce a stem and flowers. Once flowering is complete the plant dies. It is important to distinguish these thistle from our perennial thistle (Canada thistle) which has plant parts that can last more than two years and result in dense patches that persist and spread.

Plumeless thistle is by far the most common of the biennial thistles in Wisconsin as it can be found throughout the state. In contrast musk thistle is more common in southern Wisconsin, but populations have been spreading north. Bull thistle, while common throughout Wisconsin, rarely forms large populations, but none the less can be problematic.

These three species are common to pastures and right of way areas, but have become more common in no-till fields over the past decade. These species can be difficult to differentiate from one another, but close examination of leaves and flowers will find unique characteristics that can help. To aid in identification we have provided a summary table along with side-by-side pictures.

Click below to download. There are 4 files.

- Plumeless Thistle ID
- Musk Thistle ID
- Bull Thistle ID
- Biennial Thistle Comparison table

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**Wisconsin Fruit News – season 2, issue 4**

Christelle Guédot, Entomology Specialist, UW-Madison and Amaya Atucha, Horticulture Specialist

In this issue of the newsletter, you can read about:

- Soil-borne diseases of fruit crops: Introduction
- IPM: Monitoring pest populations and action thresholds
- Plant Disease Diagnostic Clinic update
- Insect Diagnostic Lab update
- Spotted wing drosophila forecast for 2017
- Strawberry root weevil and Black vine weevil
- Cranberry degree-day map and update
- Controlling vine vigor by shoot thinnings
- Wine and table grapes developmental stages
- Grape insect pest scouting report — Grape plume moth
- Codling moth flight begins

[Read or download here](http://go.wisc.edu/pzxk8w)
Wisconsin Pest Bulletin 6/1/17

Volume 62 Issue No. 6 of the Wisconsin Pest Bulletin is now available at:

https://datcpservices.wisconsin.gov/pb/pdf/06-01-17.pdf

- Much of the state's corn still at high risk for black cutworm infestation.
- FORAGES & GRAINS: Alfalfa weevil larval populations continue to increase
- CORN: Spring flight of European corn borer moths underway
- SOYBEANS: Damage from slugs expected if wet weather persists
- FRUITS: Grape plume moth larvae appearing in southern and western WI vineyards
- VEGETABLES: Begin scouting for Colorado potato beetle eggs and small larvae
- NURSERY & FOREST: Assorted observations from this week's nursery inspections
- DEGREE DAYS: Degree day accumulations through May 31, 2017

Vegetable Crop Update No. 6 – May 31

Amanda J. Gevens, Associate Professor & Extension Vegetable Plant Pathologist

- Late Blight and Early Blight Disease Forecast Updates
- National Late Blight Updates
- National Cucurbit Downy Mildew Updates
- Request for Soil Samples for Microbe Research

Veg Crop Update 6 2017

Plant Disease Diagnostic Clinic (PDDC) Update, 6-2-17

Brian Hudelson, Sue Lueloff 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 May 27, 2017 through June 2, 2017.

PLANT/SAMPLE TYPE, DISEASE/DISORDER, PATHOGEN, COUNTY

FORAGE CROPS

Alfalfa, Root/Crown Rot, Pythium sp., Rhizoctonia sp., Fusarium sp., Outagamie

FRUIT CROPS

Cherry, Bacterial Canker, Pseudomonas syringae pv. syringae, Dane

VEGETABLE CROPS

Potato, Fusarium Dry Rot, Fusarium sp., Dane, Grant (WA)
Potato, Leak, Pythium sp., Grant (WA)
Potato, Pythium Stem Canker, Pythium sp., Kankakee (IL)
Potato, Soft Rot, Clostridium sp., Grant (WA)
Tomato, Cucumber Mosaic, Cucumber mosaic virus, Washington
Tomato, Tobacco Mosaic, Tobacco mosaic virus, Washington

Follow us
The best of all workshops! This year our crop & pest management workshop and diagnostic troubleshooting workshop have been combined into a single day. The day starts with 2 hours of multi-disciplinary agronomic topics and culminates with 6 separate diagnostic troubleshooting scenarios.

Tuesday – July 25, 2017
Lunch is provided at noon
Tiered fee: $90 before 7/15/17, $100 after 7/15/17
Location: Arlington Ag Research Station
CCA CEU’s: 5.0*

Pigweed Species Identification & Control – Mark Renz, Extension Weed Science Specialist
• Is it pigweed? Waterhemp? Some other Amaranth species?
• This session will provide you with the tools to positively identify these troublesome weeds and discuss control options while considering herbicide resistance and recent technologies

Spray Drift Mitigation – Dan Heider, UW Integrated Pest Management Specialist
• Rain followed by more rain. When the rain stops, the wind seems to start with few good spray windows between. Are you confidently spraying on target?
• Nozzles and drift control additives will be demonstrated so you can really see what’s happening behind the spray boom

Diagnostic Troubleshooting – UW Specialists from multiple disciplines
• Fine tune your crop diagnostic skills in a fun and interactive setting. Small groups will rotate through field problems with UW Specialists role playing as farmers. Through digging up plants, asking questions and consulting references participants will make a diagnosis of the problem being observed and a recommendation for correction. Each participant will experience 6 separate diagnostic scenarios

Schedule:
8:30 - 8:50 registration
8:50 - 9:00 introduction/orientation
9:00 - 11:00 agronomic topics 1-2
11:00 - 12:00 troubleshooting sessions 1-2
12:00 - 12:45 lunch (provided)
12:45 - 2:45 troubleshooting sessions 3-6

Workshops begin in the Public Events Facility of the Arlington Agricultural Research Station. Be aware that this is not a “traditional” field day. Training sessions are designed to be in-field and hands-on. Therefore we advise that you come prepared for all types of weather.

*CCA CEU’s: Continuing education units/categories are subject to change pending approval from the Certified Crop Advisor Program.
This bulletin quickly reviews crop insurance rules to remind returning growers and to help new growers understand late and prevented planting dates and options as this wet spring continues.

### Key Dates

For crop insurance, the final planting dates in Wisconsin differ by crop and from north to south. The dates are May 25 for corn for grain and May 31 for corn silage in the north and May 31 for corn for grain and June 5 for corn silage in the south. For soybean, the dates are June 10 in the north and June 15 in the south (see maps for your county). Acres planted after these dates are still insured, but farmers must notify their crop insurance agents, even if they do not have late and prevented planting coverage. Small areas do not trigger late and prevented planting coverage. The area must exceed 20 acres or 20% of the unit’s acreage to qualify.

Explaining the options for a hypothetical case will help insured farmers understand their options. However, farmers should consult with their crop insurance agent so they clearly understand their specific options and the associated restrictions and implications.

### Assumptions:

You bought crop insurance with a yield history of 160 bu/ac for your corn and 40 bu/ac for your soybeans. With 75% Revenue Protection, your yield guarantees are 120 bu/ac for the corn and 30 bu/ac for the soybeans. Revenue guarantees are 120 bu/ac x $3.57/bu = $428.40/ac and 30 bu/ac x $9.73/bu = $291.90/ac. The final planting dates in your county are May 31 for corn, June 5 corn silage, and June 10 for soybeans. By May 31, you planted 250 acres of corn and by June 10, you planted 150 acres of soybeans, leaving 100 acres unplanted. You trigger Prevented Plant since at least 20 acres or 20% of the insured acres are affected.

### What are Your Options?

1. **Plant corn, corn silage, or soybeans late with a reduced guarantee**
   - a. Corn: guarantee reduced 1% per day for each day after May 31.
   - b. Corn silage: guarantee reduced 1% per day for each day after June 5.
   - c. Soybeans: guarantee reduced 1% per day for each day after June 10
   
   **Example:** Suppose you planted all 100 remaining acres to soybeans on June 17 (7 days late). Your guarantee on these 100 soybean acres would be \((100\% - 7\%) = 93\% \times \$291.90/ac = $271.47/ac \times 100\text{ ac} = $27,147\). The guarantee on the 150 soybean acres planted on time is unchanged.

2. **Take the full Prevented Plant (PP) indemnity equal to 60% of your guarantee.**
   - a. Corn: full PP indemnity = 60% x $428.40/ac = $257.04/ac x 100 ac = $25,704.
   - b. Soybean: full PP indemnity = 60% x $291.90/ac = $175.14/ac x 100 ac = $17,514.

On these acres, you can plant a forage/cover crop (including establish alfalfa), but you cannot harvest or graze the forage/cover crop until after November 1.
3) Take a partial Prevented Plant (PP) indemnity equal to 35% of your full PP indemnity
   a. Corn: partial PP indemnity = 35% x $257.04/ac = $89.96/ac x 100 acres = $8,996.
   b. Soybean: partial PP indemnity = 35% x $175.14/ac = $61.30/ac x 100 acres = $6,130.
   
   On these acres, you can plant any forage/cover crop you want and harvest as you want.

4) Leave the acres uninsured – you pay no premiums for these 100 acres, will receive no indemnities, but have no restrictions on planting & harvesting/grazing a forage or cover crop.

Comments
1) Acreage Limits: When you choose to claim Prevented Plant acres for a crop, your planted acres plus Prevented Plant acres for this crop cannot exceed the maximum acres planted of that crop in any of the last 4 years. In this example, the farmer has already planted 250 corn acres. If the farmer had planted at least 350 corn acres in any of the last 4 years, he could claim up to 100 acres for corn Prevented Plant indemnities. If instead the maximum the farmer had planted was 300 corn acres and 200 soybean acres in any of the last 4 years, he could only claim 50 acres for corn Prevented Plant indemnities and would have to claim 50 acres as soybean Prevented Plant indemnities.

2) Alfalfa Establishment: Growers can establish alfalfa with or without a nurse crop on prevented plant acres (options 2 and 3). If alfalfa is planted by July 1, you can insure its 2018 production with a 2018 Forage Production policy if the stand is adequate on May 24, 2018. If alfalfa is planted August 1 - 24, 2017, you can insure against winter kill with a 2018 Forage Seeding policy written agreement.

3) Yield History Impacts: Late planted crops (option 1) use actual yields for future yield history calculations. Acres claimed for reduced Prevented Plant (option 3) use 60% of the yield history from planted acres for future yield history calculations. Acres claimed for full Prevented Plant (option 2) and uninsured acres (option 4) generate no yield history.

4) Agronomic Considerations: This bulletin only summarizes crop insurance rules – agronomic considerations such as switching corn maturity dates or from grain to silage should be part of the decision. See the UW Extension corn and soybean agronomy web page:

Replant Provisions
If a crop stand is damaged early in the season so that the projected yield is less than 90% of the yield guarantee, a farmer can receive an indemnity for part of the actual cost of replanting. A claim must be filed and an insurance adjuster must inspect the stand. The affected area must exceed 20 acres or 20% of the unit’s acreage. The maximum indemnity is the price election multiplied by the 20% of the yield guarantee, up to 8 bu for corn, 3 bu for soybeans and 1 ton for corn silage. The replanted crop has the same production guarantee as for the original plant date (i.e., no reduction for late planting is imposed).

Replant Example
Suppose a 200 acre unit of corn for grain has a yield guarantee of 150 bu/A x 200 A = 30,000 bu with a $3.57/bu price election. All acres are planted before May 31, but cool wet weather reduces the stand to less than 20,000 plants/A on 80 acres of the unit. The farmer can replant these 80 acres to corn and keep the 150 bu/A yield guarantee, even if the corn is replanted after May 31, and receive an indemnity of up to $2,284.80 (8 bu/A x $3.57/bu price election x 80 acres) towards the actual cost of replanting these acres.
First Generation European Corn Borer

Bryan Jensen, UW Extension and IPM Program

Southern Wisconsin is approaching peak first generation European corn borer flight (600 DD, base 500 F). The best treatment time is usually around 800-1000 degree days. A lot of Wisconsin’s corn will not be attractive for oviposition and/or too small to support survival (< 18 inches extended leaf height). However, scouting would be suggested for those fields which are tall enough be attractive and have an extended leaf height greater than 18 inches.

European corn borer populations were the lowest on record during the 2015 growing season. However, there were locally heavy and economic populations during 2016. Concentrate scouting efforts on the tallest corn in your area. After hatching, larvae will migrate to the whorl to feed. Initial symptoms are small window-pane feeding scars that may not completely perforate the leaf. As larvae develop these holes will penetrate the leaf and appear in a random pattern. Prior to tunneling into the stalk the feeding pattern may appear as transverse holes across the leaf.

To get an unbiased assessment of corn borer populations, determine % of the plants which have feeding damage by observing 10 sets of 5 consecutive plants at random across the field. Pull the whorl leaves from two damaged plants in each of the 10 sets of plants. Count the number of larvae by unrolling these leaves and divide by the number of whorls pulled (20) to determine average number of larvae/infested plant. This information will give you the baseline information needed to calculate and economic threshold.

You may calculate a field specific economic threshold for first generation ECB by using the worksheet found on p. 57 of A3646, Pest Management in WI Field Crops, 2017. It is always a little dangerous to suggest treatment levels for ECB because economic thresholds vary by level of infestation, # larvae/infested plant, selling price, expected yield and applications costs. However, to give you a ballpark estimate, a field with 60% of the plants infested and an average of 1.2 larvae/plant which yields 150 bu/A and projected selling price of $3.80/bu will likely give a $27 loss/acre if your insecticide is 80% effective.
Larvae are only susceptible to insecticide applications while they are feeding within the whorl. This time period is usually in the neighborhood of 7-10 days but depends on weather.

**True Armyworms**

Bryan Jensen, UW Extension and IPM Program

Surrounding states have reported armyworm alerts and damage. Furthermore, DATCP’s WI Pest Bulletin has indicated a moderate flight so far. Although I’ve only received a few phone calls so far, it would be a great time to start spot checking likely areas for damage. Armyworms are often recognized as grass feeders, however, injury can occur to soybeans and stand loss can occur under extreme circumstances.

Armyworm larvae feed on leaves and this feeding will appear to have ragged edges. The migrating moths are most attracted to fields with grassy cover including, wheat, cover crops, emerging weeds and sometimes alfalfa. Larvae are nocturnal and can be difficult to find. Check under leaf litter during the day or you may find them hiding in the whorl of corn plants. However, leaf feeding is usually apparent.

Larvae may grow up to 1 ½ long, however, it is important to find infestations before they reach this size to prevent as much economic damage as possible. Larvae are hairless, have alternating dark and light colored strips, a faint orange strip on each side of the body and a light colored abdomen. Color intensity of these stripes can vary significantly. Their head is tan and has net-like marking on the compound eyes.

In corn and soybeans, damage may with either be uniform, spotty and/or found along field margins. Low infestations in corn (15-20% injured plants) may warrant a revisit because egg hatch may not be a short, well-defined occurrence as you might expect from overwintering insects. If 50% of corn seedlings have injury, control maybe be warranted if larvae are still relatively small which indicates significant feeding may yet to come. Remember, as long as the seed furrow is closed, the growing point is not exposed until V6 and corn can recover. Soybeans may not be a preferred host but are more susceptible to stand loss because growing point(s) are exposed.

Wisconsin Hosts 2017 Manure Expo, August 22-23, at ARS

If you are interested in the latest equipment and technology for professional manure management, plan to attend the 2017 North American Manure Expo on August 22 and 23, 2017. Wisconsin hosts the Expo this year and it will be held at the University of Wisconsin-Madison Arlington Agricultural Research Station.
The 2017 North American Manure Expo will feature tours, field demonstrations, hands-on product and safety education, educational sessions, exhibitor booths, and commercial vendor displays. Tours on August 22 require a $20.00 registration fee. There is no cost to attend any of the Expo events on August 23.

Tours, demonstrations, exhibitors, educational sessions, and sponsorships are nearly finalized. Visit the website http://www.manureexpo.com/ for up-to-date information on all the activities associated with this year’s Expo.

The North American Manure Expo is presented by the Professional Nutrient Applicators Association of Wisconsin, University of Wisconsin Extension – Nutrient Management Team, Annex Business Media, Manure Manager Magazine and is supported in part by a consortium of land grant universities and conservation agencies from across the United States.

For more information about the 2017 North American Manure Expo, please contact George Koepp or Richard Halopka, Columbia County and Clark County Agricultural Agents, respectively, University of Wisconsin-Extension. George: 608-742-9682, george.koepp@ces.uwex.edu; Richard: 715-742-5121, richard.halopka@ces.uwex.edu.

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**Video: Using the roller-crimper system with early planted emerged soybean**

Erin Silva, Organic and Sustainable Cropping Systems Specialist Department of Plant Pathology, University of Wisconsin-Madison

Advantages of planting soybean into boot stage rye, and then crimping 2-3 weeks later over the emerged soybean are demonstrated in the field. Experimental yield increased for the early planted beans versus beans planted later after crimping at anthesis stage of the rye. Planting was easier at rye boot stage before crimping as well.

Interest in organic no-till production continues to grow, not only among organic farmers but also among conventional farmers wanting to integrate cover crops and alternative weed management strategies into their farming strategies.

This video demonstrates some basic components to integrate cover crop based no-till on Wisconsin farms, as well as some specific planting modifications to make the technique more successful.

The picture below shows how a field looks during the growing season with the thick rye mulch providing weed management.

More information about Erin Silva's program - http://www.uworganic.wisc.edu
Wisconsin Winter Wheat Disease Update – June 2, 2017

Damon Smith, Extension Field Crops Pathologist, Department of Plant Pathology, University of Wisconsin-Madison, Brian Mueller, Graduate Research Assistant, Department of Plant Pathology, University of Wisconsin-Madison

Many winter wheat varieties in Wisconsin are headed out and at, or will be at, anthesis (flowering) this weekend. Currently, the Fusarium Head Blight Prediction Center is ranking much of the primary winter wheat growing area of Wisconsin at medium risk with many pockets of high risk for FHB on susceptible varieties (see map below). Warm temperatures and the threat of rain this weekend will make conditions further favorable for FHB. In addition, stripe rust is quickly increasing in many fields on susceptible varieties. I have observed 20% stripe rust severity on flag leaves in several fields with high incidence across those fields.

The primary fungicides for control of FHB are Caramba and Prosaro. These same products are rated as "excellent" on stripe rust. I would urge you to verify anthesis has begun in your field before applying either product. We have observed poor control of FHB where application of these effective fungicides was made before anthesis. In fact, we have observed improved control of FHB and lower levels of DON in finished grain where fungicide application was delayed 4-5 days after the beginning of anthesis, compared to applications at the start of anthesis. Also, remember that application of fungicides should be made no later than 6-7 days after the start of anthesis. After this time, fungicide efficacy on FHB is much reduced. Finally, DO NOT use any fungicide products that contain a strobilurin fungicide after the “boot” stage in wheat. Some studies have demonstrated that using strobilurin fungicides at, or after heading, can result in increased vomitoxin (DON) levels in finished grain.

New Rules for Pesticide Certification and Training

Glenn Nice, PAT Program Manager

A new article that addresses the changes as they relate to the State of Wisconsin Pesticide Certification and Training has been posted on the Pesticide Applicator Training (PAT) website. http://ipcm.wisc.edu/pat/program-info/new-ct/

It will take time before the new requirements are implemented in Wisconsin. States have three years to modify existing state plans to comply with the new requirements, and an additional two years may be granted by the EPA if requested. The Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) is preparing a plan that will have to be accepted by the EPA and then the State Statutes will have to be opened and changed to fit the new C&T rules. So, we have some time before these rules kick in.

Wisconsin crop planting progress reports from the USDA

Paul D. Mitchell, Agricultural and Applied Economics, University of Wisconsin-Madison

Corn planting is at or near 5-yr avg and soybeans are still a little behind that average. Recent good weather for most areas of the state has allowed Wisconsin to make big progress. The United States Department of Agriculture National (USDA) Agricultural Statistics Service issues weekly reports at the website linked below.

https://www.nass.usda.gov/Statistics_by_State/Wisconsin/Publications/Crop_Progress_&_Condition/

As an example, last week’s report is attached as the last page of this newsletter.
LOOKING AHEAD: Viburnum leaf beetle confirmed by UW in Winnebago County

FORAGES & GRAINS: Surveys continue to find variable alfalfa weevil pressure

CORN: Stalk borer larvae expected to begin migrating into corn

SOYBEANS: Soybean aphids now colonizing soybean fields

FRUITS: Codling moth treatment window opening soon

VEGETABLES: Red turnip beetle found in extremely high numbers this week

NURSERY & FOREST: Impatiens downy mildew detected in Sheboygan greenhouse

DEGREE DAYS: Degree day accumulations through June 7, 2017
Planting, Haying Progresses with Favorable Weather

There were 5.1 days suitable for fieldwork for the week ending June 4, 2017, according to the USDA’s National Agricultural Statistics Service. Clear weather and warmer temperatures allowed farmers across Wisconsin to make good progress with fieldwork this week. Though it was cool early in the week, temperatures climbed into the 80s and 90s over the weekend, improving crop conditions. Oats planting was wrapping up, while corn, soybean and vegetable planting surged ahead. Soil conditions improved, allowing farmers to fill in spots that were too wet to plant earlier in the season. Reporters noted that many producers, especially dairies, paused planting and 90s over the weekend, improving crop conditions.

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Topsoil moisture supplies were rated 0 percent very short, 2 percent short, 74 percent adequate and 24 percent surplus. Subsoil moisture supplies were rated 0 percent very short, 1 percent short, 75 percent adequate and 24 percent surplus.

As of June 4, spring tillage was 94 percent complete statewide, equal to the five-year average.

Corn planting was 91 percent complete, 2 days behind the average. Corn emerged was at 68 percent, 8 days behind last year, and 4 days behind the average. Corn condition was 68 percent good to excellent.

Seventy-three percent of the state’s expected soybean acres have been planted, 11 days behind last year, and 4 days behind the average. Thirty-four percent of the state’s soybeans have emerged, 9 days behind last year and 4 days behind the average.

Oats planting was reported as 96 percent complete, 3 days behind the average. Oats emerged was at 87 percent, 10 days behind last year and 4 days behind average emergence. Oats condition was 75 percent good to excellent.

Potato condition was rated 72 good to excellent.

Pasture condition was rated 83 percent good to excellent.

Winter wheat was 29 percent headed, 5 days behind last year. Winter wheat was 71 percent in good to excellent condition statewide, 2 percentage points lower than last week.

The first cutting of alfalfa was reported as 54 percent complete. All hay condition was reported 75 percent good to excellent, 3 percentage points higher than last week.

### Wisconsin Crop Progress as of June 4, 2017

<table>
<thead>
<tr>
<th>Crop and percent of acreage</th>
<th>District average</th>
<th>State average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NW NC NE WC C EC SW SC SE</td>
<td>This week Last week Last year 5-year average</td>
</tr>
<tr>
<td>Percent</td>
<td>Percent</td>
<td></td>
</tr>
<tr>
<td>Alfalfa Hay, First Cutting</td>
<td>47 30 55 54 54 54 57 59 66 57</td>
<td>54 22 67 84 48</td>
</tr>
<tr>
<td>Corn Planted………………….</td>
<td>94 86 89 93 85 85 94 94 89</td>
<td>91 77 100 92</td>
</tr>
<tr>
<td>Corn Emerged………………….</td>
<td>71 64 61 74 65 58 74 71 63</td>
<td>68 47 88 75</td>
</tr>
<tr>
<td>Oats Planted…………………</td>
<td>98 93 98 100 88 93 97 100 100</td>
<td>96 92 100 97</td>
</tr>
<tr>
<td>Oats Emerged…………………</td>
<td>84 81 93 94 73 83 86 99 94</td>
<td>87 81 98 91</td>
</tr>
<tr>
<td>Soybeans Planted…………….</td>
<td>77 66 74 79 71 66 67 78 71</td>
<td>73 45 94 80</td>
</tr>
<tr>
<td>Soybeans Emerged…………….</td>
<td>37 38 34 42 31 32 24 39 26</td>
<td>34 12 71 53</td>
</tr>
<tr>
<td>Spring Tillage……………….</td>
<td>92 92 95 97 91 92 99 94 96</td>
<td>94 89 100 94</td>
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<td>Winter Wheat Headed………..</td>
<td>25 6 9 52 40 25 28 34 38</td>
<td>29 14 53 n.a.</td>
</tr>
<tr>
<td>n.a.=not available</td>
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### Days Suitable for Workfield and Soil Moisture Conditions as of June 4, 2017

<table>
<thead>
<tr>
<th>Item</th>
<th>District average</th>
<th>State average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NW NC NE WC C EC SW SC SE</td>
<td>This week Last week Last Year</td>
</tr>
<tr>
<td>Percent</td>
<td>Percent</td>
<td></td>
</tr>
<tr>
<td>Days Suitable……………….</td>
<td>5.2 3.9 4.9 5.1 5.1 5.2 5.7 4.9 4.7</td>
<td>5.1 3.0 4.0</td>
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</table>

### Topsoil Moisture

<table>
<thead>
<tr>
<th>Item</th>
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</thead>
<tbody>
<tr>
<td>Very Short………………….</td>
<td>0 0 0 0 0 0 0 0 0 0</td>
</tr>
<tr>
<td>Short……………………</td>
<td>1 1 0 4 1 7 0 6 0 2</td>
</tr>
<tr>
<td>Adequate………………….</td>
<td>84 35 47 82 75 72 88 75 82</td>
</tr>
<tr>
<td>Surplus………………….</td>
<td>15 65 49 17 18 28 6 25 18</td>
</tr>
</tbody>
</table>

### Subsoil Moisture

<table>
<thead>
<tr>
<th>Item</th>
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</tr>
</thead>
<tbody>
<tr>
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<td>0 0 0 0 0 0 0 0 0 0</td>
</tr>
<tr>
<td>Short……………………</td>
<td>2 0 0 1 0 0 2 0 0 1</td>
</tr>
<tr>
<td>Adequate………………….</td>
<td>83 35 45 83 80 81 94 73 73</td>
</tr>
<tr>
<td>Surplus………………….</td>
<td>15 65 55 16 20 19 4 27 27</td>
</tr>
</tbody>
</table>
CHIPPEWA-T.P.: Sunny conditions and less than an inch of rain this week allowed a lot of field work to be completed. Warm temperatures moved along crop progress, but also weed growth. Soybean planting is almost complete. Harvest of first crop alfalfa has progressed nicely.

RUSK-S.V.: Only had 1 inch of rain this week so everyone who can is busy in the fields trying to get things done.

ASHLAND/IRON-C.B.: Some nice weather towards the end of the week. Some field activity, as high temperatures with some wind dried some fields out enough to get out and continue tillage/planting activities.

FLORENCE/FOREST-T.B.: Most tillage completed except those areas with heavy soils. Early week rains and heat through the week has hay and pastures looking good.

BUFFALO/PEPIN-S.M.: Much-needed dryer, warmer weather has been welcome this week. Some spotty hail was received in isolated thunderstorms over weekend. Haying and planting is finally being completed.

LA CROSSE-I.H.: Mostly sunny this week, although a little cool until the end of the week. Farmers able to get to the fields and get hay made and more corn and beans planted. Drying topsoil on some of the fields may make it difficult for seed to break through the crust.

WAUPACA/OUTAGAMIE-D.L.H.: Spring planting has wound down with the favorable weather last week. Color of corn and soybeans has improved with the warmer weather. Good progress is being made with alfalfa harvest - the quantity is less than normal as result of the cool spring weather.

CALUMET-K.P.: More rain limited the amount of field work able to be completed - areas of standing water again. We did have a couple days of warmer temperatures and sunshine which has helped - could use a few more of these days.

MANITOWOC-M.R.: Finally had a string of about 5 days of nice weather to get back in the fields to keep working at planting and harvesting first crop hay. Still seems like a fair amount of crops that need to get planted yet.

CRAWFORD-J.B.: Nice weather over the past few days provided area farmers a chance to complete planting corn and go right into planting soybeans. If the weather holds out all planting should be wrapped up by the middle of next week. Many fields in the Kickapoo river bottom continue to have standing water and 2016 corn standing not harvested as a result of last year's flooding, some soybeans as well. Not sure what will happen to those fields. Many area farmers have been cutting first crop hay. If the wind ever dies down, area farmers and agribusinesses will have an opportunity to catch up on much-needed herbicide spraying.

DODGE-M.P.: We finally received a few warm, dry days. A lot of haylage was made and even some dry bales. Producers are scrambling to complete soybean planting before the next round of thunderstorms hit the area. Received another couple of inches of rain over the weekend which will slow things down again for next week.

WALWORTH-N.W.: Amazing what three days of sunshine and warm temperatures can do. A lot of planters were rolling the end of the week trying to make up for lost time. Corn that was planted earlier in May is still behind because of the cold and wet weather from earlier in May.

### Wisconsin Weekly Weather, Selected Cities, Ending as of 7:00 a.m. on June 4, 2017

<table>
<thead>
<tr>
<th>City</th>
<th>Temperature</th>
<th>Growing degree days (modified base 50)</th>
<th>Precipitation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Avg. max.</td>
<td>Avg. min.</td>
<td>High max.</td>
</tr>
<tr>
<td>Eau Claire</td>
<td>75</td>
<td>49</td>
<td>90</td>
</tr>
<tr>
<td>Green Bay</td>
<td>75</td>
<td>51</td>
<td>84</td>
</tr>
<tr>
<td>La Crosse</td>
<td>79</td>
<td>54</td>
<td>97</td>
</tr>
<tr>
<td>Madison</td>
<td>76</td>
<td>51</td>
<td>87</td>
</tr>
<tr>
<td>Milwaukee</td>
<td>77</td>
<td>55</td>
<td>83</td>
</tr>
</tbody>
</table>

1/ Formula used: GDD = (daily maximum (86°) + daily minimum (50°))/2-50°, where 86° is used if the maximum exceeds 86° and 50° is used if the minimum falls below 50°.


Crop Diagnostic Training Center Workshop July 25 at Arlington

The best of all workshops! This year our crop & pest management workshop and diagnostic troubleshooting workshop have been combined into a single day.

The day starts with 2 hours of multi-disciplinary agronomic topics and culminates with 6 separate diagnostic troubleshooting scenarios.

Tuesday – July 25, 2017, Lunch is provided at noon

Tiered fee: $90 before 7/15/17, $100 after 7/15/17

Location: Arlington Ag Research Station

FAST and easy ONLINE registration by credit card at-
https://www.patstore.wisc.edu/ipm/register.aspx

2016 Wisconsin CCA Board Activities

The Certified Crop Adviser (CCA) Program was established in 1992 to provide a benchmark of professionalism for practicing agronomy professionals. It is a voluntary professional enhancement to a person’s career credentials. CCAs have demonstrated they have the commitment, education, expertise, and experience to assist farmers in meeting economic and environmental goals.

In 2016, Wisconsin added 27 new CCA’s to bring the overall total to more than 650 members.

Items Supported by Wisconsin CCA Member Dues in 2016

CCA Judging Competition Sponsorship. Six college and tech school student organizations received sponsorship money to attend national judging contests for more than 40 students.

CCA Summer Internship. Provided work experience for one student at a University of Wisconsin Ag Research
Station.

CCA Exam Scholarships. A total of 21 college and tech school students received scholarships to partially offset the cost of taking the CCA exam.

2016 Wisconsin CCA Board Happenings

Establishment of CCA Exam Committee. A six member committee was established to set exam standards and evaluate questions.

Named Chuck Bolte from Agsource as CCA of the Year.

Recognized CCA’s achieving their 20 year anniversary.

Updated website to add study materials for potential CCA applicants.

New UW-Extension identification guide to toxic plants in forages and pastures available

Mark Renz, UW-Extension Weed Scientist

Madison, Wis. – While most plants are safe for livestock to consume, a few plant species can sicken or even kill animals if ingested. Recognizing poisonous plants and knowing proper livestock management are important steps in minimizing the potential for poisoning according to Mark Renz, University of Wisconsin-Extension weed scientist at UW-Madison.

“We often receive questions about toxic plants, the level of toxicity, and what animals they are toxic to,” Renz said. “In this new identification guide, we have close-up pictures of the plants for easy identification, and detailed information on the most common toxic plants in Midwestern pastures, as well as forage crops.”

In addition to identification information about plants, the guide provides detailed information on what the toxin is, what animal species it is toxic to, where the plant is generally found, what parts of the plant are toxic and how long the toxin persists, and what can be done.

The easy to use, spiral-bound book, Toxic Plants in Midwest Pastures and Forages, is available online at The Learning Store https://learningstore.uwex.edu/. The guide can either be downloaded for free or a hard-copy purchased.

“Toxicity in plants is a complex issue as it can occur throughout the year depending on the plant and environmental conditions. Because of this we encourage landowners and animal owners to inform themselves on plant toxicity so they can make the correct management decision,” Renz warns.

If you suspect plant poisoning in livestock, follow these recommendations:

- Remove animals from where the plants are present and remove any affected feed or forage.
- Contact your veterinarian.
- Survey the area to identify any plants that may be the potential source of toxicity. Use a digital camera to compare the images to online identification databases such as http://weedid.wisc.edu/ or published references. You can also submit unknown images to your county extension agent to confirm their identity.

Planting Date, Maturity, and Temperature Effects on Soybean Seed Yield and Composition

Shawn P. Conley, Soybean and Wheat Extension Specialist, Department of Agronomy, University of Wisconsin, Madison

Soybean maturity selection is an important management decision. Maturity group (MG) zones represent regions where a cultivar is best-adapted without implying that MG-specific cultivars cannot be grown elsewhere (Boerma and Specht, 2004). Most recently, Mourtzinis and Conley (2017) redelineated MG zones across the U.S. using 2005-2015 yield variety trial data. In their study, although the zones were generated using a vast amount of information, the results are restricted to the planting date (PD) range of the variety trials.

>>>Read full article here<<<

Using High-Input Systems for Soybean Management Increases Yield but Not Profitability

Shawn P. Conley, Soybean and Wheat Extension Specialist, Department of Agronomy, University of Wisconsin, Madison
As soybeans finally begin to add trifoliates and begin rapid develop growers will look to get across their fields to apply inputs. Here are a few points to ponder for Midwestern farmers based on our USB funded High Yield Project.

1. V4 applications of nitrogen to soybean provided a +3.9% relative yield change, but a 0 to 5% chance of ROI based on yield levels from 45-75 bu per acre and $9 beans….. i.e. additional nitrogen to soybean does not pay!

2. Lactofen has efficacy on many broadleaf weeds and on white mold….it is not a yield enhancer for Midwestern farmers. We measured a 0% probability of ROI when lactofen was intentionally used to defoliate soybeans and promote branching in Northern and Midwestern soybean fields.

For additional information please review: Using High-Input Systems for Soybean Management Increases Yield but Not Profitability

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**Wisconsin Fruit News – June 9, 2017**


Summer is finally here and things are picking up across the state. We have a full newsletter, so I hope you have time to take a look at it!

[http://go.wisc.edu/143j34](http://go.wisc.edu/143j34)

First brown marmorated stink bug caught in trap

IPM: Cultural controls

Plant Disease Diagnostic Clinic update

Insect Diagnostic Lab update

Phytophthora diseases of berry crops

Water management in strawberries

Cranberry degree-day map and update

Black rot is here

Wine and table grapes developmental stages

Grape insect pest scouting report — Leafrollers

Reduced risk insecticide: Surround

Focus on apple aphids

Rescue me! Late thinning options for apples

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**Veg Crop Updates Newsletter**

**June 10, 2017**

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

Click here>>> [UWEX Veg Crop Updates Newsletter #8](#)

In this issue, the following topics are addressed:

Late blight and early blight disease forecast updates

National late blight updates

National cucurbit downy mildew updates

Considering Phostrol (and other phosphorus acid fungicides) for potato disease control

Potato blackleg- Dickeya updates

For hop growing readers, please note that MI recently reported an uptick in powdery mildew. Here in WI, we have not yet seen powdery mildew, but we did have our first formal report of the disease in the state in 2016 – so we know it is around. Be on the lookout for white, talcum-like colonies on leaves. Downy mildew is still being observed in most parts of the state. A recent presentation on these diseases and fungicide information can be found here.
FRUIT CROPS
Peach, Peach Leaf Curl, Taphrina deformas, Sheboygan

VEGETABLE CROPS
Basil, Bacterial Blight, Pseudomonas sp., McHenry (IL)
Potato, Black Leg, Dickeya dianthicola, Columbia, Waushara
Sage, Bacterial Blight, Gray Mold/Botrytis Blight, Pseudomonas sp., Botrytis cinerea, McHenry (IL), McHenry (IL)

Wisconsin Pest Bulletin, June 15, 2017

Volume 62 Issue No. 8 of the Wisconsin Pest Bulletin is now available at: Read or download the PDF

LOOKING AHEAD: Emergence of apple maggot flies could begin by June 18

FORAGES & GRAINS: Potato leafhopper counts rapidly increasing in second-crop alfalfa

CORN: Peak corn rootworm egg hatch expected in the next two weeks

SOYBEANS: Rose chafers appearing in western Wisconsin soybean fields

FRUITS: Spotted wing drosophila flies captured in survey traps

VEGETABLES: Squash vine borer moths beginning to emerge

NURSERY & FOREST: Assorted observations from this week’s nursery inspections

DEGREE DAYS: Degree day accumulations through June 14, 2017

Follow us
The best of all workshops! This year our crop & pest management workshop and diagnostic troubleshooting workshop have been combined into a single day. The day starts with 2 hours of multi-disciplinary agronomic topics and culminates with 6 separate diagnostic troubleshooting scenarios.

Tuesday – July 25, 2017
Lunch is provided at noon
Tiered fee:  $90 before 7/15/17, $100 after 7/15/17
Location:  Arlington Ag Research Station
CCA CEU’s:  5.0*

Pigweed Species Identification & Control – Mark Renz, Extension Weed Science Specialist
•  Is it pigweed?  Waterhemp? Some other Amaranth species?
•  This session will provide you with the tools to positively identify these troublesome weeds and discuss control options while considering herbicide resistance and recent technologies

Spray Drift Mitigation – Dan Heider, UW Integrated Pest Management Specialist
•  Rain followed by more rain.  When the rain stops, the wind seems to start with few good spray windows between.  Are you confidently spraying on target?
•  Nozzles and drift control additives will be demonstrated so you can really see what’s happening behind the spray boom

Diagnostic Troubleshooting – UW Specialists from multiple disciplines
•  Fine tune your crop diagnostic skills in a fun and interactive setting.  Small groups will rotate through field problems with UW Specialists role playing as farmers.  Through digging up plants, asking questions and consulting references participants will make a diagnosis of the problem being observed and a recommendation for correction.  Each participant will experience 6 separate diagnostic scenarios

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Workshops begin in the Public Events Facility of the Arlington Agricultural Research Station. Be aware that this is not a “traditional” field day. Training sessions are designed to be in-field and hands-on. Therefore we advise that you come prepared for all types of weather.

*CCA CEU’s: Continuing education units/categories are subject to change pending approval from the Certified Crop Advisor Program.
Soybean Flowers, Glyphosate Label, and Wheel Track Damage

We saw the first soybean flowers of the year yesterday at the Arlington Ag Research Station. As we enter the soybean reproductive growth phase there are a few things to keep in mind. The first is that soybean will produce flowers for ~3 to five weeks, depending upon planting date and environment. During that time soybean will abort anywhere from 20 to 80% of the flowers that they produce. Generally it is the first and last flush of flowers produced that are most likely to be aborted.

Next, the timing window for glyphosate applications in our early planted soybean is quickly closing. Glyphosate labels indicate that applications can be made through R2 or full flower. The R3 growth stage begins when one of the four top nodes with a fully developed leaf has a 3/16 inch long pod. Applications made after the R3 stage begins are off-label applications. On average it takes ~4 days to move from R1 (beginning flower) to R2 (full flower) and ~10 days from R2 to the start of R3 (beginning pod).

Last but not least, wheel track damage made from ground applications may start to reduce yield. Sprayer wheel traffic from first flower (R1) through harvest can damage soybean plants and reduce yield (Hanna et al. 2008). Our research suggests that an adequate soybean stand (more than 100,000 plants per acre) planted in late April though mid-May can compensate for wheel tracks made when a field is sprayed at R1. Yield loss can occur, however, when wheel tracks are made at R1 or later in thin soybean stands (less than 100,000 plants per acre) or
late planted soybeans. Regardless of stand, plants could not compensate for wheel tracks made at R3 (early pod development) or R5 (early seed development). The average yield loss per acre is based on sprayer boom width (distance between wheel track passes). In our trials yield losses averaged 2.5, 1.9, and 1.3% when sprayer boom widths measured 60, 90, and 120 foot, respectively. Multiple trips along the same wheel tracks did not increase yield loss over the first trip.

Shawn P. Conley, Soybean and Wheat Extension Specialist, Department of Agronomy, University of Wisconsin, Madison

Wheel track damage to drilled soybean at R1

Insect Notes-June 20, 2017

Bryan Jensen, UW Extension and IPM Program

Armyworms are still being found at treatable levels in some corn fields. A common scenario has been corn planted after a grass cover crop. Other possibilities include spring grassy weeds and corn no-tilled into alfalfa sod. Continue to watch these fields and make special note of larval size. Once the “worms” reach the 1-1¼ size range there is unlikely to be significant “preventable” damage that would pay for an insecticide and its applications costs.

Black Cutworm calls have slowed down and most of the corn is beyond the stage where damage is likely. However, late planted corn may still be at risk. Remember the treatment decision should focus on the potential for damage not based on damage already done. Once the corn reaches V4 and/or cutworms reach the 6-7 instar stage future damage will be minimal. A head capsule gauge and table which reflects damage potential vs instar can be found on page 56 of A3646, Pest Management in WI Field Crops.

There haven’t been any reports of significant European corn borer damage yet, however, most of the early planted corn is now at attractive stage and at a stage when larvae can survive (>18 inches extended leaf height). Spot checking likely fields would be a good idea, especially if significant damage was noticed in the area last year.

Potato leafhoppers may have benefited from the recent hot weather. Start spot checking established stands. New seedings require special attention for potato leafhoppers. These stand do not get the benefit of a short cutting schedule that establish stands receive.

I would expect Japanese beetle adults to be emerging soon. I have no guesses how heavy populations might be, however, this is one insect pest that may have benefited from our warm winter. Adult emergence will happen over a period of time so continue to monitor soybeans fields for defoliation and corn when it starts to pollinating. Adults Japanese beetles are clumped in their distribution so through scouting is needed. A potential Japanese beetle look-a-like, the rose chafer, has emerged and is commonly found on sandy soils. Although soybean defoliation is possible, significant economic defoliation is unlikely.

Dicamba and Soybeans

Daniel H. Smith, Richard Proost, Nutrient and Pest Management Program, University of Wisconsin-Madison

New seed technology has expanded the usefulness of the herbicide dicamba. This also means more potential for non-tolerant soybeans and sensitive crops to be exposed to dicamba drift, volatilization, and spray contamination. New formulations of dicamba greatly lesson risk, however, only if the herbicide label is followed. The herbicide label is the law and must be read, understood, and followed. These new formulations of dicamba have very
strict label restrictions and requirements not often seen. These include, but are not limited to: spray tip selection, weather conditions, spray tank mixes, buffer strips, sprayer clean-out procedures, and maximum weed height at time of application. As farmers begin to utilize this new technology this classic publication details dicamba injury and mimics on soybean:


Printed copies are also available through the NPM Program.

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**Veg Crop Updates Newsletter**

**June 23, 2017**

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

Click here>>> UWEX Veg Crop Updates Newsletter #9

In this issue we address:

late blight and early blight disease threshold/forecast updates (several locations at/over threshold for late blight DSVs)

national late blight updates

national cucurbit downy mildew updates

note from Dr. Yi Wang – New UW-Horticulture Vegetable Production Specialist

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**Wisconsin Fruit News-June 23, 2017**

Here is the next issue of the Wisconsin Fruit News. We hope you enjoy!

http://go.wisc.edu/101k8v

* New SWD publication available!
* IPM: Host plant resistance
* Plant Disease Diagnostic Clinic update
* Insect Diagnostic Lab update
* Harvest schedule and sanitation for managing SWD
* Cranberry degree-day map and update
* Grape insect scouting report — rose chafer
* Wine and table grape developmental stages
* Nutrient management for apple orchards – an update
* Potato leafhopper in apple
* Verticillium on stone fruits
* Reduced risk insecticide: Intrepid

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**Wisconsin Pest Bulletin 6/23/17**

Krista Hamilton, Entomologist, WI Dept of Agriculture, Trade and Consumer Protection

Volume 62 Issue No. 9 of the Wisconsin Pest Bulletin is now available at:

Read or download PDF

**INSIDE THIS ISSUE**

**LOOKING AHEAD**: Annual flight of western bean cutworm moths beginning

**FORAGES & GRAINS**: Potato leafhopper counts near threshold levels

**CORN**: First-generation European corn borer larvae appearing in corn

**SOYBEANS**: Rose chafers and sand chafers causing light defoliation

**FRUITS**: Signs of codling moth injury becoming evident on apples

**VEGETABLES**: Squash vine borer egg laying underway

**NURSERY & FOREST**: Updates from this week’s nursery inspections

**DEGREE DAYS**: Degree day accumulations through June 21, 2017
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 June 17, 2017 through June 23, 2017.

<table>
<thead>
<tr>
<th>PLANT/SAMPLE TYPE, DISEASE/DISORDER, PATHOGEN, COUNTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIELD CROPS</td>
</tr>
<tr>
<td>Soybean, Charcoal Rot, Fusarium Seedling Blight, Macrophomina phaseolina, Fusarium sp., Grant County, Grant County</td>
</tr>
<tr>
<td>FORAGE CROPS</td>
</tr>
<tr>
<td>Alfalfa, Aphanomyces Root Rot, Fusarium Root Rot, Phytophthora Root Rot, Pythium Root Rot, Rhizoctonia, Root Rot, Aphanomyces euteiches, Fusarium sp. Phytophthora sp. Pythium sp. Rhizoctonia sp., Calumet County, Calumet County, Calumet County, Calumet County, Calumet County</td>
</tr>
<tr>
<td>FRUIT CROPS</td>
</tr>
<tr>
<td>Apple, Anthracnose, Apple Scab, Coniothyrium Leaf Spot, Discosia Leaf Spot, Root/Crown Rot, Colletotrichum sp. Venturia inaequalis Coniothyrium sp. Discosia sp. Cylindrocarpon sp., Dane County, Dane/Portage County, Dane County, Dane County, Iowa County</td>
</tr>
<tr>
<td>Apricot (Manchurian), Bacterial Canker, Brown Rot, Pseudomonas syringae Monilinia sp., Brown County, Brown County</td>
</tr>
<tr>
<td>Blueberry, Phomopsis Canker, Root/Crown Rot, Phomopsis sp. Rhizoctonia sp., Columbia County, Columbia County</td>
</tr>
<tr>
<td>Cherry (‘Carmine Jewel’), Bacterial Canker, Brown Rot, Pseudomonas syringae Monilinia sp., Brown County, Brown County</td>
</tr>
<tr>
<td>Cherry (Nanking), Brown Rot, Monilinia sp., Brown County</td>
</tr>
<tr>
<td>Plum (Red), Bacterial Canker, Brown Rot, Pseudomonas syringae Monilinia sp., Brown County, Brown County</td>
</tr>
<tr>
<td>Plum (Yellow), Bacterial Canker, Brown Rot, Pseudomonas syringae Monilinia sp., Brown County, Brown County</td>
</tr>
<tr>
<td>Rhubarb, Anthracnose, Pseudomonas Leaf Blight, Colletotrichum sp., Pseudomonas sp., Portage County, Portage County</td>
</tr>
<tr>
<td>VEGETABLE CROPS</td>
</tr>
<tr>
<td>Celery, Cucumber Mosaic, Tobacco Mosaic, Cucumber mosaic virus, Tobacco mosaic virus, Marathon County, Marathon County</td>
</tr>
<tr>
<td>Pea, Aphanomyces Root Rot, Aphanomyces euteiches, Waushara County</td>
</tr>
<tr>
<td>Snap Bean, Fusarium Root Rot, Pythium Root Rot, Rhizoctonia Root Rot, Fusarium sp., Pythium sp., Rhizoctonia sp., Waushara County, Waushara County, Waushara County</td>
</tr>
</tbody>
</table>

Follow us

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- Is it pigweed? Waterhemp? Some other Amaranth species?
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FAST and easy ONLINE registration by credit card at- https://www.patstore.wisc.edu/ipm/register.aspx
or if NOT using credit card online: Mail registration form below to Dan Heider, UW-IPM Program, 1575 Linden Drive, Madison, WI 53706

Name: _____________________________
Address: ___________________________
Affiliation: _________________________
Daytime telephone: ___________________
email: ______________________________

Diagnostic Training Center Workshop, July 25 ..... $90 / $100 ($100 if registration received after July 15)
Checks payable to: University of Wisconsin-Extension
solution remained in the tank, sump, or lines, this amount would be sufficient to contaminate the next 500 gallon load at the 0.01% level.

It’s important to note that even spray tanks cleaned using common procedures (rather than according to more thorough label directions) can leave measurable concentrations of dicamba. Weed researchers at UW tested a sprayer for residues after spraying dicamba. The tank was drained, washed with an ammonia-water solution which was also flushed through the booms, and re-filled with water. The water from the spray tank and water sprayed out of the boom was sampled and analyzed for dicamba (Table 1). The dicamba concentration in the spray tank’s water was extremely low, but the concentration may have been sufficient to cause minor injury symptoms. The water from the spray boom contained a higher concentration of dicamba which might cause moderate soybean injury. This concentration suggests the boom was not adequately cleaned.

Similarly, small amounts of dicamba from the improper use of an old jug to shuttle phosphate or adjuvants can contaminate spray solutions. The reuse of old herbicide containers in this manner is illegal. Only 0.05 oz of Banvel or Clarity would contaminate a 500-gallon load (calibrated to spray 15 GPA) at the 0.01% level. A non-rinse jug could certainly retain this small amount of dicamba.

Dicamba Injury and Soybean Yield Loss

Without a doubt, extremely low dicamba concentrations can cause soybean injury symptoms. Minor symptoms, while often causing concern, do not result in yield loss. As concentrations increase, injury symptoms and the potential for soybean yield loss also increase. The level of yield loss depends on the amount of dicamba that reached the soybean and the plant’s growth stage. It’s impossible to state the exact dicamba concentration that causes yield loss due to soybean’s ability to recover from injury, differences among varieties, and variation in growing conditions among years. Yield is most often lost when severe injury symptoms persist through the growing season.

In general, experiments have shown that soybeans recover from minor to moderate dicamba injury in the vegetative stage without suffering yield loss. However, yield loss is more likely to occur when soybeans are exposed to dicamba after they begin to bloom. Fortunately, soybeans are more frequently exposed to dicamba in the vegetative stage than in the reproductive stage.

Table 1. Dicamba residues detected in water after a sprayer was drained, washed and flushed with an ammonia-water solution, and re-filled with water.

<table>
<thead>
<tr>
<th>Water source</th>
<th>Dicamba (ppb)</th>
<th>Percent of use rate*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spray tank</td>
<td>945</td>
<td>0.02%</td>
</tr>
<tr>
<td>Spray boom</td>
<td>24,800</td>
<td>0.63%</td>
</tr>
</tbody>
</table>

*Based on 1 pt/a Banvel or Clarity applied in 15 GPA water.

The third source of dicamba movement to soybeans is contamination of spray equipment. The most frequent source is the use of previously contaminate spray equipment. When spray equipment is used on one crop and then moved to another crop, soybeans can be exposed to dicamba. The risk of soybean injury is greatest when the previous crop has dicamba in the spray tank. The risk of soybean injury is also greatest when the spray equipment is used on a crop that is sensitive to dicamba. This is when dicamba volatilizes to a vapor. All dicamba formulations volatilize, but some volatilize more than others. For example, in a study where field corn was sprayed to test dicamba volatility, the dimethylamine salt of dicamba (formulation used in Banvel) injured adjacent soybeans about twice as much as when the sodium salt of dicamba (formulation used in NorthStar).

Weather conditions play an important role in increasing or decreasing volatilization. For example, volatilization and potential for vapor movement increases at high temperatures and low relative humidity. However, as little as 0.04 inch of rainfall can dramatically decrease volatilization by washing dicamba off corn and weed leaves and onto the soil where it is less likely to volatilize. Overall, the potential for dicamba vapor movement is greatest under hot, dry conditions during and after the application.

Contaminated Spray

The third source of dicamba movement to soybeans is contaminated spray. This may occur from a contaminated spray tank, make-up water or nurse tank, transfer hoses, measuring containers, screens with residues, or re-used jugs. It has been reported that as little as 0.01% contamination with dicamba can cause minor leaf puckering on soybean. To illustrate how small this amount is, consider a 500-gallon spray tank that applied Clarity at 1 pt/a. If 6.4 oz (3/4 cup) of this spray contaminates 500 gallons, the contamination level is 0.01% (Table 1). Dicamba residues detected in water after a sprayer was drained, washed and flushed with an ammonia-water solution, and re-filled with water.

This publication is available from the NPM Program, 608-265-2660, or on the web at http://ipcm.wisc.edu to download. Before publicizing, please call for publication availability.

Printing of this publication was funded by the Wisconsin Soybean Marketing Board.

References to pesticide products in this publication are for your convenience and are not an endorsement of one product over other similar products. An EEO/Affirmative Action employer, the University of Wisconsin-Extension, provides equal opportunities in employment and programming, including Title IX and ADA requirements.

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Soybean

Dicamba

Corn

Dicamba

Corn

Soybean

The Spray Drift Task Force reported that drift from 8004 flat fan nozzles at a 20 inch height with 40 psi and an 8 mph wind was about 0.5% at 25 ft, 0.2% at 100 ft, and 0.125% at 200 ft. This level of drift may not be noticeable with many herbicides, but dicamba drift at any of these levels can cause soybean injury. In the studies, drift was greatly increased with higher boom heights or smaller droplet sizes. It is impossible to eliminate tiny drift-prone droplets, but they can be minimized with proper application techniques for correct boom height, spray pressure and nozzle selection.

Dicamba Vapor

A second source of dicamba movement from corn fields is when dicamba volatilizes to a vapor. All dicamba formulations volatilize, but some volatilize more than others. For example, in a study where field corn was sprayed to test
**Dicamba Injury Symptoms**

Dicamba symptoms appear on the soybean leaves that grow after the exposure occurs. As a result, symptoms are often not noticed for 7 to 14 days. Fully developed leaves on the plant typically do not exhibit symptoms. Usually, the next four leaves that develop after exposure are injured the most. Then, most of the final leaves grow to near full size.

On Fig. 1, trifoliate leaves 1-2 had grown before being exposed and are not injured. Trifoliate leaves 3-6 grew after the exposure and are injured. Leaves developing after the 6th trifoliate should be close to normal size and shape (7).

**Dicamba Injury Mimics**

Other growth regulating herbicides such as 2,4-D and clopyralid can cup, pucker or strap soybean leaves.

Other mimics do not cause the same pattern on the plant (four or five puckered leaves followed by recovery) or leaf symptoms (injury concentrated toward the leaf tip) as dicamba.

Contact soybean herbicides like Cobra or Flexstar can cause the first leaf (1) that expands after spraying to crinkle. However, the next leaf to grow (2) is not injured. Dicamba does not cause leaf burn. See Fig. 8, to the right.

Fig 2: You may see a slight crinkle of leaf tips at low doses.

Fig 3: Leaves can cup up or down.

Fig 4: You may see severely puckered leaves with blunt leaf tips. Leaf tips may appear light colored due to dense covering of hairs and unexpanded cells.

Fig 5: Upper leaves may appear strap-shaped.

Fig 6: The stem can twist, swell, and split at high doses. Axillary branches often grow to compensate for the damage, but will have puckered leaves.

Fig 7: Damaged pods when plants were exposed during pod set.

Fig 9: Leaf cupping was caused by carryover of clopyralid, an ingredient in Hornet.

Fig 10: Herbicides like Dual II Magnum, Outlook, or Intrro with cold, wet soil can cause a drawstring appearance, where the leaf tip is pulled in. New growth is normal.

Fig 11: Heavy soybean aphid feeding can cause leaf cupping.

Fig 12: Bean pod mottle, soybean mosaic, and tobacco streak viruses can cause downward cupped soybean leaves.

Fig 13: Bean pod mottle and soybean mosaic viruses can cause a bumpy appearance on leaves. Some viruses also cause a yellow blotchy appearance.

Fig 14: These upward cupped leaves are similar to soybean dwarf virus symptoms.
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Fig 13: Bean pod mottle and soybean mosaic viruses can cause a bumpy appearance on leaves. Some viruses also cause a yellow blotchy appearance.

Fig 14: These upward cupped leaves are similar to soybean dwarf virus symptoms.
dicamba volatility, the dimethylamine salt of dicamba (formula used in Banvel) injured adjacent soybeans about twice as much as when the sodium salt of dicamba (formula used in NorthStar).

Weather conditions play an important role in increasing or decreasing volatilization. For example, volatilization and potential for vapor movement increases at high temperatures and low relative humidity. However, as little as 0.04 inch of rainfall can dramatically decrease volatilization by washing dicamba off corn and weed leaves and onto the soil where it is less likely to volatilize. Overall, the potential for dicamba vapor movement is greatest under hot, dry conditions during and after the application.

Contaminated Spray

The third source of dicamba movement to soybeans is contaminated spray. This may occur from a contaminated spray tank, make-up water or nurse tank, transfer hoses, measuring containers, screens with residues, or re-used jugs. It has been reported that as little as 0.01% contamination with dicamba can cause minor leaf puckering on soybean. To illustrate how small this amount is, consider a 500 gallon spray tank that applied Clarity at 1 pt/a. If 6.4 oz (3/4 cup) of this spray (original formulation used in Banvel) was introduced into the 500 gallon spray tank, it would be sufficient to contaminate the next 500 gallon load calibrated at 1.2 gpa. Without a doubt, extremely low dicamba concentrations can cause soybean injury. Minor symptoms, while often causing concern, do not result in yield loss. As concentrations increase, injury symptoms and the potential for soybean yield loss increase as well. The level of yield loss depends on the amount of dicamba that reached the soybean and the plant’s growth stage. It’s impossible to state the exact dicamba concentration that causes yield loss due to soybean’s ability to recover from injury, differences among varieties, and variation in growing conditions among years. Yield is most often lost when severe injury symptoms persist through the growing season.

In general, experiments have shown that soybeans recover from minor to moderate dicamba injury in the vegetative stage without suffering yield loss. However, yield loss is more likely to occur when soybeans are exposed to dicamba after they begin to bloom. Fortunately, soybeans are more frequently exposed to dicamba in the vegetative stage than in the reproductive stage.

Every year a small percentage of Wisconsin’s soybean fields show injury symptoms generally described as “leaf puckering.” Many factors can cause leaf puckering. Some causes are soybean aphids, plant viruses, and injury from growth regulator herbicides like dicamba. A number of commonly used corn herbicides contain dicamba including Banvel, Celebrity Plus, Clarity, Distinct, Marksman, NorthStar, Sterling, and Yukon. Three common ways that dicamba can reach a soybean field are as spray particle drift, vapor movement, or by a contaminated sprayer. Investigations of soybean leaf puckering have often found the injury was caused by dicamba. Clearly, dicamba is not a soybean herbicide. However, it is found in many herbicides applied to corn fields, which may be near soybean fields.

Spray Drift

An important source of dicamba movement to soybean is spray particle drift. Droplet size plays a major role in particle drift. Small droplets take longer to reach the ground, increasing their susceptibility to drift. For example, a droplet from a fine spray (100 microns) takes 10 seconds to fall 10 feet whereas a droplet from a coarse spray (400 microns) takes only 2 seconds. Add a 3 mph wind, and the fine droplet will drift 44 feet while the coarse droplet will drift only 9 feet.

Dicamba injury to soybeans

This publication is available from the NPM Program, 608-265-2660, or on the web at http://ipcm.wisc.edu to download. Before publicizing, please call for publication availability.

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References to pesticide products in this publication are for your convenience and are not an endorsement of one product over other similar products. An EEO/Affirmative Action employer, the University of Wisconsin-Extension, provides equal opportunities in employment and programming, including Title IX and ADA requirements.

Authors: Richard Proost is a senior outreach specialist for the Wisconsin Nutrient and Pest Management (NPM) Program. Chris Boerboom is an Extension Weed Scientist and Professor in the Department of Agronomy, University of Wisconsin-Madison. Layout: Roger Schmitt is a graphics artist for NPM.

NPM Nutrient and Pest Management
University of Wisconsin-Madison

View a photo gallery on the next page!
It’s rained again, what should I do about nitrogen?

Carrie Laboski, Professor and Extension Soil Fertility/Nutrient Management Specialist, UW-Madison

With continued precipitation and water lying on fields in many areas, growers are becoming concerned about nitrogen loss. This article will explain how to determine if N loss from excessive rainfall has occurred and what corrective measures may be taken.

Once N is in the soil, nitrate is the form of N that can be lost via leaching or denitrification. Nitrogen in the form of ammonium or organic-N will not be lost. The first step is to determine how much of your applied N may be nitrate. It takes 1 to 2 weeks for ammonium forms of nitrogen to transform to nitrate, while it takes 1.25 to 2.5 weeks for urea, and 3 to 8 weeks for anhydrous ammonia. Urea ammonium nitrate, UAN (28% or 32%), is 50% urea, 25% ammonium, and 25% nitrate. This means that 25% of the N applied in UAN may be lost immediately.

Nitrate leaching will occur when precipitation (or irrigation) exceeds the soil’s ability to hold water in the crop root zone. Leaching is a much bigger issue on sandy, coarse-textured soils that typically hold 1 inch of water per foot of soil compared to medium- and fine-textured soils that hold 2.5 to 3 inches of water per foot of soil. To determine if nitrate could leach out of the root zone, compare the rainfall totals in your area to the number of inches of water that your soil can hold in the crop root zone.

Losses of N through denitrification can occur on medium- and fine-textured soils when the following conditions are present: 1) N is in the nitrate form. 2) The soil is saturated with low oxygen content. A glistening soil surface can indicate soil saturation. The longer the soil is saturated the more N may be lost. 3) Denitrification proceeds faster on warmer soils, especially when soil temperatures are greater than 75°F. The following is an example of how length of time the soil is saturated and soil temperature impact N loss. When soil temperature is 50°F, 3% of the nitrate may be lost when the soil is saturated for 4 days compared to 6% lost when saturated to 10 days. By comparison, when the soil temperature is 75°F, 20% of the nitrate is lost after 4 days of saturation and 43% is lost after 20 days of saturation.

Keep in mind that soil saturation causes physiological damage to a corn crop. Bob Nielsen from Purdue explains that young corn can survive 4 days of ponding if temperatures are below the mid-60's °F, but if temperatures are over the mid-70's °F, then corn survival will be less than 4 days. Thus, depending on the temperature it may not matter how much N has been lost, the corn crop may never fully recover even if supplemental N is applied.

By assessing soil texture and drainage, form of N applied, time between N application and heavy rainfall(s), you can make an educated guess about if and how much N may have been lost. For a more detailed explanation of this please read: http://bit.ly/2teVpRt
If all or most of your N for corn is coming from manure and/or a forage legume, then the PSNT can still be used to estimate N credits. Note, when average May-June soil temperatures are more than 1°F below the long-term average, the N credit is often underestimated and book value estimates of credits are more reliable. The PSNT is not suggested for use on sandy soils. For more details on how to use the PSNT see UWEX Publication A2809 Nutrient application guidelines for field, vegetable, and fruit crops in Wisconsin (http://learningstore.uwex.edu/assets/pdfs/A2809.pdf).

Where the entire crop N requirement has not yet been applied, sidedress or other postemergence applications should contain the balance of the crop N requirement. Additional N to replace 25 to 50% of the fertilizer N that was lost could be applied.

If all of the N was applied prior to the heavy rainfall, try to determine how much N loss may have occurred. The next step is to decide whether or not you need or want to apply supplemental N fertilizer to your corn crop. When making this decision, compare the amount of N loss (in lb N/a) that you think may have occurred to UW’s price adjusted corn N rate guidelines at several different N to corn price ratios. (See UWEX publication A2809 for details).

For each N:corn price ratio, UW guidelines have a target N rate, the maximum return to N rate (MRTN) and a range of N rates that produced profitability within $1/a of the MRTN. The profitable range of N rates will typically produce a yield that is more than 95% of maximum yield. Yield at the MRTN rate is 98 to 99% of maximum yield. Remember maximum yield is not the most profitable yield. Based the estimated amount of N loss, as well as your cost of production, you may not want to replace all of the lost N.

Options for applying supplemental N when it is needed include traditional sidedressing, late/pre-tassel applications, or fertigation. UAN solutions can be applied as a surface band or as a broadcast spray over the growing crop. Dry N fertilizers (urea, ammonium sulfate, or ammonium nitrate) can also be broadcast applied to the crop. Leaf burning from solution or dry broadcast applications should be expected. Applying the dry materials when foliage is dry will help minimize burning. Broadcast N rates should be limited to 90 lb N/a for corn with 4 to 5 leaves and to 60 lb N/a for corn at the 8-leaf stage. Under N deficient conditions, corn will respond to supplemental N applications through the tassel stage of development if the N can be applied. Recent research conducted at Marshfield, WI showed that 40 lb N/a as UAN applied 7 to 10 days prior to tassel was successful at rescuing yield, when preplant applied N was lost because of wet soil conditions.

Cover crops following wheat or other small grains – Selection and management guidelines

By Kevin Shelley, UW Nutrient and Pest Management Program

Following harvest of winter wheat or other small grains in Wisconsin, if not planted to alfalfa, these fields are often left fallow. However, with more than 40 percent of the growing season remaining, planting a cover crop may be a good option. While the economics may not always be clear, many farmers are looking to cover crops to keep the soil covered, suppress some of the weeds that may otherwise grow, recycle and/or fix nutrients and improve soil health, and functioning with additional organic matter. Producing supplemental forages, managing field nutrient budgets and meeting conservation requirements are other objectives for which cover crops can provide value.

The choice of which cover crop(s) depends on a farmer’s objectives and needs and also the farm’s capabilities in terms of planting, management and termination. The cost and availability of good quality seed, versus anticipated benefits, are other factors to consider. Below are a few of the tried and true options for use in most parts of Wisconsin. All can be seeded with light tillage or no-till planting. However, good seed to soil contact at the appropriate depth for the species is essential for good germination and establishment.
Spring cereal grains, oats or barley can provide reliable mid-late summer cover and optional forage potential. They will grow rapidly in late summer and continue until a hard freeze. They will usually not over-winter in Wisconsin. These crops are often the best choice as a sequentially seeded soil cover or if fall-harvested forage is the main goal. They are more forgiving of temporary dry conditions than legume covers. Oats and barley have had equal yields in fall forage trials, 1-3 tons of dry matter (TDM) per-acre, with spring triticale slightly lower.

Winter rye can be planted August-September for a late summer and over-winter cover. Stem elongation will not occur without vernalization (cold temperatures). Planted in August, rye will produce a thick cover but usually less than one TDM biomass before winter dormancy. It will grow rapidly in early spring. Rye as a cover crop should be terminated by late April before it grows too large and at least two weeks prior to planting if followed with corn.

Annual ryegrass (ARG) is actually a southern-US adapted winter annual. It is considered not cold tolerant but will sometimes over-winter in Wisconsin with mild conditions. It has rapid growth with good biomass production when summer seeded on most soil types. It has a shallow, fibrous root system desirable for erosion control. ARG can be a good compliment for brassicas and/or annual clover. However, although a somewhat popular and economical cover crop option, planting ARG is somewhat discouraged due to concerns with its potential to become a difficult to control weed. It can be a prolific seed producer, even in the seeding year, and several glyphosate resistant biotypes have been identified. If it over-winters, it can be difficult to control with herbicides.

Legumes such as berseem clover, crimson clover or field pea (annuals) as well as medium red clover (perennial) will accumulate biologically-fixed nitrogen (N) as they grow. The N is released back into the soil, becoming available for next year’s crop, after the legume plants die or are terminated. All are good choices for a wheat to corn grain crop rotation. Clovers may also be harvestable as forage by mid-late September.

The annual legumes will grow quickly when planted in mid-summer if moisture is sufficient. Berseem and crimson clovers may produce up to 2 TDM per-acre, but 1-1.5 TDM is more common. Research data on N credits is limited. A two-year UWEX field trial in Sheboygan County, Wisconsin has shown either a small credit and/or a 10 bu/acre corn yield increase each subsequent year. Berseem clover has a more upright growth habit and is better suited to mechanical forage harvest. Crimson has lower, more prostrate growth and is often used for winter grazing in southeastern US. If weed pressure is high, it may be advantageous to plant annual clovers in a mixture with oats.

Medium red clover (MRC) can be seeded after wheat harvest but is best when companion seeded early in the spring. A common method for MRC establishment is frost seeding, or broadcast seeding into fall-established wheat early the following spring. Early-planted MRC will normally yield more biomass and creditable N (60-80 lbs/acre) than sequentially seeded annual legumes. As a perennial, with vigorous growth potential the following spring, termination of MRC is best started, chemically or with tillage, in the fall.

Field pea is a large-seeded, cool season annual, best companion-seeded with a spring cereal grain to encourage climbing and minimize lodging. Pea-small grain mixtures can also be harvested as forage, with similar yield, but slightly higher forage quality and palatability than small grain forage alone. Field peas, however, provide only a minimal N credit to a subsequent crop and will increase the cost of the seed mix.

For more complete management and selection information on these and other mid-summer cover crop options, including brassicas (radish, turnips and rapeseed) and species mixtures, see the UW Extension Cover Crop Workgroup’s website, Cover Crops in Wisconsin at http://fyi.uwex.edu/covercrop/. From the home page, click on the Selecting Cover Crops for WI tab and then on Wheat.

Non-Nodulating Soybean

Non-Nodulating Soybean in 2015 and Again in 2016 and Again in 2017

Shawn Conley, WI State Soybean and Wheat Extension Specialist

I have received a deluge (pun intended) of questions regarding the overall lack of soybean nodulation and general pale green coloration of the crop. As a doctor…well Ph.D….I prescribe less rain, sunshine, and call me in two weeks if the problem still exits…Outside of this obvious issue here are the four most common questions I have received and my responses for your consideration.
1. Why is nodulation such a problem this year? Abiotic stress such as low pH (≤ 6.0), saturated or droughty soils and cool soil temperatures can negatively impact nodulation (Valentine et al. 2011). Duzan et al. (2004) reported that root hair deformations (a physiological precursor to rhizobia infection and nodulation) was 64 and 82% of the control when rhizosphere (root zone) temperatures were 59 and 63 degree F when compared to 77 degrees F. This suggests that the cool soil temperatures we have been experiencing have likely limited the infection sites available for nodulation to occur. This effect has likely been exacerbated in no-till or compacted conditions. In short less nodulation sites on the roots means increased likelihood for less nodules.

2. I double inoculated my soybeans on virgin ground and my nodule count is really low? First, please refer to #1 above regarding abiotic stress on soybean nodulation. Secondly remember to read and follow the application, compatibility, and planting timing of inoculants. In reading through various inoculant labels today, I saw everything from ‘not tested’ to ‘not compatible to plant within hours to weeks to months of application’ Lastly remember there is a poor correlation between nodule number and N2 fixation, so don’t get overly concerned about nodule count; it is nodule efficiency that matters and you can’t measure that by counting. In short, read the labels and make sure everything is compatible and your application and planting window is adequate prior to purchasing the product.

3. How long will soybeans continue to put on new nodules? Dr. Purcell indicated that they can measure very active N2 fixation almost until the end of seedfill (personal communication). Given the normal life span of an active nodule is 4-5 weeks, this would suggest that soybean will continue to put on new nodules (if the environment is conducive and rhizobia are present) until R6 soybean (late pod fill).

4. Should I apply nitrogen to these poorly nodulating soybeans, and if so, how much? My general answer is no and none. First of all, the application of nitrogen to soybean beyond a “starter” rate (≤~30 pounds) will lead to a rapid and dramatic inhibition of N fixation (Sinclair, 2004). Though it does not appear that the applied nitrogen is directly damaging to the N fixation machinery (nodules), it will reduce or stop fixation. If the soil NO3 levels drop, then N fixation can resume in about a week (Sinclair, 2004). Over-application of N will shut down whatever rhizobia is actively working. Furthermore, our 2014 and 2015 data shows that a soybean plant takes up 3.75 pounds of N in above-ground tissue per bushel of grain. So a 80 bu/a crop removed 302 pounds of N/a. This does not account for below-ground uptake or nitrogen loss and efficiency from the applied nitrogen. In short, that is tough math to get a positive ROI on.

Literature cited:

Dr. Larry Purcell (personal communication 7/16/15)


**Plant Disease Diagnostic Clinic (PDDC) Update, 6-29-17**

Plant Disease Diagnostic Clinic (PDDC) Update, 6-29-17

Posted on June 30, 2017 by rwschmidt

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 June 24, 2017 through June 30, 2017.

**FIELD CROPS**
Wheat, Stripe Rust, Puccinia striiformis, Dane

**FRUIT CROPS**
Apple, Phomopsis Canker, Phomopsis sp., Winona (MN)
Cherry, Bacterial Canker, Pseudomonas syringae, Dane
Cherry, Phomopsis Canker, Phomopsis sp., Dane
Pear, Pear Scab, Venturia pirina, Outagamie
Strawberry, Botrytis Fruit Rot, Botrytis cinerea, Clark
Strawberry, Tan-Brown Rot, Hainesia lythri, Clark
VEGETABLE CROPS
Bean (Pole), Rust, Uromyces appendiculatus, Brown Potato, Black Leg, Dickeya dianthicola, Portage Pepper, Fusarium Stem Rot, Fusarium sp., Washburn Pepper, Pythium Stem Rot, Pythium sp., Washburn Tomato, Myrothecium Leaf Blight, Myrothecium sp., Portage

SOIL
Alfalfa Soil, Aphanomyces Root Rot/Seedling Blight, Aphanomyces euteiches race 2, Green

Vegetable Crop Update 10, June 23, 2017
Amanda Gevens, Associate Professor & Extension Specialist, Potato & Vegetable Pathology, Plant Pathology Department, University of Wisconsin-Madison

Newsletter No 10 June 23, 2017
• late blight and early blight disease threshold/forecast updates (several locations at/over threshold for late blight DSVs)
• national late blight updates
• national cucurbit downy mildew updates

Wisconsin Pest Bulletin 6/29/17
Krista Hamilton, Entomologist, WI Dept of Agriculture, Trade and Consumer Protection

Volume 62 Issue No. 10 of the Wisconsin Pest Bulletin is now available at:
https://datcpservices.wisconsin.gov/pb/pdf/06-29-17.pdf

LOOKING AHEAD: Spotted wing drosophila flies appearing in more survey traps
FORAGES & GRAINS: Potato leafhopper counts near-threshold in western WI fields
CORN: Annual western bean cutworm moth flight now underway
SOYBEANS: Rose chafers, sand chafers and bean leaf beetles common in soybeans
FRUITS: First flight of codling moths subsiding across much of the state
VEGETABLES: Squash bugs appearing in vegetable gardens
NURSERY & FOREST: Assorted observations from this week’s nursery inspections
DEGREE DAYS: Degree day accumulations through June 28, 2017

Western Bean Cutworm
Bryan Jensen, UW Extension and IPM Program

Hopefully, most of you have seen DATCP’s Pest Survey Report (subscribe) which indicates some Western bean cutworm have emerged in Wisconsin. I know some of you have because it has prompted a few calls regarding the potential mismatch between western bean cutworm activity and corn growth and development.

Although corn appears behind “normal” I am not sure at this point if we will have a large scale mismatch. Let me explain. Yes, adults have started to emerge, however, this is just the start of a flight which will not peak until approximately 1400 degree days (base 500 F). Once the adults do emerge, time is needed for these adults to reach sexual maturity, to find a mate and for those eggs to develop within a female. Furthermore, once the eggs have been deposited an additional 5-7 days are required before those eggs will hatch. That will help close the gap between egg hatch and susceptible corn.

Likely, there will be geographical areas where WBC eggs will be laid and hatched on vegetative corn. From the references I have seen, it is probable that they will feed on newly emerging leaves until tassels and ears emerge. I do not know if extensive feeding on corn leaves will affect survival. Could other hosts be attractive in the event that only vegetative corn is available? The references aren’t clear but soybeans may/may not be a host and snap beans are a possibility. Either way, I would not expect significant egg laying in other crops.

Be mindful that delayed planting may make the earliest planted fields more attractive to WBC egg laying. These would be fields to watch early and may serve as a sentinel fields to gauge WBC activity.

Scouting
Although we don’t know for sure what the outcome will
be, scouting will help determine the need for treatment. Concentrate your efforts on the earliest planted corn fields as we approach the peak flight period.

- Examine 20 consecutive plants in each of five locations to get a representative sample.
- Observe the upper 3-4 leaves for larvae and/or eggs.
- Consider treating if 5% of the plants are infested with eggs and/or larvae.
- Once larvae have entered the ear they cannot be controlled.

Continue scouting for at least 7-10 days after peak flight. Infestations may be patchy within fields and this pattern may be accentuated by variability in corn development. Scout fields with above ground Bt proteins. These hybrids may have significant feeding depending on the protein used.

WBC eggs are dome-shaped and laid in clusters on the upper leaf surface. Initially they are cream-colored but will turn purple prior to hatch. Larvae will consume their egg shells after hatching making late scouting more difficult. Early instar larvae are dark colored with black heads. Initially larvae will migrate to the tassel to feed on anthers and/or pollen and are capable of dispersing several feet.

In addition to egg masses, look for early instar larvae on plant surfaces (leaves, tassels, leaf axils, silks) before larvae enter the ear. (Photo: E. Cullen, Univ. of Wisconsin-Madison).

Weed Identification Series, Wild Buckwheat

Mark Renz, UW Madison Associate Professor and Extension Specialist, and Chelsea Zegler, UW Madison Associate Research Specialist

Wild buckwheat is also known as black-bindweed or false buckwheat. While this species has been in Wisconsin for well over a century and documented in nearly all counties (exceptions are Barron and Washburn counties) it is frequently misidentified as a bindweed (either hedge or field). It is important to differentiate between these species, as wild buckwheat is an annual, therefore management method and timing can differ with respect to management.

As with most weeds it likes disturbed areas, so I typically see populations in corn and soybean fields but it can also be found along roadsides, and other right of way areas. It begins germinating in April, but can continue to germinate throughout the summer, and can be easily missed by post-emergent applications in crop. This results in significant vining and if populations are large increase harvest time in the fall. Plants can start to flower in June and depending on when they germinate flower later into the summer.

Due to a series of factors, this species is being seen more commonly in production fields throughout the Midwest. To view the identification sheet click here….

http://ipcm.wisc.edu/download/weeds/Wild-Buckwheat.pdf
Wild Buckwheat

Summer annual vine that is common in annual cropping systems and disturbed non-crop areas. Can increase harvest time in crops and is a host for several crop diseases.

**Leaves:** Heart-shaped leaves 1.0-2.5 in long that alternate along the stem. Basal lobes point towards the stem and the tip is elongated and slender.

**Stem:** Vines can be 8 to 60 in long. While young plants look upright, vines develop as plants mature and grow over other plants/objects. Stems have an ocrea (membranous sheath) where the leaf attaches to the stem (node).

**Flower:** Flowers lack petals, but have 5 white to greenish 0.2 in long sepals in small clusters at the base of leaves or stem tips. Plants bloom from June – August.

**Similar Plants:** This plant is often confused with field bindweed (vine-like perennial). Wild buckwheat can be distinguished by its annual root system, presence of an ocrea at each node and small flowers. Wild Buckwheat leaves are also heart-shaped compared to field bindweed’s arrowhead shaped leaves. Morninglory species can also be confused with this species as they are annuals with heart-shaped leaves, but flowers are large and not white.
The best of all workshops! This year our crop & pest management workshop and diagnostic troubleshooting workshop have been combined into a single day. The day starts with 2 hours of multi-disciplinary agronomic topics and culminates with 6 separate diagnostic troubleshooting scenarios.

Tuesday – July 25, 2017
Lunch is provided at noon
Tiered fee: $90 before 7/15/17, $100 after 7/15/17
Location: Arlington Ag Research Station
CCA CEU’s: 5.0*

Pigweed Species Identification & Control – Mark Renz, Extension Weed Science Specialist
• Is it pigweed? Waterhemp? Some other Amaranth species?
• This session will provide you with the tools to positively identify these troublesome weeds and discuss control options while considering herbicide resistance and recent technologies

Spray Drift Mitigation – Dan Heider, UW Integrated Pest Management Specialist
• Rain followed by more rain. When the rain stops, the wind seems to start with few good spray windows between. Are you confidently spraying on target?
• Nozzles and drift control additives will be demonstrated so you can really see what’s happening behind the spray boom

Diagnostic Troubleshooting – UW Specialists from multiple disciplines
• Fine tune your crop diagnostic skills in a fun and interactive setting. Small groups will rotate through field problems with UW Specialists role playing as farmers. Through digging up plants, asking questions and consulting references participants will make a diagnosis of the problem being observed and a recommendation for correction. Each participant will experience 6 separate diagnostic scenarios

Schedule:
8:30 - 8:50 registration
8:50 - 9:00 introduction/orientation
9:00 - 11:00 agronomic topics 1-2
11:00 - 12:00 troubleshooting sessions 1-2
12:00 - 12:45 lunch (provided)
12:45 - 2:45 troubleshooting sessions 3-6

Workshops begin in the Public Events Facility of the Arlington Agricultural Research Station. Be aware that this is not a “traditional” field day. Training sessions are designed to be in-field and hands-on. Therefore we advise that you come prepared for all types of weather.

*CCA CEU’s: Continuing education units/categories are subject to change pending approval from the Certified Crop Advisor Program.

FAST and easy ONLINE registration by credit card at- https://www.patstore.wisc.edu/ipm/register.aspx
or if NOT using credit card online: Mail registration form below to Dan Heider, UW-IPM Program, 1575 Linden Drive, Madison, WI 53706

Name: ________________________________
Address: ________________________________
Affiliation: ________________________________
Daytime telephone: ________________________________
e-mail: ________________________________

Diagnostic Training Center Workshop, July 25 ..... $90 / $100
($100 if registration received after July 15)
Checks payable to: University of Wisconsin-Extension

Checks payable to: University of Wisconsin-Extension

College of Agricultural & Life Sciences
University of Wisconsin-Madison
Time to Start Preparing for White Mold Management in Soybean

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

Originally posted on 6/30/17 at http://fyi.uwex.edu/fieldcroppathology/2017/06/30/time-to-start-preparing-for-white-mold-management-in-soybean/

While many struggled to plant soybeans due to extremely wet weather this season, many fields we have observed are looking quite good. Soybeans planted in early May in the southwest portion of Wisconsin, may be flowering, or approaching the flowering growth stage. The flowering growth stages are a critical time to manage white mold, in-season. You can visit my previous posts dealing with white mold and favorable conditions, or view a fact sheet or video on the subject.

As you probably know, timing in-season fungicide sprays at the correct time during the soybean bloom period can be extremely difficult. To help solve this decision-making issue, a model was developed at the University of Wisconsin-Madison in conjunction with Michigan State University and Iowa State University to identify at-risk regions which have been experiencing weather favorable for the development of white mold apothecia. This model predicts when apothecia will be present in the field using combinations of 30-day averages of maximum temperature, relative humidity, and wind speed. Using virtually available weather data, predictions can be made in most soybean growing regions. Based on these predictions, a map is generated under three scenarios (non-irrigated soybeans, soybeans planted on 15 row-spacing and irrigated, or soybeans planted on 30 row-spacing and irrigated). The maps are colored to show the likelihood of apothecial presence within a region. White areas indicate the model is inactive and risk of apothecia in the field is likely low. Gray areas indicate that apothecia might be present, but likelihood of apothecial presence is less than 5%. Blue indicates a low risk (5 to <15% chance), yellow a moderate risk (15 to <30% chance), and red areas indicate a high risk (30% or higher chance). Model predictions must be combined with soybean growth stage and canopy characteristics to aid in timing of fungicide sprays. If the model is predicting high risk (red) in your area for your planting scenario, the soybeans are flowering, and the canopy is somewhat...
No advanced registration is required and the filed day is free.

Kernza is a variety of intermediate wheat grass that has gone through 6 generations of breeding and selection for seed size by The Land Institute. The goal is to develop a perennial grain that does not need to be planted annually and that can have a dual role as a resilient livestock forage that produces when other cool season forages shut down from moisture stress. Wheatgrass develops a massive root system. Field scale plots have been established at Lancaster and multiple local farms in SW Wisconsin. Lancaster ARS is one of the grazing sites. We’ll observe plots and see what yield and quality data can tell us of Kernza’s potential for grazing and grain.

Wisconsin producers are quickly adopting cover crops as a strategy to conserve soil, capture nutrients and build soil health. Cover Crops after wheat or corn silage are simple. However, our short growing season can make cover crops a challenge after corn and soybeans. The second update will review success with interseeding cover crops into V5 corn so a growing plant is already established by crop harvest and is able to grow through fall. We’ll be looking at shade tolerance and timing for successful establishment.

Rainfall simulation, Sauk County LCD. What we do on our land . . . matters. No one thinks they have soil erosion, yet the evidence is clear after each passing storm, soil moves. The rainfall simulator provides an engaging demonstration of the impact of different cropping and tillage systems on water infiltration rates and runoff. “It’s not how much rain you get, it’s how much you keep”, Kit Pharo.

For even more detailed information about white mold you can visit the Crop Protection Network page on white mold and also download this handy white mold scouting card. You can also find more information about white mold by clicking here and scrolling down to the white mold section.

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**Kernza, Cover Crops and Conservation Field Day at Lancaster July 19**

Daniel H. Smith, Nutrient and Pest Management Program, University of Wisconsin-Madison

The Kernza, Cover Crops and Conservation Field Day will provide research updates on projects that enhance soil health and farm profits, as well as an opportunity to see a rainfall simulator.

Date: July 19 9:30-12:00
Location: Lancaster Ag Research Station, 7396 WI 35 & 81, Lancaster, WI 53813

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**Weed Identification Series, Waterhemp and Palmer Amaranth**

Mark Renz UW Madison Associate Professor and Extension Specialist

Concern about the continued spread of waterhemp and Palmer amaranth exist in Wisconsin. While invasion of these species has been much higher in adjacent states, populations are expanding in Wisconsin and we likely will be impacted from these species in the future. However identification can be challenging as they look similar, especially when vegetative.
To assist with identification NPM/IPM (Roger Schmidt and Mimi Broeske) we have created a vegetative identification video and factsheets.

The video highlights a two-step process to differentiate waterhemp and Palmer from other common pigweed species (redroot, smooth, spiny) found in Wisconsin.

We have also created weed identification factsheets for Palmer and waterhemp to aid in further identification. You can find these at the end of this newsletter.

It is our hope that this information will assist in early detection of new populations in Wisconsin and encourage management before they are spread.

We will be encouraging reporting of pigweed populations in future weeks to better understand their distribution and what factors are driving spread. Be on the lookout for more information.

Insect Updates-July 7, 2017

Bryan Jensen, UW Extension and IPM Program

Potato Leafhoppers in alfalfa. This insect’s density has been variable this summer. Although the anticipated warm/dry weather could change that quickly. Within a limited geographical area this season, I have seen populations range from below threshold to 5X the established economic threshold. This really speaks to the need for scouting. Pay very close attention and be sure to identify (and count) potato leafhopper nymphs in the net. Nymphs are commonly found on the collar of the sweep net and are easily missed because of their size. First instars are about the size of a “period” in newsprint but have a very bright fluorescent yellowish/green coloration. The attached video might help to confirm identification. Furthermore, the need for regular field scouting is important because I have seen potato leafhopper populations crash in mid-July but may persist well past Labor day. For more information on potato leafhopper threshold and labeled insecticides please consult A3646, Pest Management in Wisconsin Field Crops.

Japanese Beetles. Not unexpectedly, Japanese Beetle adult emergence has started and likely will continue for a while. Adults cause defoliation in soybeans and clip green corn silks. Typically, damage will be clumped and isolated along field edges. The economic threshold for defoliation of reproductive soybean is 20%. People tend to overestimate defoliation. Remember % defoliation is based on the whole plant not just the affected leaves. In corn, Japanese beetle adults can clip green corn silk resulting in poor pollination. This usually is not considered economic unless an average of 3 adults are present/plant and green silks are being clipped.

Adult Japanese beetle are about ½ inch long with metallic copper-colored wing covers and a metallic green thorax and head. Six white tufts of hair are present on each side of the abdomen. Adults remain active until early September.

True Armyworms. The first generation of true armyworms seems to have wrapped up in most areas of the state. Although there have been some very intense populations in very predictable areas (corn planted after a grass cover crop, no-tilled into alfalfa and possibly corn with early grassy weeds) this next generation is not as predictable in terms of “if” and “where”. High populations of the first generation doesn’t automatically predict a significant second generation. Further complicating the issue is that it is very difficult to predict which corn fields may have second generation damage. Continue to monitor wheat and other small grains until harvest.

Wisconsin Fruit News-July 7, 2017

It’s time for another Wisconsin Fruit newsletter, featuring information about:

http://go.wisc.edu/empp63

* Follow up on the article on the reduced risk insecticide Intrepid

* Endangered Species Protection Bulletins and Methoxyfenozide-containing pesticides
Wisconsin Winter Wheat Disease Update 6-30-17

Damon Smith, Extension Field Crops Pathologist, Department of Plant Pathology, University of Wisconsin-Madison, Brian Mueller, Graduate Research Assistant, Department of Plant Pathology, University of Wisconsin-Madison

The Wisconsin Field Crops Pathology team has nearly finished all of our assessments of wheat and wheat disease for the year in Wisconsin. Winter wheat is well on its way to maturing. The few spring wheat acres we have seen have mostly completed anthesis throughout much of the state, with just a few late-planted locations still completing anthesis.

Overall, the spring 2017 wheat season can be defined mostly by the widespread presence of stripe rust (Figure 1). We have been in fields where stripe rust has caused significant widespread damage on susceptible varieties that were not treated with fungicides. We have also observed fields that either had a resistant variety, received a fungicide application, or both. These fields appear to be doing quite well and the crop will yield well. Clearly areas where we suspect that there was overwintering of the stripe rust pathogen, saw the occurrence of the epidemic very early, resulting in quick spread of stripe rust this season. We have completed rating of stripe rust in the wheat variety trials in Wisconsin and these data will be published later this year in the variety performance report. I would encourage you to study these results carefully and choose varieties that performed well in your area and had low levels of stripe rust. This is the second year in a row that we have had a substantial stripe rust epidemic and choosing resistant varieties is a cheap method of stripe rust management.

We have also been looking for Fusarium head blight (FHB or scab) in commercial fields and variety trials. For a second year in a row, FHB incidence and severity is extremely low statewide. In many fields we struggle to find even one symptomatic head. Fusarium head blight incidence in the far southwest part of the state is nearly undetectable and approaches about 1% incidence in fields in the north-central and northeastern portions of the state. I expect that DON (vomitoxin) levels will be relatively low in finished grain in Wisconsin, this season. The low level of FHB in winter wheat this season is likely due to the unseasonably hot, dry weather we had in early June, which coincided with anthesis in many wheat fields. This type of weather is not conducive for the fungus and likely resulted in very few successful infection events.

Other diseases have been extremely hard to find. We have seen some fields with low levels of Septoria/Stagonospora, but in general these epidemics will not limit yield to a significant extent. Powdery mildew can be found infrequently on a few plants in some fields. In the southern portion of the state, we were able to find some leaf rust just this week. The arrival of leaf rust is likely too late to affect yield this season. We have not observed any stem rust in our scouting trips to commercial fields or in variety trials.

This post originally appears on Damon Smith's blog at – http://fyi.uwex.edu/fieldcroppathology/2017/06/30/wisconsin-winter-wheat-disease-update-june-30-2017/
Video: Modifying a no-till drill for cover crop interseeding

Daniel H. Smith, Nutrient and Pest Management Program, University of Wisconsin-Madison

A new video from the Nutrient and Pest Management program details how to modify a no-till drill for cover crop interseeding. Smith and the crew at Lancaster Research Station are shown both in the field and in the shop. It is a short 2 minute video, however if you would like further information feel free to find contact on the IPCM website.

Follow us
Crop Diagnostic Training Center Workshop  
July 25, 2017

The best of all workshops! This year our crop & pest management workshop and diagnostic troubleshooting workshop have been combined into a single day. The day starts with 2 hours of multi-disciplinary agronomic topics and culminates with 6 separate diagnostic troubleshooting scenarios.

Tuesday – July 25, 2017  
Lunch is provided at noon  
Tiered fee: $90 before 7/15/17, $100 after 7/15/17  
Location: Arlington Ag Research Station  
CCA CEU’s: 5.0*

Pigweed Species Identification & Control – Mark Renz, Extension Weed Science Specialist  
• Is it pigweed? Waterhemp? Some other Amaranth species?  
• This session will provide you with the tools to positively identify these troublesome weeds and discuss control options while considering herbicide resistance and recent technologies

Spray Drift Mitigation – Dan Heider, UW Integrated Pest Management Specialist  
• Rain followed by more rain. When the rain stops, the wind seems to start with few good spray windows between. Are you confidently spraying on target?  
• Nozzles and drift control additives will be demonstrated so you can really see what’s happening behind the spray boom

Diagnostic Troubleshooting – UW Specialists from multiple disciplines  
• Fine tune your crop diagnostic skills in a fun and interactive setting. Small groups will rotate through field problems with UW Specialists role playing as farmers. Through digging up plants, asking questions and consulting references participants will make a diagnosis of the problem being observed and a recommendation for correction. Each participant will experience 6 separate diagnostic scenarios

Schedule:
8:30 - 8:50 registration  
8:50 - 9:00 introduction/orientation  
9:00 - 11:00 agronomic topics 1-2  
11:00 - 12:00 troubleshooting sessions 1-2  
12:00 - 12:45 lunch (provided)  
12:45 - 2:45 troubleshooting sessions 3-6

Workshops begin in the Public Events Facility of the Arlington Agricultural Research Station. Be aware that this is not a “traditional” field day. Training sessions are designed to be in-field and hands-on. Therefore we advise that you come prepared for all types of weather.

*CCA CEU’s: Continuing education units/categories are subject to change pending approval from the Certified Crop Advisor Program.

FAST and easy ONLINE registration by credit card at- https://www.patstore.wisc.edu/ipm/register.aspx

or if NOT using credit card online: Mail registration form below to Dan Heider, UW-IPM Program, 1575 Linden Drive, Madison, WI 53706

Name: _____________________________________________
Address: ___________________________________________
Affiliation: ___________________________________________
Daytime telephone: _________________________________
email: _______________________________________________

Diagnostic Training Center Workshop, July 25 …… $90 / $100 ($100 if registration received after July 15)

Checks payable to: University of Wisconsin-Extension
Palmer Amaranth

Annual broadleaf that germinates in April-August. Commonly found in agronomic and horticultural crops as well as highly disturbed areas.

**Leaves:** Diamond or spade shaped, 3-6 in long that alternate on the stem and have a small hair at the tip of the leaf. Petiole is longer than the length of the leaf blade on mature leaves. Leaves can also have a watermark but many plants lack this trait.

**Stem:** Typically 3-5 feet tall, but can grow > 6 ft. Lacks hair on the stems.

**Flowers:** Many small green flowers form 1-3 ft long inflorescences starting in July. Inflorescences can vary in branching, but lateral branches can be > 6 in long. Male and female flowers found on separate plants. Female seed heads are prickly to touch due to sharp bracts; male seed heads are soft as they do not contain the sharp bract.

**Similar Plants:** This plant is often confused with other common pigweeds, especially waterhemp and spiny amaranth. Spiny amaranth has a distinct spine below leaves. Waterhemp can be differentiated from Palmer by the petiole as it is shorter than its leaf blade unlike Palmer. For more information including a video see visit the [report-a-pigweed link](http://fyi.uwex.edu/wifdn/report-a-pigweed/) below.

**Herbicide Resistance:**
In Wisconsin resistance to glyphosate has been confirmed in 2 counties and resistance to HPPD and ALS inhibitors in one county. In nearby states much higher levels of resistance to these and other modes of actions of herbicides have been detected. Currently nearby states have Palmer populations resistant to multiple modes of action.
Tall/Common Waterhemp

Annual broadleaf that germinates April – August. Commonly found in agronomic and horticultural crops as well as highly disturbed areas.

**Leaves**: Lance or spearhead shaped, 3-6 in long that alternate on the stem. Petiole is shorter than the length of the leaf blade.

**Stem**: Typically, 4-5 ft tall, but can grow> 10 ft. Lacks hair on the stem.

**Flowers**: Many small green flowers form an inflorescence in July-September. While the terminal inflorescence can be > 1 ft long, many wiry lateral branches occur throughout the inflorescence. Male and female flowers found on separate plants, and can on occasion turn pink – red as they mature.

**Similar Plants**: This plant is often confused with other common pigweeds, especially palmer and spiny amaranth as they also have no hairs on stems. Palmer amaranth can be differentiated by the petiole as it is longer than its leaf blade unlike Waterhemp. Spiny amaranth has distinct spines below leaves. For more information including a video see visit the report-a-pigweed link below.

**Herbicide Resistance**: In Wisconsin resistance to glyphosate has been confirmed in 16 counties and resistance to glyphosate and PPO-inhibitors in one county. It is also believed that many populations are also resistant to ALS herbicides but few have been tested. In nearby states much higher levels of resistance to these and other modes of actions of herbicides have been detected. Currently nearby states have Waterhemp populations resistant to five different herbicide modes of action.
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

INSIDE THIS ISSUE

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

Plant Disease Diagnostic Clinic (PDDC) Update, 7-14-17

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>
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<tbody>
<tr>
<td>FRUIT CROPS</td>
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<tr>
<td>Blueberry</td>
<td>Phomopsis Canker</td>
<td>Phomopsis sp.</td>
<td>Kewaunee</td>
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<td>Grape</td>
<td>Anthracnose</td>
<td>Sphaceloma ampelinum</td>
<td>Dane</td>
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<td>Grape</td>
<td>Phomopsis Cane and Leaf Spot</td>
<td>Phomopsis viticola</td>
<td>Dane</td>
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<td>SPECIALTY CROPS</td>
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<tr>
<td>Hop</td>
<td>Fusarium Canker</td>
<td>Fusarium sp.</td>
<td>Racine</td>
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<td>VEGETABLE CROPS</td>
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<tr>
<td>Asparagus</td>
<td>Root/Crown/Stem Rot</td>
<td>Fusarium oxysporum</td>
<td>Vernon</td>
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<tr>
<td>Bean (Lima)</td>
<td>Alternaria Leaf Spot</td>
<td>Alternaria sp.</td>
<td>Columbia</td>
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<tr>
<td>Cabbage</td>
<td>Bacterial Leaf Spot</td>
<td>Pseudomonas syringae pv. maculicola</td>
<td>Waupaca</td>
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<tr>
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<td>Angular Leaf Spot</td>
<td>Pseudomonas syringae pv. lachrymans</td>
<td>Waushara</td>
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<td>Black Leg</td>
<td>Dickeya dianthicola</td>
<td>Portage</td>
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<td>Anthracnose</td>
<td>Colletotrichum orbiculare</td>
<td>Sauk</td>
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<tr>
<td>Tomato</td>
<td>Septoria Leaf Spot</td>
<td>Septoria lycopersici</td>
<td>Columbia, Dane, Green Lake, Sauk</td>
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</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.

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
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: 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

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:

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
Wisconsin Fruit News—July 21, 2017

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

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:


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.

PLANT/SAMPLE TYPE, DISEASE/DISORDER, PATHOGEN, COUNTY

FRUIT CROPS
Blueberry, Phomopsis Canker, Phomopsis sp., Kewaunee
Grape, Anthracnose, Phomopsis Cane and Leaf Spot, Sphaceloma ampelinum, Phomopsis viticola, Dane, Dane

SPECIALTY CROPS
Hop, Fusarium Canker, Fusarium sp., Racine

VEGETABLE CROPS
Asparagus, Root/Crown/Stem Root, Fusarium oxysporum, Vernon
Bean (Lima), Alternaria Leaf Spot, Alternaria sp., Columbia
Cabbage, Bacterial Leaf Spot, Pseudomonas syringae pv. maculicola, Waupaca
Cucumber, Angular Leaf Spot, Pseudomonas syringae pv. lachrymans, Waushara
Tomato, Septoria Leaf Spot, Septoria lycopersici, Columbia, Dane, Green Lake, Sauk

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.

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 can 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 if soybeans are 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.

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.

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://fji.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.
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.
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.

2017 Wisconsin Winter Wheat Performance Trials

Shawn Conley, Adam Roth, John Gaska, Brian Mueller and Damon Smith, Departments of Agronomy and Plant Pathology, College of Agricultural and Life Science, University of Wisconsin-Madison

The Wisconsin Winter Wheat Performance Trials are conducted each year to give growers information to select the best-performing varieties that will satisfy their specific goals. The performance trials are conducted each year at four locations in Wisconsin: Arlington, Chilton, Fond du Lac and Sharon. Trials include released varieties, experimental lines from University breeding programs and lines from private seed companies. The primary objective of these trials is to quantify how varieties perform at different locations and across years. Growers can use this data to help select which varieties to plant; breeders can use performance data to determine whether to release a new variety.

Planning for Success with Cover Crops Field Day

Daniel H. Smith, Nutrient and Pest Management Program, University of Wisconsin-Madison

An upcoming field day on August 9th at the Lancaster Agricultural Research Station will provide cover crop recommendations and considerations. The field day will include presentations on cover crop species selection, seeding methods, herbicide considerations, forage value of cover crops including grazing and winter rye following silage corn, and an update on local cover crop incentives. The field day will begin around 9:30 a.m. and conclude by 12:00 p.m. Following the field day attendees are welcome to tour plots featuring cover crops interseeded into corn. The address of the research station is: 7396 WI 35 & 81 Lancaster, WI 53813. No advanced registration is required and the field day is free.

Results of Intensive Winter Wheat Management in 2017

Shawn P. Conley, Soybean and Wheat Extension Specialist, Department of Agronomy, University of Wisconsin, Madison

A research trial was initiated at the Arlington Agricultural Research Station to assess the impact of various management levels on the yield, test weight, and disease management of 14 soft red winter wheat varieties.

Management levels were stair-stepped with increasing intensity of inputs. Each management step increased yield, however growers should verify individual farm gate input prices to verify if yield increases had a positive ROI.
For additional information please review: Results of Intensive Winter Wheat Management in 2017

Cover Crop Field Day

Daniel H. Smith, Nutrient and Pest Management Program, University of Wisconsin-Madison

An upcoming field day on August 11th at Jay Aspenson's farm will provide an update to ongoing cover crop work in Crawford and Vernon County. The field day will include presentations on nitrogen credits from cover crops, using cover crops for weed suppression, cover-cropping methods at the Aspenson farm, and an update on local cover crop incentives. The field day will begin at 10 a.m. and conclude by 1:00 p.m. Lunch will be provided but registration is required. The field day will be one mile west on Rounds Road off Hwy. 27 just south of Mt. Sterling. RSVP by calling Sarah at 608-637-5480. Please see the announcement below for more information.

Wisconsin White Mold Risk Maps-July 27, 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. We encourage you to read the model how-to guide […]

You may view this post at


Corn and Southern Rust

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

If you are like me, you have been paying attention to reports from the southern U.S. indicating that southern rust of corn is making its way further north again this year. You can follow current southern rust updates on the iPiPE site. The latest reports place southern rust in central portions of Iowa and Illinois (Fig. 1), which means farmers in Wisconsin need to start paying attention to this issue. Scouting over the next several weeks is going to be critical for making in-season management decisions for this disease. Yield reductions in Wisconsin will be greatest if southern rust moves in prior to the “milk” (R3) growth stage in corn. Let’s take a closer look at southern rust and its less damaging relative, common rust.

Figure 1. Corn Southern Rust Observations as of July 21, 2017 (Map from ext.ipipe.org)

Figure 2. Southern rust pustules on a corn leaf. Photo credit: Department of Plant Pathology, North Carolina State University, Bugwood.org

Southern rust is caused by the fungus Puccinia polysora. Symptoms of southern rust are different from common rust in that they are typically smaller in size and are often a brighter orange color (Fig. 2). Pustules of southern rust also typically only develop on the upper surface and will be more densely clustered. Favorable conditions for southern rust development include high humidity and temperatures around 80F. However, very little free moisture is need for infection to occur. Southern rust is typically a rare occurrence in Wisconsin. When it does occur, it is usually in the southern and south-western portions of the state, with epidemics initiating late in the season. With that said, southern rust did make it to southern Wisconsin in 2016. However, the arrival was well past R3 and yield reductions caused by southern rust were
insignificant in Wisconsin. Spores of this fungus have to be blown up from tropical regions or from symptomatic fields in the southern U.S. The fungus cannot overwinter in Wisconsin. While southern rust epidemics can be rare events in Wisconsin, the disease can be serious when it occurs. Therefore close monitoring of forecasts and scouting are needed to make timely in-season management decisions.

Management of Southern Rust

Traditionally resistance was used to manage southern rust. However, in 2008 a resistance-breaking race of the southern rust fungus was confirmed in Georgia. Thus most modern hybrids are considered susceptible to southern rust. Rotation and residue management have no effect on the occurrence of southern rust. The southern rust fungus has to have living corn tissue in order to survive and can not overwinter in Wisconsin. Fungicides are typically used to control southern rust in parts of the U.S. where this is a consistent problem. Efficacy ratings are available for fungicides against southern rust on the Corn Fungicide Efficacy Table. As I said previously, should southern rust make its way to Wisconsin prior to the “milk” (R3) growth stage in corn, it could cause yield reductions. Growers and consultants should scout carefully through the R3 growth stage and be sure to properly identify the type of rust observed. If you need assistance in identifying rust on corn, leaf samples of corn plants can be sent in a sealed plastic bag with NO added moisture to the University of Wisconsin Plant Disease Diagnostic Clinic (PDDC). Information about the clinic and how to send samples can be found by CLICKING HERE.

Figure 3. Brick-red Pustules of the common rust fungus on a corn leaf.

Common rust is caused by the fungus Puccinia sorghi and is extremely common in Wisconsin, but often results in little yield loss. Most field corn hybrids planted in Wisconsin are very resistant to the disease. Symptoms can include chlorotic flecks that eventually rise and break through the epidermis to produce pustules of brick-red spores (Fig. 3). Typically these pustules are sparsely clustered on the leaf. They can also appear on other parts of the plant including the husks and stalks. Management for common rust primarily focuses on using resistant hybrids. Remember resistance is not immunity, so some pustule development can be observed even on the most resistant hybrids. Some inbred corn lines and specialty corn can be highly susceptible to common rust. Under these circumstances a fungicide may be necessary to control common rust. Most of the hybrids I have scouted this season have some pustules, however incidence and severity is relatively low. Therefore, a fungicide application to control common rust isn’t needed for most of these hybrids in Wisconsin. Residue management or rotation is typically not needed for this disease as inoculum (spores) have to be blown up on weather systems from the southern U.S.

Wisconsin Pest Bulletin

7/28/2017

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

Volume 62 Issue No. 13 of the Wisconsin Pest Bulletin is now available at:

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INSIDE THIS ISSUE

LOOKING AHEAD: High spotted wing drosophila captures recorded for third week

FORAGES & GRAINS: Potato leafhopper counts decrease with heavy rain

CORN: Peak flight of western bean cutworm moths underway across central WI

SOYBEANS: Soybean aphid densities low for late July

FRUITS: Control recommendations for spotted wing drosophila and Japanese beetle

VEGETABLES: Tomato late blight confirmed by UW in Waukesha County

NURSERY & FOREST: Fall webworm and Venturia shoot blight reports

DEGREE DAYS: Degree day accumulations through July 26, 2017
Vegetable Crop Update No. 13-
July 14, 2017

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

Newsletter No. 13-July 14, 2017

Late Blight and Early Bight Disease Forecast Updates

National Late Blight Updates

Cucurbit Downy Mildew Updates

Phytophthora Crown and Fruit Rot in Cucurbit and other Crops

First detection of hop powdery mildew for WI in 2017

Wisconsin Fruit News
Supplemental Issue-July 24,
2017

Janet van Zoeren and Christelle Guédot, UW-Extension

With cherry harvest beginning in Door County this week and next, and spotted wing drosophila in full swing across the state, we’ve decided to put together some reminder information about recommendations for control of SWD in cherries.

Read or download PDF

We hope you find this helpful.
Potato Leafhopper Update for field crops in WI

Bryan Jensen, UW Extension and IPM Program

Alfalfa

Surprising, at least to me, potato leafhopper (PLH) populations have been relatively high in alfalfa this summer despite frequent and heavy rains. Typically, PLH populations peak during periods of hot dry weather. Go figure. Your next question might be “How long will they stick around”? It is difficult to predict with any hint of accuracy. Typically, you see PLH numbers “slow down” by mid-August. Some years I have seen populations crash in mid-July. Other years they are still causing economic damage after Labor Day. My best answer to the question may seem a little simplistic but is the best answer I have. Continue to scout until you are absolutely certain populations are tapering off.

Soybeans

I have noticed several PLH nymphs on soybeans while spot-checking for soybean aphids. This is not uncommon and they can, under extreme circumstances, become an economic pest in soybean. While you might find references indicating leaf hairs may deter PLH feeding they may still become established. PLH damage to soybean can look a little like K deficiency which can be described as marginal chlorosis appearing initially on the lower leaves. However, unlike K deficiency symptoms, PLH injury may be noticed on all areas of the plant. Furthermore, puckering/crinkling of leaves is often associated with advanced PLH feeding.

At this time of the growing season, PLH scouting is best accomplished using an insect sweep net. Consider treating if you have a field average of approximately 6 leafhoppers/sweep. Before treating I would consider doing a whole plant inspection and look for nymphs which will indicate an established population.

Agronomy/Soil Field Day 2017

Cultivating a Resilient Agriculture

Tours & Exhibits of Current Crops & Soils Research

Wednesday, August 30, 2017
<table>
<thead>
<tr>
<th>Plant/Sample Type</th>
<th>Disease/Disorder</th>
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<td>Bacterial Blight</td>
<td>Pseudomonas savastanoi pv. glycinea</td>
<td>Rock</td>
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<td>Brown Spot</td>
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<td>Fusarium graminearum</td>
<td>Columbia</td>
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<td>Weathering</td>
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<td>Columbia</td>
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<td>Blister Spot</td>
<td>Pseudomonas syringae pv. papulans</td>
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<td>Pseudomonas syringae</td>
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<td>Botrytis Blight</td>
<td>Botrytis sp., Washburn</td>
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<td>Root</td>
<td>Pythium sp., Washburn</td>
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<td>Cherry Leaf Spot</td>
<td>Blumeriella jaapii, Milwaukee</td>
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<td>Rhubarb</td>
<td>Root/Crown Rot</td>
<td>Pythium sp., Rock</td>
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<td>Pythium sp., Fusarium sp., Bayfield, Wood</td>
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<td>Vegetable Crops</td>
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<td>Squash (Butternut)</td>
<td>Angular Leaf Spot, Pseudomonas syringae pv. lachrymans, Rock</td>
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</table>

Arlington Agricultural Research Station Registration @ 8 am
Tours depart from the Public Events Facility at 8:30 am, 10:30 am, & 1:45 pm
See flyer attached at end of newsletter.

**Wisconsin Pest Bulletin 8/4/2017**

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

Volume 62 Issue No. 14 of the Wisconsin Pest Bulletin is now available at:

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**INSIDE THIS ISSUE**

**LOOKING AHEAD:** Annual corn rootworm beetle survey now underway

**FORAGES & GRAINS:** Potato leafhopper counts below-threshold in alfalfa

**CORN:** A surge in western bean cutworm recorded from July 27-Aug 2

**SOYBEANS:** Soybean leafminer beetle collected in La Crosse County soybean field

**FRUITS:** First report of brown marmorated stink bug nymph in raspberries

**VEGETABLES:** Squash bugs problems increasing in home gardens

**NURSERY & FOREST:** Assorted reports from this week’s nursery inspections

**DEGREE DAYS:** Degree day accumulations through August 2, 2017

**UW/UWEX Plant Disease Diagnostic Clinic (PDDC) Update, July 28**

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 22, 2017 through July 28, 2017.
Squash (Unspecified), **Root/Crown Rot**, Pythium sp., Fusarium sp., Dane

Tomato, **Bacterial Canker**, Clavibacter michiganensis subsp. michiganensis, Walworth

Tomato, **Late Blight**, Phytophthora infestans, Waukesha

Tomato, **Septoria Leaf Spot**, Septoria lycopersici, Green Lake

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.

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**Wisconsin Fruit News-August 4, 2017**

This morning feels like fall here in Madison, and we’re beginning to think about apple and grape harvest and ripeness assessments. However, there’s a lot more than just that to read about in the newsletter this week:


Biological control Part II: Our favorite natural enemies

Plant Disease Diagnostic Clinic update

Insect Diagnostic Lab update

Blueberry maggot

Nematode diseases of berry crops

Cranberry degree-day map and update

Canopy management practices to improve grape qualities

Wine and table grape developmental stages

Preharvest bitter pit prediction in Honeycrisp apples

Apple maturity index report
**AGRONOMY/SOILS FIELD DAY**

Cultivating a Resilient Agriculture  
Tours & Exhibits of Current Crops & Soils Research  
Wednesday, August 30, 2017  
Arlington Agricultural Research Station  
Registration @ 8 am  
Tours depart from the Public Events Facility at  
8:30 am, 10:30 am, & 1:45 pm  

Lunch provided by UW-Madison Badger Crops Club  
{suggested donation $5/person}

**Tour A: Building Soil Health**  
(8:30 & 10:30 am)  
- Soils of Wisconsin (Alfred Haremink)  
- Importance of perennialization & diversification (Gregg Sanford & Randy Jackson)  
- Do cover crops improve soil health? (Matt Ruark)  
- Trade-offs with soil management decisions (Francisco Arriaga)

**Tour B: Managing Short- & Long-term Risk in Cropping Systems**  
(8:30 & 10:30 am)  
- How many corn hybrids should I grow on my farm? Minimizing risk & maximizing options (Joe Lauer)  
- Harnessing G x E x M interactions in soybean (Shawn Conley)  
- Weed management over 27 years in the Wis. Integrated Cropping Systems Trial (Nathan Drewitz & Dave Stoltenberg)  
- Identification, distribution & herbicide resistance of waterhemp & Palmer amaranth (Sam Marquardt & Mark Renz)

**Tour C: Perennial Forages to Accomplish Diverse Goals**  
(10:30 am & 1:45 pm)  
- Alfalfa: What have we learned & where are we headed? (Dan Understander)  
- When & where do fungicides pay in forage crops (Damon Smith)  
- Intermediate wheatgrass for forage & grain (Valentin Picasso)  
- Silvopasture: Benefits & challenges of trees in grazing systems (Keefe Keeley, Diane Mayerfeld & Steve Ventura)

**Tour D: Designing Landscapes for Profit, Clean Water, Stable Climate & Biodiversity**  
(10:30 am & 1:45 pm)  
- Yahara 2070: Using scenarios to understand impacts of future watershed land use (Chris Kucharik)  
- SmartScape: Developing a decision support tool for farmscape management (Claudio Gratton)  
- Biodiversity in the soil: Exploring how soil microbes influence crops (Thea Whitman)

*Tour D will be held in the Auditorium*

Lunch & Panel Discussion @ 12:00 to 1:45pm, in the Auditorium  
**“What Do We Mean by Resilient Agriculture?”**  
Randy Jackson (Moderator; Professor, Dept. of Agronomy, UW-Madison) – Panelists include  
*Andy Bensend (A B Farms, Dallas, Wis.)*  
*Sarah Lloyd (Special Products Coordinator, Wis. Farmers Union)*  
*Heidi Johnson (Crops & Soils Educator, Dane Co. UW-Extension)*  
*Matt Ruark (Professor & Extension Specialist, Dept. of Soil Science, UW-Madison)*

The Arlington Research Station is located on Hwy. 51, about 5 miles south of Arlington & 15 miles north of Madison. Watch for Field Day signs.  
For more information contact the Dept. of Agronomy 608/262-1390 or the Dept. of Soil Science 608/262-0485.  

In the event of rain, presentations will be held inside.  

Sponsored by the UW-Madison College of Agricultural & Life Sciences/Arlington Agricultural Research Station/Departments of Agronomy & Soil Science, & UW Cooperative Extension  

{Certified Crop Advisors: CEU credits will be requested}
Cover Crop Field Day
Friday – August 11th, 2017  10:00 a.m.–1:00 p.m.

Nitrogen Credit from Cover Crops
Field Test Results for Red Clover, Hairy Vetch, Winter Pea
Dan Smith UW-Madison NPM, Ted Bay UWEX

Cover Crops for Weed Suppression
Rye Variety Selection & Seeding Rates for Roller Crimping
Herbicide Considerations When Utilizing Cover Crops
Erin Silva UWEX Specialist, Dan Smith UW-Madison NPM

Cover Crop Practices
Frost Seeding Red Clover
Planting Cover Crops with Vertical Tillage
Planter Set-up for No-till Into Cover Crops
Jay Aspenson, Aspenson Farms

Cover Crop Programs in Crawford & Vernon Co.
Dave Troester LCD, Karyl Fritsche NRCS, Ben Wojahn LWCD

Lunch: Please call in your reservation

Jay Aspenson Farm
One Mile West on Rounds Road off Hwy. 27 just South of Mt. Sterling

RSVP by calling Sarah at 608-637-5480
The Wisconsin Field Crops Pathology crew has scouted corn from the southern portion of Wisconsin, to as far north as Spooner. Overall, disease levels are low. We have run into northern corn leaf blight (NCLB) in fields in the southern and central portions of the state. In most cases incidence was in the 10% or less range, with severity in the 5-10% range on leaves below the ear leaf. We have also had several samples arrive in the diagnostic clinic and confirmed with NCLB. For more information on managing NCLB or other corn diseases in Wisconsin, see my blog post.

Goss’s wilt has been confirmed in Grant Co. via the diagnostic clinic. Other samples have also been submitted that were suspected for Goss’s wilt. However, these turned out to be NCLB. For assistance in differentiating these two diseases, click here to view a PDF quick diagnostic guide.

Common rust remains super common. I have received several questions about spraying fungicide to control common rust. For field corn hybrids, no fungicide will be needed. In any specialty corn situations (inbreds for seed production, sweet corn, etc.) spraying for common rust might need to be considered. Most field corn hybrids have excellent resistance to common rust and will yield well, despite finding some pustules on a corn plant.

Southern rust has not yet been found in Wisconsin. However, it has been reported very close to Wisconsin (http://ext.ipipe.org). You should continue to be diligent in scouting for this rust disease. Yield reductions can be substantial if the fungus moves in over the next several weeks. Fortunately, our weather systems have been moving into Wisconsin from Canada and Minnesota. This has likely slowed progress of the southern rust fungus from moving into Wisconsin. Click here to view a great new resource on southern rust by the Crop Protection Network.
**Wisconsin White Mold Risk Update – August 5**

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

Using 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. We encourage you to read the model how-to guide which can be downloaded by clicking here.**

Continued dry conditions over the past couple of weeks have helped to continue to decrease white mold risk in non-irrigated fields. Some areas of high risk still exist in the southern and eastern portions of the state. However, many fields we have visited are moving to R3 and R4 growth stages. Thus, they are getting outside of the extremely critical period for infection by the white mold fungus. Some reports of symptoms of white mold are beginning to come in. I suspect we will begin to see more symptoms of disease over the next couple of weeks and will begin to get an understanding of how severe the epidemic will be this year.

Risk remains high for any soybeans planted to 15-inch rows AND irrigated. This planting and management scenario is highly conducive for white mold development. We continue to find apothecia under irrigation and in 15-inch row-spacing. I would expect to see significantly higher levels of white mold in irrigated soybeans planted to 15-inch rows. Risk of white mold remained steady for soybeans planted to 30-inch rows and irrigated. Risk remains high in the southwestern and western portions of Wisconsin for soybeans planted to 30-inch rows and irrigated.

Forecasts indicate cool temperatures with chances of precipitation for the next week. I would expect white mold risk to hold steady. Continue to growth-stage soybeans and note that map predictions should be considered for making white mold management decisions if soybeans are flowering AND soybean canopies are nearly closed. We have visited fields all over the state and find soybeans well into the reproductive growth stages. We are quickly getting outside the window of opportunity to treat for white mold. Any remaining white mold management decisions should be made very soon.

To see the maps and this article on Damon Smith’s blog click here.

**Does the Application of a Plant Growth Regulator and Fungicide Increase Oat Yield**

Shawn Conley, State Soybean and Small Grains Specialist, John Gaska, Senior Outreach Specialist, Adam Roth, Program Manager

In an Oat Shock:

- The addition of Palisade PGR and Trivapro fungicide increased oat yield and reduced lodging
- Increased N rate above those recommended in A2809 did not increase oat yield
- Growers should explore expected ROI and apply BMP’s prior to adding any additional inputs

A research trial was initiated in the spring of 2017 at the Arlington Agricultural Research Station, Arlington, WI to assess the impact of a plant growth regulator (PGR) (Palisade, trinexapac-ethyl, Syngenta) and a foliar fungicide (Trivapro, benzovindiflupyr+azoxystrobin+propiconazole, Syngenta) in oats. Click here to view or print PDF.

**Time to Begin Evaluating Corn Fields for Harvest**

For most corn fields in Wisconsin, pollination and the “lag” phase of kernel development is wrapping up and we are in a “linear” phase of development where kernels are accumulating 4-6 bu/A per day. The grain filling period of corn lasts approximately 60 days. The “lag” phase
starts with the kernel ovule fertilized by pollen and for the next 7-10 d cell division occurs in the endosperm. The “linear” phase is most important for yield and lasts about 40 days. For a 200 bu/A yield level, starch accumulates in the kernel endosperm at the rate of 5 bu/A per day during this phase. The grain filling period ends with a 7-10 d “maturation” phase when the kernel moves from 50% kernel milk to the black layer stage. During grain filling most management options are no longer available unless irrigation is available when water and N can be applied during the first half of grain filling.

Click here to continue to full article

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**Corn Rootworm**

Bryan Jensen, UW Extension and IPM Program

Useful corn rootworm management data can, and should be gathered during the month of August. Digging and washing roots will provide insight on efficacy of rootworm management tactics. Scouting for beetles will give you a perspective regarding forthcoming pressure in continuous corn fields.

The window is closing for the best time to observe rootworm feeding. Most larvae have now completed feeding. Root regeneration has started and will only continue to get worse. Especially when soil moisture is adequate. Although root regeneration is good, it does mask larval feeding and may not give you a true picture of efficacy.

I don’t hear or see enough people digging roots to validate their management choices. You wouldn’t consider using herbicides in a weed management program without ever checking to see if it worked. Do the same for corn rootworms. Just because the field has not lodged doesn’t mean there isn’t economic damage. Conversely, lodging is not always a definitive sign of rootworm feeding.

Dig and wash roots starting in late July through August. This information will validate your management choice but can also provide important information regarding Bt resistance and presence/absence of first-year western corn rootworms.

To quantify root damage, use the Nodal Injury Scale developed by J. Oleson, Y. Park, T. Nowatzki and J. Tollefson at Iowa State University. This is an excellent rating system and more information is available at http://www.ent.iastate.edu/pest/rootworm/nodeinjury/nodeinjury.html. Essentially, the injury scale uses a decimal system. The number to the left of the decimal indicates the number of complete nodes (or equivalent number of nodes) of roots pruned back to within 1 ½ of the stalk. The number to the right of the decimal indicates the % of the next node of roots pruned. A root rating of 1.2 indicates the equivalent on one complete nodes of roots is pruned and 20% of the next.

There are several UW Extension resources available to guide you through the root rating procedure and rating system.

Corn Rootworm: How to Validate Your Management Decision (Video)

Rating corn roots for rootworm feeding (document)

Scouting for corn rootworm beetles is every bit as important as it was decades ago. Perhaps more so because of the need to diversify management practices that reduce the potential for resistance. The Pest Survey Bulletin has reported low beetle counts in the 2015 and 2016 growing seasons. Several locations did not report finding a single beetle.

Counting adults during the egg laying period (mid-August to early-September) will give a good indication of expected larval damage in next year’s corn. The process is simple and doesn’t take a great amount of time when compared to the overall value. By establishing the level of adult infestation during the current year, you can determine whether preventative treatments will be necessary in the following year’s corn crop.

The grower will need to manage corn rootworm larval populations if you find an average of 0.75 beetles per plant during any one of the three field samplings. This data will help you make appropriate management decisions based on observed field populations. Several UW Extension resources are available to help with beetle scouting.

Corn Rootworm Beetle Scouting (document)

How to Scout for Rootworm Beetles (Video)
Wisconsin hosts the 2017 North American Manure Expo: August 22 & 23

George Koepp, Columbia County UW-Extension, Richard Halopka, Clark County UW-Extension

The latest equipment and technology for professional manure management will be on display at the 2017 North American Manure Expo on August 22 and 23, 2017 at the University of Wisconsin-Madison Arlington Agricultural Research Station.

“The North American Manure Expo is the largest manure equipment demonstration event in the U.S. and Canada,” said George Koepp, University of Wisconsin-Extension Columbia County agriculture agent. “The show combines demonstrations of the latest developments in manure handling equipment with presentations on the latest research in manure management.”

In addition to the tours, field demonstrations, hands-on product and safety education, exhibitor booths, and commercial vendor displays, 24 educational sessions will be hosted in four separate themed tents. The themes are

1. Manure Safety and Manure Management Tools
2. Manure as a Fertilizer Resource
3. Manure Application Techniques and Technology
4. Manure and Environmental Protection

The three tours are:

— Statz Brothers, Inc. in Sun Prairie — featuring the manure digester and bedding recycling facility of the Statz Brothers Farm. The tour will go through one of the dairy barns and then stop at the manure digester to hear about the digester design, solids separation for bedding recycling and the use of the gas and energy bi-products of the manure digester system. The last stage of the system takes liquid to the storage lagoon.

— Arlington Agriculture Research Station — includes three features: (1) the Arlington Agriculture Research Station Dairy Manure Run-off Study which compares manure run-off on no-till versus chisel plow and soil finisher tillage. The application timings are early December and late January. Results of the study to date and implications for manure management and time of manure applications will be discussed; (2) Blaine Dairy, which has a state of the art sand separation and reclamation system that is less than one year old; and (3) the UW Swine Research facility to view their manure separation and application systems.

— Endres Composting — Jeff Endres’ dairy operation utilizes a compost bedding management and bedding recycling system. Bedding pack manure and sawdust are mixed with free stall manure before going to the compost pad that is under roof. Compost windrows are built over 4 weeks and with scheduled turning produce finished compost over the next 8 weeks. This compost system helps balance P & K for the farm nutrient management plan and brings the opportunity for better distribution of nutrients and a wider window for application. This tour also includes field application of compost.

“We’re excited to showcase the latest innovations, research and solutions to manure management that are developed through the working relationships between professional manure applicators, UW-Extension and research scientists, and equipment manufacturers,” said Richard Halopka, UW-Extension Clark County crops and soils agent.

Tours on Aug. 22 require a $20 registration fee. There is no cost to attend any of the Expo events on Aug. 23.

For a complete list of tours, demonstrations, exhibitors, educational sessions, and sponsorships visit the Manure Expo website http://www.manureexpo.com/.

The North American Manure Expo is presented by the Professional Nutrient Applicators Association of Wisconsin, University of Wisconsin-Extension – Nutrient Management Team, Annex Business Media, Manure Manager Magazine and is supported in part by a consortium of land grant universities and conservation agencies from across the United States.

UW/ UWEX Plant Disease Diagnostic Clinic (PDDC) Update, August 10

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 29, 2017 through August 4, 2017.

PLANT/SAMPLE TYPE, DISEASE/DISORDER, PATHOGEN, COUNTY

FIELD CROPS
Vegetable Crop Update No. 16-
August 4, 2017

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

Newsletter No. 16– August 4, 2017

Thank you to the staff and participants for making the Lelah Starks Foundation Seed Farm Field Day an outstanding event. Despite the unseasonable cool temperatures, attendance was excellent with great discussion.

In the UWEX Vegetable Crop Updates newsletter this week, please find info on P-Day and DSV accumulations, national and WI late blight updates and cucurbit downy mildew updates.

Late blight was confirmed from a second WI county earlier this week – Pierce County – along our west side. The case was on commercial tomato. Please see recommendations for prevention in this newsletter.

Wisconsin DATCP Pest Bulletin, Aug 10, 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. 15 of the Wisconsin Pest Bulletin is now available at: https://datcpservices.wisconsin.gov/pb/pdf/08-10-17.pdf

LOOKING AHEAD: Corn rootworm beetle counts low for early August

FORAGES & GRAINS: Surveys find below-threshold levels of all alfalfa pests

CORN: Annual flight of western bean cutworm moths subsiding

SOYBEANS: Soybean aphid densities remain extremely low

FRUITS: Fewer codling moths and apple maggots reported this week

VEGETABLES: Tomato late blight confirmed in Pierce County

NURSERY & FOREST: Assorted reports from this week’s nursery inspections

DEGREE DAYS: Degree day accumulations through August 9, 2017

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.
AGRONOMY/SOILS FIELD DAY
Cultivating a Resilient Agriculture
Tours & Exhibits of Current Crops & Soils Research
Wednesday, August 30, 2017
Arlington Agricultural Research Station
Registration @ 8 am
Tours depart from the Public Events Facility at 8:30 am, 10:30 am, & 1:45 pm
Lunch provided by UW-Madison Badger Crops Club
{suggested donation $5/person}

Tour A: Building Soil Health {8:30 & 10:30 am}
- Soils of Wisconsin (Alfred Hartemink)
- Importance of perennialization & diversification (Gregg Sanford & Randy Jackson)
- Do cover crops improve soil health? (Matt Ruark)
- Trade-offs with soil management decisions (Francisco Arriaga)

Tour B: Managing Short- & Long-term Risk in Cropping Systems {8:30 & 10:30 am}
- How many corn hybrids should I grow on my farm? Minimizing risk & maximizing options (Joe Lauer)
- Harnessing G x E x M interactions in soybean (Shawn Conley)
- Weed management over 27 years in the Wis. Integrated Cropping Systems Trial (Nathan Drewitz & Dave Stoltenberg)
- Identification, distribution & herbicide resistance of waterhemp & Palmer amaranth (Sam Marquardt & Mark Renz)

Tour C: Perennial Forages to Accomplish Diverse Goals {10:30 am & 1:45 pm}
- Alfalfa: What have we learned & where are we headed? (Dan Understander)
- When & where do fungicides pay in forage crops (Damon Smith)
- Intermediate wheatgrass for forage & grain (Valentin Picasso)
- Silvopasture: Benefits & challenges of trees in grazing systems (Keefe Keeley, Diane Mayerfeld & Steve Ventura)

Tour D: Designing Landscapes for Profit, Clean Water, Stable Climate & Biodiversity {10:30 am & 1:45 pm}
- Yahara 2070: Using scenarios to understand impacts of future watershed land use (Chris Kucharik)
- SmartScape™: Developing a decision support tool for farmscape management (Claudio Gratton)
- Biodiversity in the soil: Exploring how soil microbes influence crops (Thea Whitman)

Tour D will be held in the Auditorium

Lunch & Panel Discussion @ 12:00 to 1:45pm, in the Auditorium
“What Do We Mean by Resilient Agriculture?”
Randy Jackson (Moderator; Professor, Dept. of Agronomy, UW-Madison) – Panelists include
Andy Bensend (A B Farms, Dallas, Wis.)
Sarah Lloyd (Special Products Coordinator, Wis. Farmers Union)
Heidi Johnson (Crops & Soils Educator, Dane Co. UW-Extension)
Matt Ruark (Professor & Extension Specialist, Dept. of Soil Science, UW-Madison)

The Arlington Research Station is located on Hwy. 51, about 5 miles south of Arlington & 15 miles north of Madison. Watch for Field Day signs.
For more information contact the Dept. of Agronomy 608/262-1390 or the Dept. of Soil Science 608/262-0485.

In the event of rain, presentations will be held inside.

Sponsored by the UW-Madison College of Agricultural & Life Sciences/Arlington Agricultural Research Station/Departments of Agronomy & Soil Science, & UW Cooperative Extension

{Certified Crop Advisors: 5 CEU credits have been requested}
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**Video- Pigweed Identification Emphasizing Flowering Characteristics**

Mark Renz UW Madison Associate Professor and Extension Specialist, Sam Marquardt UW Madison Assistant Outreach Specialist

Pigweeds aren’t going away anytime soon. In fact, Palmer amaranth and waterhemp are moving into new areas of Wisconsin where they previously did not exist.

We recently posted a new video that demonstrates how to differentiate flowering pigweed species. This video will display easy to spot differences in the male and female flowering structures of different pigweeds including: red-root pigweed, smooth pigweed, waterhemp, and Palmer amaranth.

While it is relatively easy to identify these species while in flower, realize that if you intend to control plants it is much more desirable to identify it when plants are young and vegetative (e.g. < 6 inches tall). A range of methods are available that are effective at controlling the plants and preventing seed production at this stage. Few options for effective control exist once plants are taller than this, especially when they are flowering.

As most people know, Palmer and waterhemp have been found to be really good at developing resistance to a range of herbicides. While many reasons exist for this like their dioecious nature and producing many seeds (Palmer can have up to 2 million seeds per plant) we need to try to limit the spread of these plants in Wisconsin. Unfortunately, we also need to realize that we don’t have control of all of the pathways that may result in new infestations in Wisconsin.

We need to keep a vigilant eye out for new populations and eradicate them before they establish a large seed-bank and impact our agronomic fields. To do this we need to become effective at identifying these different species. Previous resources created this year include:

- A vegetative identification video
- A waterhemp factsheet
- A Palmer amaranth factsheet
Wisconsin Research

In 2013 and 2014 University of Wisconsin-Madison evaluated several common corn and soybean residual herbicides’ impact on cover crops. The cover crops were established following silage harvest. All herbicides were applied at full-labeled rate and at the latest application timing.

- Results from this experiment indicate that risk of herbicide carryover injury is dependent on year, herbicide application rate, and cover crop species by herbicide combination.

Summary of cover crop injury nine weeks after establishment at the Arlington Agricultural Research Station, Arlington, WI in 2013

<table>
<thead>
<tr>
<th>Herbicide Treatment Active Ingredient(s)</th>
<th>Winter Rye</th>
<th>Radish</th>
<th>Crimson Clover</th>
<th>Annual Ryegrass</th>
<th>Oats Peas Mixture</th>
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<tbody>
<tr>
<td>Corn Herbicides</td>
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<tr>
<td>flumetsulam</td>
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<tr>
<td>S-metolachlor + mesotrione + S-metolachlor + glyphosate + mesotrione</td>
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<tr>
<td>flumioxazin + pyroxasulfone</td>
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<tr>
<td>Soybean Herbicides</td>
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<td>flumioxazin</td>
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<td>pyroxasulfone</td>
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<tr>
<td>S-metolachlor</td>
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<tr>
<td>fomesafen</td>
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<tr>
<td>imazethapyr</td>
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<tr>
<td>imazethapyr + glyphosate</td>
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</table>

- In 2014, little to no carryover injury was seen to any of the cover crops. More precipitation events and warmer temperatures in 2014 likely led to greater pesticide dissipation and degradation.

- Risk of herbicide injury is present when residual herbicides are used in the cropping system, however, weather conditions from herbicide application until cover crop establishment will influence when and if injury occurs.

Cover Crops for Forage Use

A crop is classified as a cover crop when no biomass is harvested. A cover crop becomes a forage crop when biomass is harvested for feed. A cover crop can be used for forage, however, most pesticide labels do not provide the plant back restriction time required from pesticide application to grazing or harvest for cover crops, only forage crops. If a cover crop will be planted later this cropping season, consider the rotational restrictions for any herbicides used in the field the past few seasons. Establishing a cover crop within this rotation restriction time period is allowed, however, the grower accepts a risk that the cover crop may not establish and will not be harvested for forage.

Herbicide Considerations for Cover Crop Establishment

Daniel H. Smith, Southwest Regional Specialist, Nutrient and Pest Management Program, Matt Ruark, Soil Science Extension Specialist, Department of Soil Science, Shawn Conley, State Soybean and Small Grains Specialist, Department of Agronomy, University of Wisconsin-Madison and University of Wisconsin Extension

Commonly applied corn and soybean residual herbicides have the potential to injure cover crops planted after the herbicide application. Residual herbicides have activity in the soil for a period of time after application, and may remain active after the cash crop is harvested. A wide range of management choices (tillage, residue management, herbicide application rate, timing, method, and active ingredient), soil properties (soil moisture, temperature, pH, and organic matter) and environmental conditions (temperature and precipitation between herbicide application and cover crop establishment) can affect the residual properties of the herbicide.

Cover crop injury will be dependent upon species sensitivity to the herbicide, application timing and rate, management choices, and environment conditions between herbicide application and cover crop establishment. Residual herbicide activity is often hard to predict prior to cover crop establishment and variable from one year to another.

If you find a new population of palmer amaranth or waterhemp, please report it! Follow this link to the Report a Pigweed page on the Wisconsin First Detector Network website to learn more about pigweeds and how to report them or email us directly at reportapigweed@gmail.com.
Following grain harvest there is often not enough growing degree units left to justify many of the other cover crop species— as little growth and benefit will occur.

For more information on herbicide and cover crop interactions:
University of Missouri- [http://weedscience.missouri.edu/extension/pdf/cover_crop_carryover_slideshow.pdf](http://weedscience.missouri.edu/extension/pdf/cover_crop_carryover_slideshow.pdf)
Purdue University- [https://ag.purdue.edu/btny/weedscience/Documents/covercropcarryover.pdf](https://ag.purdue.edu/btny/weedscience/Documents/covercropcarryover.pdf)

For more information on Wisconsin cover crop recommendations and research: [http://fyi.uwex.edu/covercrop/](http://fyi.uwex.edu/covercrop/)

For more information on cover crops and cover crop species selection:
[http://mccc.msu.edu/](http://mccc.msu.edu/)
[http://mccc.msu.edu/selector-tool/](http://mccc.msu.edu/selector-tool/)

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**Timely Videos about Brown Stem Rot, Sudden Death Syndrome of Soybean**

Damon Smith, Ph.D, Assistant Professor, Plant Pathology

Two short videos timely for telling the difference between the two diseases are linked here.

[https://www.youtube.com/watch?v=-KWu9dPCDXY](https://www.youtube.com/watch?v=-KWu9dPCDXY)

In this video Damon Smith talks about **brown stem rot (BSR) of soybean**. BSR can be a significant problem in years where the spring is wet and cool resulting in infection by the fungus Phialophora gregata soon after emergence. However, BSR is often not noticed until the reproductive growth stages when foliar symptoms typically develop. The discussion here includes tips on spotting BSR, determining the difference between BSR and sudden death syndrome and how to manage the disease.

[https://www.youtube.com/watch?v=DaDfQplrFxw](https://www.youtube.com/watch?v=DaDfQplrFxw)

In this video Smith talks about **sudden death syndrome (SDS) of soybean**. SDS can be a significant problem in years where the spring is wet and cool resulting in infection by the fungus Fusarium virguliforme soon after emergence. However, SDS is often not noticed until the reproductive growth stages when foliar symptoms typically develop. The discussion here includes tips on spotting SDS, determining the difference between SDS and brown stem rot and how to manage the disease.

For more information about SDS visit the Soybean Plant Health Topics webpage at [http://fyi.uwex.edu/fieldcrop-pathology/soybean_pests_diseases/](http://fyi.uwex.edu/fieldcrop-pathology/soybean_pests_diseases/) and scroll down.

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**Corn Southern Rust Update – August 19, 2017**

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

Southern rust of corn has been confirmed in Wisconsin by the University of Wisconsin-Madison [Plant Disease Diagnostics Clinic](http://fyi.uwex.edu/fieldcrop-pathology/soybean_pests_diseases/). The sample came in from Kenosha Co. on August 18, 2017. This find is not entirely surprising considering the rapid movement of the southern rust pathogen from the southern U.S. to the northern U.S. this season. The latest southern rust map can be found at [http://ext.ipipe.org](http://ext.ipipe.org).

For more information on southern rust, please see my [previous post on the subject](http://fyi.uwex.edu/fieldcrop-pathology/). You also should visit the Crop Protection Network Southern Rust information page where you can download a brand new fact sheet about southern rust on corn and management of the disease. Note that late planted corn will be more vulnerable to yield loss from the disease. Corn that is still silking (R1 growth stage) to milk (R3 growth stage) is vulnerable to yield loss by southern rust. Corn that is at the R4 (dough) growth stage or later is not as vulnerable and will likely not respond to a fungicide application. Even if corn is at a vulnerable growth stage, remember that we also have to have conducive weather for the pathogen. Extremely dry weather is not conducive for disease. High humidity and temperatures in the 80s favor disease increase.

Continue to scout and growth-stage your corn. If you find evidence of what you think is southern rust, I would encourage you to send it to the [Plant Disease Diagnostics Clinic](http://ext.ipipe.org) for confirmation.

This article is from Damon Smith’s blog site at [http://fyi.uwex.edu/fieldcrop-pathology/](http://fyi.uwex.edu/fieldcrop-pathology/)
Wisconsin DATCP Pest Bulletins, Aug 24 & 17, 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. 17 of the Wisconsin Pest Bulletin is now available at:


FORAGES & GRAINS: Potato leafhopper counts still well below threshold

CORN: Corn rootworm beetle counts the lowest in 46 years of surveys

SOYBEANS: Soybean aphid densities remain low in most fields

FRUITS: Large codling moth flights continue at a few orchard sites

VEGETABLES: More cases of late blight confirmed by UW

NURSERY & FOREST: Assorted reports from recent nursery inspections

Volume 62 Issue No. 16 of the Wisconsin Pest Bulletin is now available at:

https://datcpservices.wisconsin.gov/pb/pdf/08-17-17.pdf

Wisconsin Fruit News-August 18, 2017

Janet van Zoeren and Christelle Guédot, UW-Extension

Please enjoy this issue of the Wisconsin Fruit Newsletter (http://go.wisc.edu/54qa68). This week you can read about:

* Insect Diagnostic Lab update
* Plant Disease Diagnostic Clinic update
* Honeyberries, Haskaps, Blue honeysuckle (Part II)
* Organic production and IPM guides available
* Cranberry degree-day map and update
* Powdery mildew in the vineyard
* Social wasps in vineyards
* Wine and table grape developmental stages
* Vineyard netting protection
* Revisiting the insecticide Assail
* Preventing Patulin in apples
* Apple maturity index report

Follow us

UW/UWEX Plant Disease Diagnostic Clinic (PDDC) Update, August 18

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. The 8/18/17 PDDC Wisconsin Disease Almanac (i.e., weekly disease summary) is now available at PDDC-Summary-August 18, 2017

All of the weekly reports are on the PDDC website at https://pddc.wisc.edu/wisconsin-disease-almanac-2017/

WI Vegetable Crop Update No. 17- August 11, 2017

Amanda Gevens, Associate Professor & Extension Specialist, Potato & Vegetable Pathology, Plant Pathology Department

PDF >>> UWEX Vegetable Crop Updates Newsletter #17

Includes:

- late blight and early blight risks based on weather,
- late blight confirmations for WI and the US (WI confirmations now from Waukesha, Pierce, and Dane Counties, all US-23),
- cucurbit downy mildew (none yet in WI),
- onion downy mildew (first detection today in south-eastern WI).
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 August 12, 2017 through August 18, 2017.

<table>
<thead>
<tr>
<th>PLANT/SAMPLE TYPE</th>
<th>DISEASE/DISORDER</th>
<th>PATHOGEN</th>
<th>COUNTY</th>
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<tbody>
<tr>
<td><strong>BROAD LEAFED WOODY ORNAMENTALS</strong></td>
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<td>Burning Bush</td>
<td>Cytospora Canker</td>
<td>Cytospora sp.</td>
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<td>Lilac (Japanese Tree)</td>
<td>Verticillium Wilt</td>
<td>Verticillium sp.</td>
<td>Dane</td>
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<td>Maple (Silver)</td>
<td>Anthracnose</td>
<td>Discula sp.</td>
<td>Ozaukee</td>
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<td></td>
<td>Chlorosis</td>
<td>None</td>
<td>Ozaukee</td>
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<td></td>
<td>Tar Spot</td>
<td>Rhytisma sp.</td>
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<td>Sphaeropsis sp.</td>
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<td>Tubakia iowensis</td>
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<td>Tubakia Leaf Spot</td>
<td>Tubakia dryina</td>
<td>Dane</td>
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<tr>
<td>Oak (Red)</td>
<td>Anthracnose</td>
<td>Discula sp.</td>
<td>Dane</td>
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<td>Oak Wilt</td>
<td>Ceratocystis fagacearum</td>
<td>Marathon</td>
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<td>Tubakia Leaf Spot</td>
<td>Tubakia dryina</td>
<td>Dane</td>
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<tr>
<td>Oak (Unspecified)</td>
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<td>Discula sp.</td>
<td>Dane</td>
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<td>Tubakia Leaf Spot</td>
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<td>Rose (Rugosa)</td>
<td>Black Spot</td>
<td>Marssonina rosae</td>
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<td>Puccinia sorghi</td>
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<td>Septoria glycines</td>
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<td></td>
<td>Charcoal Rot</td>
<td>Macrophomina phaseolina</td>
<td>Dodge</td>
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<td>Fusarium Root Rot</td>
<td>Fusarium oxysporum</td>
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<td>Tobacco Streak</td>
<td>Tobacco streak virus</td>
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<td><strong>HERBACEOUS ORNAMENTALS</strong></td>
<td><strong>VEGETABLE CROPS</strong></td>
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<td>Apple Scab</td>
<td>Venturia inaequalis</td>
<td>Eau Claire</td>
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<td>Blist Spot</td>
<td><em>Pseudomonas syringae</em> pv. <em>papulans</em></td>
<td>Lafayette</td>
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<td>Root/Crown Rot</td>
<td><em>Phytophthora</em> sp.</td>
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<td>Corm Rot</td>
<td><em>Penicillium</em> sp., <em>Fusarium</em> sp.</td>
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<td>Mild Mosaic</td>
<td><em>Bean yellow mosaic virus</em></td>
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<td>Xanthomonas Leaf Spot</td>
<td><em>Xanthomonas</em> sp.</td>
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<td>Stigmina sp.</td>
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<td>Rhizosphaera Needle Cast</td>
<td><em>Rhizosphaera kalkhoffii</em></td>
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<td>Celery</td>
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<td>Pumpkin</td>
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<td><em>Xanthomonas campestris</em></td>
<td>Dubuque (IA)</td>
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<td><em>Phoma cucurbitacearum</em></td>
<td>Waushara</td>
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<td>Plectosporium Blight</td>
<td><em>Plectosphaerella cucumerina</em> (<em>Plectosporium tabacinum</em>)</td>
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<td>Tomato</td>
<td>Bacterial Speck</td>
<td><em>Pseudomonas syringae</em> pv. <em>tomato</em></td>
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<td>Early Blight</td>
<td><em>Alternaria solani</em></td>
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<td>Late Blight</td>
<td><em>Phytophthora infestans</em></td>
<td>Jefferson</td>
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<td>Septoria Leaf Spot</td>
<td><em>Septoria lycopersici</em></td>
<td>Dane, La Crosse, Marathon, Marquette</td>
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<td>Watermelon</td>
<td>Bacterial Leaf Spot</td>
<td><em>Xanthomonas</em> sp.</td>
<td>Waushara</td>
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<td>SPECIALTY CROPS</td>
<td>Apple Mosaic</td>
<td>Apple Mosaic Virus</td>
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<td>Hop</td>
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<td>Phoma sp.</td>
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<td>Unidentified Carlavirus Disease</td>
<td>Unidentified carlavirus</td>
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2017 UW Extension Pest Management Update Meetings

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

Be sure to get the latest field crop pest management updates, by attending the 2017 PMU Meetings!

Mark your calendars as the UW Extension’s Pest Management Update meetings are just around the corner (November 6-10). This year’s program will follow the same format as in 2016. Meetings will either be in the morning or afternoon and will run for 3 hours. Morning meetings will begin promptly at 9am and run to 12pm. Afternoon meetings will begin at 1pm and conclude at 4pm.

The full schedule with dates, meeting locations, and registration contact information are in the link below. Please register with the host agent at least 1 week prior to the meeting at the location you wish to attend.

FULL MEETING SCHEDULE ATTACHED AT END.

Please attend the meeting location at which you registered. Each meeting in the series is a separate county-based event and host agents cannot interchange registrant fees or meal counts.

Three hours of Certified Crop Advisor CEU credits in pest management are requested for each session.

The speakers will be extension specialists Mark Renz, weed scientist, perennial cropping systems; Dan Heider, IPM outreach specialist, Bryan Jensen, entomologist, and Damon Smith, field crop pathologist.

2017 Pest Management Update Topics:

- Integrated Pest Management Updates in corn, soybeans, alfalfa, and small grains: Update on new products and/or use of existing products as well as brief highlights of the 2017 pest situations in each crop.
- Wisconsin herbicide resistance update by Mark Renz
- In-depth weed diagnostic and management training by Mark Renz and Dan Heider

Western Bean Cutworm Scouting

Bryan Jensen, UW Extension and IPM Program

DATCP’s Pest Bulletin has indicated an uptick in 2017 Western bean cutworm (WBC) activity (26/trap) compared to 2016 (20/trap). Now will be a good time to assess local populations and/or if control recommendations were successful by looking for ear damage in the field.
Research: Key Management Practices That Explain Soybean Yield Gaps

Shawn Conley, Soybean and Wheat Extension Specialist, UW-Madison Department of Agronomy

To date, identification of causes of yield gaps (difference between maximum yield potential and measured yield in producer yields) has been restricted to small geographic areas. In this study, researchers developed a novel approach that combines producer-reported data and a spatial framework to identify explanatory causes of yield gap over large geographic regions with diversity of climate, soils, and water regimes (rainfed and irrigated).

This research focused on soybean in the North-Central United States region, which accounts for approximately one third of global soybean production, as a case study to provide a proof of concept on the proposed approach.

We developed a novel approach that combines producer survey data with a biophysical spatial framework for identifying causes of yield gaps over large agricultural areas with diversity in climate and soils.

The approach was applied to both rainfed and irrigated soybean in the North Central US region, and it was based on producer survey data on yield and management collected from 3,568 elds over two crop seasons.

The analysis indicated that the average regional yield potential was 71 bu ac-1 (rainfed) and 85 bu ac-1 (irrigated), with a respective yield gap of 22% and 13% of maximum yield potential.

Planting date, tillage, and in-season foliar fungicide and/or insecticide were identified as explanatory causes for yield variation, with planting date the most consistent management factor that influenced soybean yield.

To view the full report, click below:


Slugs in a Cereal Rye Cover Crop

Bryan Jensen, UW Extension and IPM Program

As the growing season winds down, some growers will be considering a broadcast planting of cereal rye seed over unharvested crops to establish an early cover. Consider scouting for slugs prior to broadcasting the cereal rye. Slugs can severely reduce stands by feeding on the seed prior to germination. The cool and wet conditions we had in most of Wisconsin during 2017 has been conducive to slugs.

To avoid surprises, scout fields prior to broadcasting seed. Slug damage can be found under many field scenarios including low residue conventional tillage systems. However, the potential for slug damage is usually higher when weed pressure is high, fields remain wet for prolonged periods of time or have heavy soils as well as no-till or any other management system which leaves high amounts of surface residue.

Slugs are nocturnal feeders and difficult to monitor during daytime hours. Looking for old or current damage on the standing crops may provide limited information. Instead, take advantage of a slug’s habit of needing to hide during the day. Consider placing a large flat object on the soil surface that slugs can crawl under during daylight hours. Sections of scrap lumber or old singles (with the mineral side up) are ideal. Cardboard may also work if it doesn’t get blown or washed away. However, direct contact with the soil surface is important. Monitor these structures for several days during daylight hours.

There are no established economic thresholds using this method and effectiveness may vary according to competing habitat. However, their use will confirm the presence/absence of slugs.

Seed purchases will soon be considered as will selection (+/-) for Bt traits. In the absence of local pheromone traps, scouting for late season field damage can help with those decisions.

The UW IPM program has a video about WBC on YouTube; check out the link below.

http://bit.ly/2xQp2qG
If slugs are present and you feel there is a concern based on field history, consider drilling the cereal rye after harvest. Drilling buries the seed out of reach of slugs and will significantly reduce economic damage to seed.

Putting Farm Safety into Practice, Silage and Grain Harvest

John Shutske, Agricultural Engineering Specialist, UW-Madison Biological Systems Engineering Department

A modern farm can be a dangerous and unforgiving place. Late summer and fall are high-risk times as harvest operations ramp up quickly. In Wisconsin, we always have tight time windows to get hay, silage, and other crops harvested and put into storage to make it through the year. It’s that urgency and time pressure that can contribute to mistakes that often lead to injuries or even death. Machinery plays a major factor in serious farm injuries. Here are some ways to put safety into practice!

Think Like a Pilot – Or, a NASCAR Driver

The best way to prevent harvest season injuries is to invest prep time to get your equipment ready for the busy season. Adjustments and maintenance that improve safety also can also help maximize the quality and value of your crop.

As a farm owner, manager, or operator, think of your role the same way an airplane pilot or race car driver would. That means you need to establish something like a pre-flight or pre-race checklist — a run-through and shake-down to make sure all systems are “go.”

Consult your operator’s manuals. Are shields in place – on tractors, choppers, blowers, wagons, combines, and augers? Replace any questionable hydraulic hoses and know the status of any bearings and belts that you know might need to be repaired during the season. Many terrible farming injuries happen when a breakdown occurs. People get super-stressed or frustrated and then do something that they know might be dangerous. Also make sure to carry a fully-charged, 10-pound ABC dry chemical fire extinguisher on all machines including trucks.

Gear Up for Highway Travel

Minimizing the time you spend on the highway is always the best way to reduce hazard levels. However, that’s often not practical. As we roll into fall with fewer daylight hours upon us, make sure SMV emblems are bright and clean and that all flashers and lights are fully operational. Plan highway travel whenever possible to avoid busy rush times including the early morning commute and the rush to school. Evening times are high risk as people are in a hurry to get home from work or school and the sun gets low in the sky. Make sure you fully understand and comply with all other state and local lighting, marking, width, and weight limit laws.

Train, Coach, & Create Expectations with Your Employees

Many farms have hired workers who help with harvest – As an employer, spend time with them. Talk about your safety expectations. A few of our larger farms now publish a monthly or bi-weekly newsletter, often available in English, Spanish and other languages. Operator’s manuals and safety decals are a great source of information. The same is true if you’re hiring custom harvest work. As a farm owner and operator, you must create and expect a culture of safety. With everybody involved in the operation, demonstrate and walk through safe procedures. Show people what to do if something unexpected happens. Make sure everyone involved in the operation has a reliable way to communicate. But realize that if it’s a smartphone, steps need to be taken to make sure people are not distracted by phone use.

For more information on ways to make your farm a more safe and healthy place to work, check out the UW Agricultural Safety and Health Center website at:

https://fyi.uwex.edu/agsafety/

Wisconsin DATCP Pest Bulletin
August 31, 2017

Krista Hamilton, Entomologist, Bureau of Plant Industry/Division of Agricultural Resource Management, Wisconsin DATCP

Volume 62 Issue No. 18 of the Wisconsin Pest Bulletin is now available at:


PLEASE NOTE: This is the last regularly scheduled bulletin for 2017. A final summary issue will be published in November upon completion of our fall pest surveys. THANK YOU to the many cooperators, farmers, county agents and consultants who contributed their time to the survey program again this season.
LOOKING AHEAD: Fall nuisance insects expected to begin appearing in September

FORAGES & GRAINS: Pea aphid counts are up in most alfalfa fields

CORN: Significant corn earworm captures in Columbia and Dodge counties

SOYBEANS: Soybean aphid survey finds lowest state average population in 17 years

FRUITS: Spotted wing drosophila recommendations for fall raspberries

VEGETABLES: End-of-season clean up important for squash bug control

NURSERY & FOREST: Assorted reports from recent nursery inspections

DEGREE DAYS: Degree day accumulations through August 30, 2017

Wisconsin Fruit News-Sept 1, 2017

Janet van Zoeren and Christelle Guédot, UW-Extension

This issue of the newsletter continues with information about managing insect and disease pressure, as well as beginning to focus on fall maturity indices for grapes and apples. We hope you find it useful.

http://go.wisc.edu/26h2r5

• Insect Diagnostic Lab update
• Plant Disease Diagnostic Clinic update
• Picnic/sap beetles
• Spotted wing drosophila update
• Cranberry degree-day map and update
• Wine and table grape developmental stages
• Silver leaf of apple
• Reduced risk insecticide: Venerate
• Apple maturity index report
• Armillaria root rot on tree fruits

UW/UWEX Plant Disease Diagnostic Clinic (PDDC) Update, Sept 1

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. The 8/18/17 PDDC Wisconsin Disease Almanac (i.e., weekly disease summary) is attached at end of this newsletter.

Yearly PDDC files are also on the internet at >>>


UWEX Vegetable Crop Updates #20-#21 posted

Amanda Gevens, Associate Professor & Extension Specialist, Potato & Vegetable Pathology, UW-Madison Plant Pathology Department

Newsletter No 21 September 4, 2017

• updated disease severity values for late blight forecasting. In all locations, the weather has been very favorable for late blight
• updates on late blight confirmations in WI, the US
• updates on cucurbit downy mildew in the US. To date, we have not had a commercial or home garden confirmation of downy mildew on cucurbits or basil

Newsletter No 20 August 26, 2017

• updates on late blight as well as cucurbit downy mildew
• Additional reports of late blight in Iowa and Kenosha Counties this week. Details included in newsletter
2017 Wisconsin Pest Management Update Meetings

The schedule for the Wisconsin Pest Management Update meeting series is listed below. Presentations will include pest management information for Wisconsin field and forage crops. Speakers will include Mark Renz, weed scientist, Damon Smith, plant pathologist, Dan Heider IPM specialist and Bryan Jensen, entomologist.

The format will be the same as in 2016. Meetings will either be in the morning or afternoon and will run for 3 hours. Morning meetings will begin promptly at 9am and run to 12pm. Afternoon meetings will begin at 1pm and conclude at 4pm.

Three hours of Certified Crop Advisor CEU credits in pest management are requested for each session.

Please make your reservation with the host agent at least one week prior to the scheduled meeting date.

<table>
<thead>
<tr>
<th>DATE</th>
<th>LOCATION</th>
<th>HOST AGENT</th>
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<tbody>
<tr>
<td>Monday November 6</td>
<td>Marshfield Agricultural Research Station 2611 Yellowstone Drive  Marshfield, WI 54449</td>
<td>Richard Halopka  Clark County Extension Courthouse Room 104 517 Court Street Neillsville, WI 54456 (715) 743-5121</td>
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<tr>
<td>1pm - 4pm</td>
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<tr>
<td>Tuesday November 7</td>
<td>Chippewa Falls Lake Hallie Eagles Club 2588 Hallie Road Chippewa Falls, WI 54729</td>
<td>Jerry Clark  Chippewa County Extension 711 N. Bridge Street Chippewa Falls, WI 54729 (715) 726-7950</td>
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<tr>
<td>9am - 12pm</td>
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<tr>
<td>Wednesday November 8</td>
<td>Belmont Inn &amp; Suites 103 West Mound View Avenue  Belmont, WI 53510</td>
<td>Kory Stalsberg  Grant County Extension P.O. Box 31 Lancaster, WI 53813 (608) 723-2125</td>
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<tr>
<td>9am - 12pm</td>
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<tr>
<td>Wednesday November 8</td>
<td>Janesville Holiday Inn Express Janesville  3100 Wellington Place  Janesville, Wisconsin 53546 (I-90 and US Highway 14, West on 14)</td>
<td>Nick Baker  Rock County Extension 51 S. Main Street Janesville, WI 53545 (608)-757-5698</td>
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<td>1pm - 4pm</td>
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<td>Thursday November 9</td>
<td>Fond du Lac University of Wisconsin – Fond du Lac Rm 113 University Center  400 University Drive  Fond du Lac, WI 54935</td>
<td>Loretta Ortiz-Ribbing  Fond du Lac County Extension 227 Admin/Extension Bldg. 400 University Dr. Fond du Lac, WI 54935 (920) 929-3171</td>
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<td>9am - 12pm</td>
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<tr>
<td>Thursday November 9</td>
<td>Kimberly Liberty Hall 800 Eisenhower Drive Kimberly, Wisconsin 54136 (Hwy. 441, College Avenue Exit, East 1 block)</td>
<td>Kevin Jarek  Outagamie Co. UW Extension 3365 W. Brewster St. Appleton, WI 54914 Phone: 920-832-5128</td>
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<td>1pm - 4pm</td>
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<td>Friday November 10</td>
<td>Sparta Jake’s Northwoods 1132 Angelo Road Sparta, WI 54656</td>
<td>Bill Halfman  Monroe County Extension 14345 County Hwy B Sparta, WI 54656 (608) 269-8722</td>
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<tr>
<td>9am - 12pm</td>
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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 August 26, 2017 through September 1, 2017.

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<thead>
<tr>
<th>PLANT/SAMPLE TYPE</th>
<th>DISEASE/DISORDER</th>
<th>PATHOGEN</th>
<th>COUNTY</th>
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<td>Boxwood</td>
<td>Phyllosticta Blight</td>
<td>Phyllosticta sp.</td>
<td>Milwaukee</td>
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<td></td>
<td>Volutella Blight/Canker</td>
<td>Volutella sp.</td>
<td>Milwaukee, Waukesha</td>
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<td>Cotoneaster</td>
<td>Coniothyrium Leaf Spot</td>
<td>Coniothyrium sp.</td>
<td>Milwaukee</td>
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<td>Root/Crown Rot</td>
<td>Pythium sp.</td>
<td>Milwaukee</td>
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<td>Dogwood (Pagoda)</td>
<td>Root/Crown Rot</td>
<td>Pythium sp.</td>
<td>La Crosse</td>
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<td>Elm (American)</td>
<td>Sphaeropsis Canker</td>
<td>Sphaeropsis sp.</td>
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<td>Honeylocust</td>
<td>Thyronectria Canker</td>
<td>Thyronectria austroamericana</td>
<td>Rock</td>
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<td>Lilac</td>
<td>Powdery Mildew</td>
<td>Oidium sp.</td>
<td>Crawford</td>
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<td>Septoria Leaf Blight</td>
<td>Septoria sp.</td>
<td>Crawford</td>
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<td>Maple (Japanese)</td>
<td>Verticillium Wilt</td>
<td>Verticillium sp.</td>
<td>Dane</td>
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<td>Oak (Bur)</td>
<td>Anthracnose</td>
<td>Discula sp.</td>
<td>Walworth</td>
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<td>Phyllosticta Leaf Spot</td>
<td>Phyllosticta sp.</td>
<td>Walworth</td>
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<td>Tubakia Leaf Spot</td>
<td>Tubakia dryina</td>
<td>Dane, Dodge, Walworth</td>
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<td>Oak (White)</td>
<td>Anthracnose</td>
<td>Discula sp.</td>
<td>Ramsey (MN)</td>
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<tr>
<td>Rose</td>
<td>Gloeosporium Canker</td>
<td>Gloeosporium sp.</td>
<td>Waukesha</td>
</tr>
<tr>
<td>Smokebush</td>
<td>Verticillium Wilt</td>
<td>Verticillium sp.</td>
<td>Dane</td>
</tr>
<tr>
<td><strong>FIELD CROPS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corn</td>
<td>Common Rust</td>
<td>Puccinia sorghi</td>
<td>Grant</td>
</tr>
<tr>
<td></td>
<td>Gray Leaf Spot</td>
<td>Cercospora sp.</td>
<td>Grant</td>
</tr>
<tr>
<td>Soybean</td>
<td>Fusarium Root Rot</td>
<td>Fusarium sp.</td>
<td>Manitowoc</td>
</tr>
<tr>
<td></td>
<td>Phytophthora Root Rot</td>
<td>Phytophthora sp.</td>
<td>Manitowoc</td>
</tr>
<tr>
<td>FRUIT CROPS</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>--------------------------------</td>
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</tr>
<tr>
<td>Apple</td>
<td>Root/Crown Rot</td>
<td>Phytophthora sp., Pythium sp.</td>
<td>Shawano</td>
</tr>
<tr>
<td>Currant</td>
<td>Septoria Leaf Blight</td>
<td>Septoria sp.</td>
<td>Bayfield</td>
</tr>
<tr>
<td>Grape</td>
<td>Phomopsis Cane And Leaf Spot</td>
<td>Phomopsis viticola</td>
<td>Dane</td>
</tr>
</tbody>
</table>

| HERBACEOUS ORNAMENTALS         |                      |                      |                      |
| Colus                          | Downy Mildew         | Peronospora sp.      | Jefferson            |
|                                | Root Rot             | Rhizoctonia sp.      | Jefferson            |
| Peony                          | Botrytis Blight      | Botrytis cinerea     | Milwaukee            |
|                                | Powdery Mildew       | Oidium sp.           | Milwaukee            |

| NEEDLED WOODY ORNAMENTALS      |                      |                      |                      |
| Arborvitae                     | Root/Crown Rot       | Phytophthora sp.     | Winnebago            |
| Juniper                        | Sphaeropsis Canker   | Sphaeropsis sp.      | Lake (IL)            |
| Spruce                         | Rhizosphaera Needle Cast | Rhizosphaera kalkhoffii | Milwaukee            |

| VEGETABLE CROPS                |                      |                      |                      |
| Cucurbit (Unspecified)         | Zucchini Yellow Mosaic | Zucchini yellow mosaic virus | Trempealeau          |
| Pepper                         | Phytophthora Fruit Rot | Phytophthora capsici  | Rock                 |
| Tomato                         | Early Blight          | Alternaria solani    | Jefferson            |
|                                | Septoria Leaf Spot    | Septoria lycopersici | Jefferson, Bayfield,
|                                |                       |                      | Polk, Portage        |
| Watermelon                     | Phytophthora Fruit Rot | Phytophthora capsici  | Rock                 |

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.
As we approach fall and harvest fields that may have weed escapes, we should have a plan to limit the spread of weed seeds. Weeds seeds can easily be spread through harvest and tillage equipment. Taking the time to clean equipment before moving to the next field or bringing to the farm for the first time can be a worthwhile investment with many advantages. For example, a single common waterhemp can produce 250,000+ very small seeds that can easily be stored on equipment and redistributed in fall field operations. Regardless of the weed species, avoiding the spread of the weed seed is necessary to prevent future costly weed management problems. Avoiding very heavy weed infestations and consider harvesting or tilling these areas last, especially when herbicide resistant weed species are present.

Combine Cleaning

The combine operation manual should be reviewed prior to any cleaning produce. Always read, follow, and understand the manual and related safety instructions. Cleaning a combine will produce a lot of dust and debris and personal protective equipment should be used. A clean combine may also reduce the risk of a fire occurring during a busy harvest season.

Combine cleaning can be very time consuming, and a thorough cleaning should be done prior to storage or when combining a field of identity preserved grain. A quick field cleaning operation can be done with a leaf blower or an air compressor. Cleaning the head, feeder house, rock trip, threshing and separating unit, sump on the unloading augur, and grain tank will help reduce the chance of spreading weed seeds. Removing any residual debris on the outside of the combine, engine bay, and residue management system is also necessary. Investing 30 minutes in combine cleaning after harvesting a weedy field will reduce the chance of spreading problematic weed populations to other fields.
Tillage Equipment

Soil on tillage equipment may also contain weed seeds and should be removed before transport. Although time consuming, removing as much soil as possible from tillage equipment and equipment tires will lessen the chances of transporting weed seeds from field to field. Avoid weed seed movement to help control future costs of weed control and herbicide resistance management.

More information on herbicide resistance management:

More information on combine and tractor fires:
https://fyi.uwex.edu/agsafety/machinery/combine-and-tractor-fires-a-burning-problem/

More information on where grain hides in a combine:
https://www.extension.purdue.edu/extmedia/GQ/GQ-49-W.pdf

More information on combine clean-out procedures:
https://www.youtube.com/watch?v=8cucJiloT4

Harvest Considerations for Variable Soybean Maturity

Shawn P. Conley

Variable soil types, knolls, flooding and ponding, variable planting dates and late season drought have left many growers with extreme in-field variability of soybean maturity. There are areas in fields where the soybean seed is 13% or less moisture adjacent to areas with green seed. The prevailing question is “When should the grower harvest?” Obviously there is no simple answer, as each field is different. However here are a set of guidelines to consider:

1. The easiest answer is harvest the field at two different times. Take what is dry today and come back in two weeks and harvest the rest. The challenge with this approach is that today’s equipment is large and not easily moved from field to field. Furthermore many growers rent or own land over large areas where this is impractical and the whole field must be taken at once. So……

2. The next simple answer is wait until the whole field is ready to go. As noted in a past article entitled Drought Induced Shatter, we are seeing areas across the Midwest where shattering is occurring. The general rule of thumb is 4 seeds per square foot = one bushel yield loss. At local cash prices below $9.00 per bushel this is hard to see happen and not harvest. Furthermore, waiting will also lead to moisture loss in the field. As we learned the past few years, you do not get compensated for harvesting below 13% moisture. So…..

3. If growers are concerned with shatter and/or other harvest losses the next logical approach is harvest ASAP. This opens a whole new can of worms. Harvesting ASAP will lead to a mixture of dry, wet, and immature (green) soybean seed. Be aware that if you harvest this mixture regardless of the ratio, your combine moisture sensor may not detect the correct moisture, be prepared for that initial shock when the elevator tests the grain. Next be prepared for the dockage. Most combines will leave more beans in the pod when they are wet or immature. These beans may end up on the ground or in the grain tank as unthreshed soybeans. Harvesting seed with this variability will be very similar to handling frosted soybean seed so discounts may occur due to moisture shrink, damage (green beans are considered damage), foreign material (this is usually higher when harvesting wet beans), test weight, and heating. If you choose on farm storage to address some of the dockage concerns please refer to Soybean Drying and Storage for questions.

4. The last consideration I would bring forward is that the mature areas are likely going to be the low yielding pockets due to drought whereas the yet to mature areas will likely be the higher yielding areas within the field. So, in short, which yield environment would you rather focus your time and efforts to protect?

The question ultimately comes down to the bottom line and where you make the most $$$. If shatter is not occurring and you have good equipment that does not incur significant harvest loss, will harvesting grain that is over-dry make you more money than harvesting seed that may incur significant dockage? My guess is yes but you tell me!

Fall is Still a Good Time to Sample for SCN and Other Plant Parasitic Nematodes

Ann MacGuidwin, Damon Smith and Shawn P. Conley

The WI Soybean Marketing Board (WSMB) sponsors free nematode testing to help producers stay ahead of the most important nematode pest of soybean, the soybean
cyst nematode (SCN). Eggs of SCN persist in the soil between soybean crops so a sample can be submitted any time that is convenient. The soil test report indicates the number of eggs in the sample and is useful for selecting the right variety for the next soybean crop. Retests of fields planted with SCN-resistant varieties over multiple years shows how the nematode population is responding to variety resistance and provides an early warning should the nematode population adapt to host genetics.

In the spring of 2012, the WSMB expanded the nematode testing program to include other pest nematodes in addition to SCN. These nematodes are less damaging to soybean than SCN but can cause enough yield loss to warrant treatment. As is the case for SCN, there are no rescue treatments for nematodes so the primary purpose of this year’s soil test is to plan for next year’s crop. Soil samples collected in corn for nematode analysis have predictive value for explaining yield if they are collected before the corn V6 growth stage. Sampling early in the season will provide information about the risk potential for the current corn crop AND the next soybean crop.

The assays used to recover nematode pests other than SCN in soil require that the nematodes are alive. So, it is important to keep the samples moist and at least room temperature cool. Collecting a sample that includes multiple cores ensures that there will be plenty of root pieces to assay. It is not necessary to include live plants in the sample. The soil test report will indicate which pest nematodes are present and at what quantities and their damage potential to soybean and corn based on the numbers recovered.

For more information on SCN testing and management practices or to request a free soil sample test kits please contact: Jillene Fisch at (freescntest@mailplus.wisc.edu) or at 608-262-1390.

Remember the first step in fixing a nematode problem is to know if you have one! The WSMB sponsored nematode testing program provides you that opportunity.

Weed Identification Series, Biennial Wormwood

Mark Renz UW Madison Associate Professor and Extension Specialist, Chelsea Zegler UW Madison Associate Research Specialist

Biennial wormwood is not new to Wisconsin, as has been in the state over 100 years, but I have seen it spreading throughout Wisconsin for the past decade. It likes lighter soils that are heavily disturbed, but has become a large problem in agronomic fields in nearby states. While I haven’t seen it in any fields yet, I am sure it is present as many of our roadsides are lined with this species.

This plant has unique attributes as it has biennial and annual biotypes. Apparently the Midwest United States predominately have the annual biotype, so don’t let the name fool you. What is most concerning about this plant is that it doesn’t start to germinate until well into June and continues to germinate through July. Thus it is often not controlled by PRE herbicides, cultivation, and even some POST treatments. Also others have reported that poor control with many of our commonly used herbicides (e.g. ALS, PPO, HPPD).

As this species is clearly spreading the best option is to detect populations early and prevent them from establishing in fields. See this factsheet to learn about how to ID this “new weed” to Wisconsin.

For more information on this species, including biology and control click here:

Food, Land & Water Conference

Jim VandenBrook, Wisconsin Land+Water

Wisconsin Land+Water invites you to join us at the Food, Land and Water conference on October 16-17, 2017 at the Osthoff Resort in Elkhart Lake. If you care about the future of Wisconsin’s agriculture and the land and water resources we all depend on, you’ll want to be part of this. Be part of the conversation that takes Wisconsin forward in a positive way. The Food, Land and Water Conference
provides the platform for you to engage with folks involved in farming, conservation, academia, government, and elected office to chart the way forward. Wisconsin can have a vibrant farm economy and safe, clean water, and you can help set the agenda.

Participants will have the opportunity to:

Hear about a two year-long effort that poses a wide range of strategies to sustain agriculture and land and water resources in Wisconsin.

Help set long-range priorities facing surface water quality, groundwater quality, groundwater quantity, and the future of working lands.

Become a charter member of the Food, Land & Water Initiative to shape the long-term future of a sustainable Wisconsin.

Attendees will have a chance to listen, discuss, build new connections and working relationships, and think about our shared resources in a more systematic and collaborative way.

Check out the agenda reports from workgroups, and registration information at this site: Food, Land and Water. Be heard and be involved. Wisconsin needs you.

Start Managing for Fusarium Head Blight Now

By Shawn P. Conley and Damon Smith

Most WI winter wheat growers dodged the Fusarium head blight (FHB or scab) bullet again in 2017; though many farmers especially those in SW WI became so disgusted with dockage and rejections in both 2014 and 2015 they still didn’t plant a single acre this year. Therefore as we prepare to put the 2018 wheat crop into the ground here are a few considerations for managing FHB before we drop a single seed.

1. Crop rotation matters. Data from our long-term rotation studies indicate that wheat following soybean provides the greatest yields. The next best options are wheat following corn silage (6.5% less) then corn for grain (21% less). Wheat following alfalfa or another leguminous crop are also good options, though the N credits following alfalfa may best be served going to corn. Furthermore, background fungal pressure (residue on and in soil) from the FHB fungus will be greater following corn then soybean or another legume, however know that spores that infect your wheat crop can arrive from outside the field. Please click to see more information on the Top 8 Recommendations for Winter Wheat Establishment in 2017.

2. Variety selection matters. Data from our 2015 and 2016, and 2017 WI Winter Wheat Performance Test shows variable yield and disease performance among the varieties listed. Select those varieties that have both good to excellent FHB (2015) and Stripe Rust (2016 & 2017) resistance and high yield. When evaluating disease resistance, low numbers for both incidence and severity can be helpful, but the major focus should be placed on incidence (measure of the number of symptomatic plants in a stand).

3. Application timing matters. One of the biggest challenges year in and year out is improper fungicide application timing. Our data suggests that on susceptible (Hopewell) or moderately susceptible varieties (Kaskaskia) equal efficacy of the fungicide Prosaro at a rate of 6.5 fl oz/acre can be achieved when applied between Feekes 10.5.1 (anthesis) and 5 days after anthesis. Given the variability of head emergence and anthesis across a landscape it may prove best to wait a few days until the whole field is flowering than to apply too soon. If the extruded anthers have turned from yellow to white across the whole field then you are likely too late. Remember it roughly takes a wheat head 7 days to completely self-pollinate.

4. Choose the right fungicide class. Make sure you use the appropriate fungicide product and class to manage FHB. The label for products containing strobilurin active ingredients (FRAC group 11) ends prior to flowering. Late application can actually lead to increased mycotoxin levels. Triazole containing products (FRAC group 3) are recommended for FHB control. For a list of products and efficacy ratings, visit the Field Crops Fungicide Information Page.

5. Harvest timing and flash drying. The word on the street is that if FHB appears to be a problem in 2018 elevators will push growers to harvest early (18% moisture or higher) and subsequently dry grain to mitigate mycotoxin levels. While drying grain to 13% or less moisture is a good storage practice, know this process may kill the
pathogen but any mycotoxin levels already in the grain will not dissipate. Vomitoxin is a very stable molecule and IS NOT degraded by heat, freezing, or drying.

Top 8 Recommendations for Winter Wheat Establishment in 2017

Shawn Conley, State Soybean and Small Grains Specialist
John Gaska, Outreach Specialist, Damon Smith, State Field Crops Pathology Specialist

Top 8 winter wheat establishment recommendations:

1. Variety selection: please see the 2017 WI Winter Wheat Performance Test
2. Plant new seed (DO NOT plant saved seed).
3. A fungicide seed treatment is recommended for winter wheat in WI, especially for seed damaged by Fusarium head blight (FHB)
4. Wheat should be planted 1 inch deep.
5. The target seeding rate for wheat planted from September 15th to October 1st is 1,300,000 to 1,750,000 seeds per acre.
6. The optimal seeding rate for wheat planted after October 1st should be incrementally increased as planting date is delayed to compensate for reduced fall tillering.
7. Crop rotation matters.
8. Plant between September 20 and October 5

To continue reading the full story with details, view this fact sheet:

Wisconsin Fruit News-Sept 15, 2017

Janet van Zoeren and Christelle Guédot, UW-Extension

http://go.wisc.edu/2971sb

We’re nearing the end of the 2017 summer season, and, with that, we’re winding down the newsletter for the year. We will publish one more issue this fall (October 6th). After that, we will sum up the season with a couple supplemental issues. We hope you enjoyed the newsletter this summer!

This week you can read about:

• Nearing the end of the 2017 season
• Plant Disease Diagnostic Clinic update
• Organic insecticides for spotted wing drosophila control
• Wine and table grape developmental stages
• Peach leaf curl and plum pockets
• Apple maturity index report

Cover Crop Field Days

Daniel H. Smith, Nutrient and Pest Management Program, University of Wisconsin-Madison

Iowa County Uplands Watershed Field Tour

An upcoming field day on October 9th will provide an update to ongoing cover crop work on farms in the Iowa County Uplands producer-led watershed group. The field day will include cover crops used in dairy, grain, and produce systems. No-till establishment, interseeding, and manure management will be discussed. The field day will begin at 9 a.m. and conclude by 1:00 p.m. Lunch will be provided but registration is required. Click here for registration and additional information.

Cover Crop Interseeding Plot Tour

An upcoming plot tour on October 3rd at the Lancaster Agricultural Research Station will provide an update to cover crop interseeding work at the research station. The plot tour will an open house format and plots will be available from 10 a.m. to 12:00 p.m. The address of the research station is: 7396 WI 35 & 81 Lancaster, WI 53813. No advanced registration is required and the field day is free.
Wisconsin UWEX Vegetable Crop Updates, Issue 22, 23

Amanda Gevens, Associate Professor & Extension Specialist, Potato & Vegetable Pathology, UW-Madison Plant Pathology Department

These newsletter issues are now on the Plant Path website.

**Newsletter No 22, September 10, 2017**

- updates on tomato/potato late blight (with late season info for potato)
- updates on cucurbit downy mildew
- updates on Phytophthora crown and fruit rot on cucurbits/solanaceous crops

**Newsletter No 23, September 17, 2017**

- updates on late blight
- updates on cucurbit downy mildew
- for fields where our weather stations were located, DSVs are being calculated with our agricultural weather tool (link embedded in the newsletter) to continue to provide weather information that may be use in your end of season management decisions

Are fall applications of N to winter wheat beneficial?

Carrie Laboski, Professor and Extension Soil Fertility/Nutrient Management Specialist, UW-Madison

The short answer is maybe.

Research in 2014 through 2016 demonstrated that N application at green-up generally resulted in the greatest economic return compared to application at Zadok’s growth stage 30 (GS30, approx. Feekes 5). See past articles for details: https://npketc.soils.wisc.edu/2017/03/25/tips-for-nitrogen-management-in-winter-wheat/ and https://npketc.soils.wisc.edu/2016/03/09/time-your-spring-nitrogen-applications-to-maximize-winter-wheat-yield-2/. In this same study, we had a couple of fall N application treatments. We found that 120 lb N/a applied as SuperU at planting yielded the same as 120 lb N/a as ammonium nitrate applied at green-up at five of eight sites years (Table 1, located on following page). However, this rate was an over application of N at all five of these sites, so it’s not surprising that there wasn’t a yield differ-ence between fall and green-up applications. At Chilton in 2014 and Lamartine and Pipe in 2016 fall application resulted in significantly lower yield than green-up application. These data suggest that some N loss occurred in fall and early spring.

Additional treatments evaluated the effect of N application timing and source when 60 lb N/a was applied. This rate is an under application of N relative to the economic optimum N rate for the green-up application at all sites except Pipe in 2015 and was very close to the optimum N rate at Chilton in 2014. Using suboptimal N rates is helpful to evaluate how different N sources and timings perform. Fall and fall/GU split applications yielded similarly to green-up applications at four of six sites (Table 1). At the other two sites, substantial fall N loss resulted in reduced yields with fall N applications.

Growers should consider fall application of N to winter wheat with caution. If a wet fall is forecast and/or fields are known to be wetter, waiting to apply N until green-up may be prudent. The N lost under these conditions will have a negative impact on profitability.

Growers should consider taking a pre-plant soil nitrate test (PPNT) to assist in determining a N application rate for wheat. This consists of taking a 0 to 2 foot- soil sample in 1 foot-increments at/near the time of planting. Basic sampling intensity guidelines are to collect 15 cores randomly throughout at 20-acre area and composite into one sample. Consider reducing the area represented by each sample to correspond to soil types and/or management zones. For more information on wheat N rate guidelines and how to adjust rates with the PPNT see: http://ipcm.wisc.edu/download/pubsNM/Wheat_MRTN_extended_06_2013.pdf
Table 1. Effect of N application timing and source at selected N rates effected winter wheat yield in Eastern Wisconsin from 2014 to 2016.

<table>
<thead>
<tr>
<th>N Rate/Timing†</th>
<th>N Source‡</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Chilton</td>
<td>Lamar-tine</td>
<td>Chilton</td>
</tr>
<tr>
<td>0 lb N/a</td>
<td></td>
<td>79</td>
<td>60</td>
<td>103</td>
</tr>
<tr>
<td>60 lb N/a</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Fall</td>
<td>ESN</td>
<td>-- ¶</td>
<td>--</td>
<td>121 ab</td>
</tr>
<tr>
<td>Fall/GU</td>
<td>SuperU/AN</td>
<td>--</td>
<td>--</td>
<td>123 ab</td>
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<tr>
<td>GU</td>
<td>AN</td>
<td>106 a $</td>
<td>93 a</td>
<td>127 a</td>
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<tr>
<td></td>
<td>Urea</td>
<td>102 a</td>
<td>87 a</td>
<td>122 ab</td>
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<tr>
<td></td>
<td>SuperU</td>
<td>102 a</td>
<td>87 a</td>
<td>126 a</td>
</tr>
<tr>
<td></td>
<td>ESN:Urea</td>
<td>--</td>
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<td>117 bc</td>
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<td>AN</td>
<td>90 b</td>
<td>87 a</td>
<td>108 d</td>
</tr>
<tr>
<td></td>
<td>Urea</td>
<td>91 b</td>
<td>81 b</td>
<td>113 cd</td>
</tr>
<tr>
<td></td>
<td>SuperU</td>
<td>89 b</td>
<td>83 b</td>
<td>110 d</td>
</tr>
<tr>
<td>120 lb N/a</td>
<td></td>
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</tr>
<tr>
<td>Fall</td>
<td>SuperU</td>
<td>93 b</td>
<td>97</td>
<td>125 a</td>
</tr>
<tr>
<td>GU</td>
<td>AN</td>
<td>109 a</td>
<td>102</td>
<td>126 a</td>
</tr>
<tr>
<td>GS30</td>
<td>AN</td>
<td>92 b</td>
<td>93</td>
<td>107 b</td>
</tr>
</tbody>
</table>

† Fall, at planting; GU, spring green up; GS30, Zadok's growth stage 30 (~Feekes 5); Fall/GU, 30 lb N/a applied at SuperU in fall at planting plus 30 lb N/a applied as AN at GU.
‡ AN, ammonium nitrate; ESN:Urea, 50:50 blend of ESN and urea
§ For a given year, location, and N application rate, treatments with the same letter are not significantly different at the 90% confidence level.
¶ --, these treatments were not part of the study in 2014.
The registration period for the February 2, 2018 CCA Exam begins October 2 and closes December 8. Online registration is available on the CCA website. Study materials for the International exam may also be found on the CCA website by clicking on the Exam tab.

One of the most common questions I get is "How should I start studying for the exam"? My answer is always the same. Start by going to the CCA website and review the Performance Objectives for the exam(s) you want to take. The International and Wisconsin Performance Objectives list of all the potential subject matter which can be on each exam. Use them as a study guide to determine areas where you are prepared and areas where more study is needed.

To help prepare for the Wisconsin exam, UW Extension has prepared several resources which you may find useful. Approximately 50 short YouTube videos have been prepared specifically for the state exam. Although all performance objectives are not covered in these videos, the major points of crop production are addressed. The videos are grouped in three playlists:

- Soil Science Fundamentals for Field Crops
- Field and Forage Crop Fundamentals
- Weed, Insect and Disease IPM for Field Crops

Additionally, over 100 electronic resources have also been developed by UW Extension specialists and can be useful for both exam preparation and as well as background information for general and specific crop production recommendations. A list of relevant UW-Madison websites is also available at the end of this list which contains more references.
To be considered, the 2018 Nomination Form must be completed and 2 letters of reference must be provided and submitted to Bryan Jensen. Nomination Criteria will help with the nomination process.

Deadline for submission is March 2, 2018. The 2018 recipient will receive a commemorative plaque and a $500 cash award at the January 2018 CCA Luncheon. Contact Bryan Jensen (bmjense1@wisc.edu, 608-263-4073) if you have questions.

Soybean Response to Nitrogen Application Across the U.S.

Shawn Conley, State Soybean and Small Grains Specialist

IN A BEAN POD:

- Nitrogen application decisions had a small effect on soybean yield
- Major management decisions (e.g., irrigation, seeding rate) interact with nitrogen response
- Limited nitrogen responses suggest that positive economic returns from nitrogen are unlikely

Introduction

U.S. soybean [Glycine max (L.) Merr.] production has increased by 60% from 1996 to 2016 due to a 30% increase in area planted to soybean, and due to better genetics and improved crop management practices. While these historic seed yield increases have been substantial, U.S. soybean producers continually search for opportunities to optimize crop management and increase soybean seed yield, including applying fertilizer N to soybean.

Read the rest of the article here>>> http://www.coolbean.info/library/documents/Nstudy.pdf

Wisconsin Fruit News-Oct 6, 2017

Janet van Zoeren and Christelle Guédot, UW-Extension

http://go.wisc.edu/091685

This is the final newsletter of the 2017 season. Thank you for reading! We look forward to a quiet winter, and to be starting up again in the spring!

This week you can read about:

- Last issue this season — thanks for reading!
- Fruit insect report
- Plant Disease Diagnostic Clinic update
- Fall treatment for Phytophthora root rot of raspberry
- Post-harvest management in the vineyard
- Wine and table grape developmental stages
- Brown marmorated stink bug update / late-season apple damage

Nominations open for the 2018 Wisconsin CCA of the Year

Bryan Jensen, UW Extension and IPM Program

The Wisconsin CCA Board is now accepting nominations for the 2018 Wisconsin CCA of the Year Award. This award is designed to recognize a CCA who is highly innovative, delivers exceptional customer service, has shown that they are a leader in their field, and have contributed to the exchange of ideas and the transfer of agronomic knowledge to the Wisconsin agriculture industry.

Customers, employees, colleagues or others associates may nominate a candidate. The selection committee is comprised of current WI CCA Board. Nominees will be evaluated solely on the information provided on the nomination form and accompanying letters of recommendation.

A Visual Guide to Soybean Growth Stages

Shawn Conley, State Soybean and Small Grains Specialist

Understanding and being able to correctly identify the growth stages of soybean is important for making sound agronomic management decisions. This guide describes the growth stages starting with germination, progressing through the vegetative stages (V) and concluding with the reproductive stages (R). Coolbeans!

To view the visual guide, go to this site: http://www.coolbean.info/library/documents/2017_Soybean_Growth-Dev_Guide_FINAL.pdf
UW/UWEX Plant Disease Diagnostic Clinic (PDDC) Update October 6

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 September 30, 2017 through October 6, 2017. The 10/06/17 PDDC Wisconsin Disease Almanac (i.e., weekly disease summary) is now available at:

PDDC Summary- October 6, 2017

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Sampling Soils for Testing

John B. Peters and Carrie A.M. Laboski

A soil test is the only practical way of determining whether lime and fertilizer are needed for a specific crop. However, if a soil sample does not represent the general soil conditions of the field, the recommendations based on the sample may be misleading. An acre of soil to a 6-inch depth weighs about 1,000 tons, yet less than 1 ounce of soil is used for each test in the laboratory. Therefore, it is very important that the soil sample be representative of the entire field.

This four page publication is attached at the end of this newsletter.

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UW/UWEX Plant Disease Diagnostic Clinic (PDDC) Update October 13

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 October 7, 2017 through October 13, 2017. The 10/13/17 PDDC Wisconsin Disease Almanac (i.e., weekly disease summary) is now available at:

PDDC Summary- October 13, 2017

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Weed Identification Series, Barnyardgrass

Mark Renz UW Madison Associate Professor and Extension Specialist, Chelsea Zegler UW Madison Associate Research Specialist

Well the season is nearly over, but we wanted to point out a weed species that had a prolific year: Barnyardgrass. This species has long been present in Wisconsin, but until this year I rarely saw it in fields. This year it was common throughout the state in fields, on the side of roads, in ditches, wetlands, and even in urban areas. I chalk this up to the wet year, as this species prefers wet vs dry soils. Once established however it will survive in a range of conditions, so it should be no surprise that it ranks as one of the world’s worst weeds. It has been documented to be a serious weed in over 42 countries.

Barnyardgrass is a summer annual grass that begins to germinate in May with the foxtails. If present it can grow as large if not larger than foxtails, but one of the reasons I bring up this species at the end of the year is it can produce huge numbers of seeds. Research has shown that one plant can produce in excess of 750,000 seeds. Doing some quick math and looking at some of the populations I think it is safe to assume we will have large barnyardgrass seedbanks in our soil for years to come. The bad news is that seeds can remain viable for up to 4 years, even longer under specific conditions.

The good news is this plant is a fairly easy annual grass to identify. It lacks a ligule and auricle (see factsheet if you don’t know what those are) and has flattened stems. These three characteristics make it easy to identify when young before it flowers. We have a range of products in crops we grow that effectively manage this plant.

So in conclusion be on the lookout for this plant in 2018, especially if seen nearby in 2017. Check out the factsheet to learn about how to ID this species.

For more information on this species from the Weed Science Society of America click here:

http://wssa.net/wp-content/themes/WSSA/WorldOfWeeds/barnyardgrass.html
New CCAs!

Bryan Jensen, UW Extension

The Wisconsin CCA Board takes great pride in welcoming a new group of Certified Crop Advisers. Please review the list and extend them a warm welcome and congratulations on a job well done!

Wisconsin CCA’s Achieving Certification in 2016:

- Ailts, Joe
- Allen, Zachary
- Braml, Joe
- Cartwright, Julie
- Clark, Christine
- Cornell, Caleb
- Franz, Benjamin
- Hedtcke, Janet
- Henderson, Haily
- Hinz, Douglas
- Kell, Eric
- Kloth, Ashley
- Kuenstler, Steven
- Matelski, Morgan
- Meyer, Bill
- Mlostek, David
- Morgan, Danielle
- Much, Kyle
- Murry, Bradly
- Pape, Andrew
- Post, Ethan
- Sander, Craig
- Scheel, Ashley
- Sytsma, Paul
- Wisth, Hannah

CCAs Reaching the 20 Year Milestone!

Bryan Jensen, UW Extension

Just as we celebrate the new CCAs it is also time to honor those who have been certified for 20 years! Look through the list and see how many names you recognize. Wisconsin Agriculture is a small world. My guess is you will recognize several. Congratulations to all!

CCAs reaching the 20 year milestone:

- Afdahl, Kurt
- Bauer, David
- Bensend, Andy
- Brunner, William
- Busse, Lisa
- Durst, Daniel
- Edgar, Christopher
- Ehlers, Kevin
- George, Patricia
- Haynes, Mark
- Heise, Randy
- Hoffmann, Steven
- Knutzen, Paul
- Kufalk, Brad
- Mullooly, Patrick
- Petersen, Brent
- Petrie, Thomas
- Popple, Timothy
- Prill, Todd
- Riemer, Clark
- Schofield, Matthew
- Weihing, Mark
- West, David
- West, Brian
A soil test is the only practical way of determining whether lime and fertilizer are needed for a specific crop. However, if a soil sample does not represent the general soil conditions of the field, the recommendations based on the sample may be misleading. An acre of soil to a 6-inch depth weighs about 1,000 tons, yet less than 1 ounce of soil is used for each test in the laboratory. Therefore, it is very important that the soil sample be representative of the entire field.

Before collecting soil samples, you should determine the overall approach of the nutrient management program. This will affect the number of samples needed and method by which samples will be taken. Specifically, will nutrient and lime applications be made at a single uniform rate for the whole field being tested or will applications be made at variable rates to field areas that have been identified as having different soil test levels?

**Goals of a soil sampling program**

When sampling soils for testing and obtaining fertilizer and lime recommendations, the most common objectives are to:

1. Obtain samples that accurately represent the field from which they were taken.
2. Estimate the amount of nutrients that should be applied to provide the greatest economic return to the grower.
3. Estimate the variation that exists within the field and how the nutrients are distributed spatially.
4. Monitor the changes in nutrient status of the field over time.

**Selecting a soil sampling strategy**

Before selecting a sampling strategy, consider analytical costs, time and equipment available, field fertilization history, and the likelihood of a response to applied nutrients.

**Sampling fields for a single whole field (uniform) recommendation**

With conventional sampling, you will receive a single set of nutrient and lime application guidelines that are based on sample averages. The sampling guidelines in Table 1 are based on when a field was last tested (more or less than 4 years ago) and whether the field was responsive or nonresponsive the last time it was tested. The field is considered to be in the responsive range if either soil test phosphorus (P) or potassium (K) levels are in the high (H) category or lower. A nonresponsive field is one where both soil test P and K levels are in the very high (VH) or excessively high (EH) categories.

Each sample should be made up of a minimum of 10 cores to ensure accurate representation of the nutrient needs of the field. Research has shown that taking 10 to 20 cores provides a more representative sample of the area than when samples are made up of fewer cores. When gathering soil cores to make a composite sample, use a W-shaped sampling pattern (as shown in Figure 1) over the whole area the sample represents. Be sure to thoroughly mix the cores before placing approximately 2 cups in the sample bag.

For best results, submit multiple samples for all fields. When at least three samples are provided for a field, samples that are significantly higher than the field average may be discarded and an adjusted average calculated. Using an adjusted

**Table 1. Recommended sample intensity for uniform fields.**

<table>
<thead>
<tr>
<th>Field characteristics</th>
<th>Field size (acres)</th>
<th>Suggested number of samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fields tested more than 4 years ago OR fields testing in the responsive range</td>
<td>All fields</td>
<td>1 sample/5 acres</td>
</tr>
<tr>
<td>5–10</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>11–25</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>26–40</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>41–60</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>61–80</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>81–100</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Nonresponsive fields tested within past 4 years</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Collect a minimum of 10 cores per sample.*
average helps ensure that no part of the field is under-fertilized.

Where only one or two samples are taken in a field, no sample will be discarded, whereas one sample can be discarded if three or four samples are taken, and up to two samples may be discarded from fields having five or more samples. The criteria that determine if soil samples should be omitted from the field average include:

- If the average soil test P for a field is 35 parts per million (ppm) or less, samples that exceed the field average by more than 5 ppm may be removed and the field average recalculated.
- If the field average is greater than 35 ppm P, no samples will be discarded.
- If the average soil test K for a field is 175 ppm or less, samples that exceed the field average by more than 20 ppm may be discarded and the field average recalculated.
- If the field average is greater than 175 ppm K, no samples will be discarded.

It is not appropriate to vary nutrient application rates across sampling areas when using the whole field (uniform) soil sampling scheme.

**Sampling fields for site-specific management**

Site-specific management requires a distinct picture of the magnitude and location of soil test variability. Sampling soils for site-specific management usually involves taking many more composite samples than sampling for a single recommendation. A global positioning system (GPS) is used to record the geographical coordinates of each sample. This information is used to generate an application map by using various mathematical techniques to interpolate the nutrient application rate between sampling points. Using variable rate application technology, these fields can be managed more intensively than the conventional approach of one fertilizer and lime rate per field. A careful evaluation of the economics of this intensive of a sampling system needs to be done before proceeding.

When using a site-specific approach to soil sampling, sample handling and testing are similar to the traditional system, but recommendations may vary from one part of the field to another, and these areas must be managed separately to realize the potential advantages of intensive soil sampling.

Several sampling strategies can be used to guide variable-rate fertilizer and lime applications. Grid sampling uses a systematic approach that divides the field into squares of approximately equal size (grid cells). The sampling technique used is known as grid-point sampling. A grid-point sample consists of at least 10 cores collected from a small area (10-foot radius) around a geo-referenced point. When using a grid sampling approach, Wisconsin research recommends a sampling strategy based on an unaligned systematic grid (Figure 2). Sampling points should be unaligned because sampling in a uniform grid arrangement may lead to biased results if aligned with row patterns. Fields that have soil test P and K levels in the nonresponsive categories should be grid-point sampled on a 300-foot grid. This is equivalent to one soil sample for every 2 to 2.5 acres. Where there is no information about the P or K status of the field or where previous tests were in the responsive range, a 200-foot grid size should be used. This is equivalent to approximately one soil sample per acre. Wisconsin research indicates these small grid cell sizes are needed to adequately characterize the variability in soil fertility. A larger grid cell size (such as 5 acres) may not adequately describe the field variability and may limit the potential economic benefits of site-specific management.

**Other considerations in selecting a sampling strategy**

Select the sampling strategy appropriate for the field size and topography.

**Contour strips.** On contour strip fields, sample each strip separately if it is approximately 5 acres or more in size, following the sampling intensity guidelines provided in Table 1. Cores from two or three small strips that have identical cropping and management histories may be combined following these same recommended sampling intensity guidelines. Using a grid-point sampling approach on contour strips or small fields is not appropriate, regardless of grid cell size. This is because a grid technique may result in many soil samples being collected from one contour strip but none in other strips; additionally, grid-point samples may be on the edge of the strips and not adequately represent the strip.

**Five-acre grid-point sampling.** The 5-acre grid point sampling system for whole field management recommendations has recently become popular with soil samplers because it takes less time to collect cores, compared to the traditional W pattern. Another advantage of this approach is its ability to track changes in soil test levels over time, because soil samples are collected from the same geo-referenced point each time the field is sampled. Five-acre grid-point sampling can likely be used in some situations and not in others. For example, in fields that were soil sampled within the past 4 years and tested in the nonresponsive range, averaging the soil test results from 5-acre grid-point sampling is reasonable. This is because there previously had not been a fertilizer recommendation on these fields and some variability at excessively high soil test levels does not change the fact that no fertilizer was recommended. For fields that were sampled more than 4 years ago or where past soil test results were in the responsive range, 5-acre grid-point sampling may not be the best choice of sampling techniques. This is because 5-acre grid-point sampling may not adequately represent the variability within a field, and a comparatively small change in soil test level of 5 to 10 ppm could mean a large change in the amount of nutrients recommended.
small fields and contour strips, taking a few 5-acre grid-point samples in each field and averaging them likely does not provide a representative sample of the field. Additionally, the total number of samples may be so few that none of them can be eliminated from the field average if it appears one is an outlier.

Smart (zone or directed) sampling. Another approach gaining support among researchers is smart sampling, also known as directed or management zone sampling. This approach uses information that has been collected using other precision agricultural technologies such as yield maps, aerial photographs of bare soil or crop canopy, or soil electrical conductivity measurements. Directed sampling evaluates the spatial distribution of several factors that may influence nutrient availability and crop productivity to help define sampling areas with similar characteristics. With previous comments in mind, either the W pattern or grid-point method can be used to collect samples within management zones. If the results of grid or management zone sampling do not warrant variable-rate application (for example, relatively little between-sample variation), average them to determine the appropriate single-rate treatment.

Procedures for taking soil samples

When to take soil samples

Take soil samples at any convenient time. Studies examining the effect of sampling time on soil test results suggest that test values for pH and phosphorus (P) are typically slightly higher in early spring samples than in fall samples. The effect of time of sampling on soil test potassium (K) results is dependent upon clay mineralogy and soil test level. Soil test K results may be higher in spring compared to fall on lower testing soils, but on higher testing soils, soil test K may be lower in spring compared to fall. To receive your recommendations early enough to enable you to apply the lime and fertilizer needed, it may be best to sample in the fall. Another benefit of fall testing is that fertilizer prices are more likely to be discounted then. Hayfields can be sampled after any cutting. Regardless of when you sample, it is best to be consistent from one year to the next.

Winter sampling, or sampling when the soil is frozen, is permissible only when it is possible to take a uniform boring or core of soil to the appropriate depth. This may require using a portable power boring tool. Using a pick or spade to remove a few chunks of frozen soil from the surface will give inaccurate results.

How to take soil samples

Certain government agency programs require nutrient management plans prepared according to the current USDA-NRCS nutrient management standard (590). Soil sampling and testing procedures and nutrient application rates based on these soil tests must be consistent with the provisions of the 590 standard to be eligible for many cost-sharing programs. These provisions currently include: following the soil sampling techniques outlined above, soil testing by a Wisconsin certified laboratory, and use of nutrient application rates consistent with the guidelines contained in the University of Wisconsin-Extension publication Nutrient Application Guidelines for Field, Vegetable, and Fruit Crops in Wisconsin (A2809).

When ready to sample, use a sampling probe or auger. You can obtain these tools on loan from most county Extension offices (counties.uwex.edu) or fertilizer dealers. Avoid sampling the surface, push them aside to keep from including them in the soil sample.

Insert the probe or auger into the soil to plow depth or at least 6 inches. The sampling depth should be consistent. To aid year-to-year comparisons, it is important to take repeated samplings from the same field to exactly the same depth.

Take at least 10 soil cores or borings for each composite sample and, preferably, at least two composite samples for every field. For nonresponsive fields greater than 5 acres in size, obtain, at a minimum, the number of samples specified in Table 1. For responsive fields, as well as all fields that have not been sampled in the past 4 years, take one composite sample for every 5 acres.

Thoroughly mix the sample, then place about 2 cups of soil in a sample bag.

Identify the bag with your name, field identification, and sample number.

Record the field and sample location on an aerial photo or sketch of the farm and retain for your reference. Record the GPS coordinates, if available.

Fill out the soil information sheet. A completely and carefully filled out information sheet will provide the most accurate nutrient recommendations.

Always include a soil test information sheet when submitting soil samples to a laboratory for testing. The soil test information sheet used by the UW Soil Testing Laboratories can be found at: http://uwlab.soils.wisc.edu/files/forms/rfs_front.pdf.

Provide the soil name and field history whenever possible for more accurate recommendations. Information about legume crops previously grown on the soil and manure application history is essential for proper nutrient crediting from these sources. Include soil names and/or map unit symbols from county soil
survey reports, web soil survey (http://websoilsurvey.nrcs.usda.gov/app/), or individual farm conservation plans. To obtain this information, contact your county Extension agent, NRCS district conservationist, or the County Land Conservation Department (LCD).

How often to sample
Most fields should be retested at least every 4 years to monitor soil fertility levels of immobile nutrients and pH to prevent nutrient deficiencies and avoid excess nutrient accumulation. Crop nutrient removals over a 4-year period in most cropping systems will not change soil test levels enough to affect recommended nutrient application rates. Exceptions include sands and loamy sands, which should be tested every 2 years. Also, depending on the initial soil test P and K levels, cropping systems such as high-yielding corn silage or alfalfa may require more frequent testing to adequately monitor changes in soil test levels.

What to do with soil samples
The soil samples and a completed soil information sheet can be taken to your county Extension office for forwarding to a certified soil testing laboratory, sent directly to the soil testing laboratory, or delivered in person.

To receive nutrient application rate guidelines consistent with those found in A2809, submit your soil samples to one of the Wisconsin certified laboratories. The College of Agricultural and Life Sciences, University of Wisconsin–Madison and the University of Wisconsin-Extension, through the Department of Soil Science, operate soil testing laboratories at Madison and Marshfield. Several private laboratories are also certified, and are listed at http://uwlab.soils.wisc.edu/wdatcp/. To become certified, laboratories must use the soil testing methods and nutrient application rate guidelines specified by WDATCP and must also meet quality control standards through periodic analysis of quality control soil samples.

To have your soil tested by the University of Wisconsin, send your samples to either of the listed laboratories. Find a sample submission form at https://uwlab.soils.wisc.edu/farm-soil/.

**Tillage system considerations when sampling**

**Moldboard plowing.** Sample to the depth of tillage.

**Chisel plowing and offset disking.** Take soil samples to ¾ of the tillage depth. When possible, take soil samples before spring or fall tillage. Sampling before tillage lets you determine the sampling depth more accurately and avoid fertilizer bands applied for the previous crop.

**Till-plant and ridge tillage.** Sample ridges to a 6-inch depth and furrows (between rows) to a depth of 4 inches. Combine equal numbers of soil cores from ridges and furrows to make up the composite sample.

**No-till.** Fields that have not been tilled for 5 or more years may develop an acid layer on the surface from the use of nitrogen fertilizer. This acid layer could reduce the effectiveness of triazine herbicides. Unincorporated phosphorus (P) and potassium (K) are also likely to build up in the surface soil. If an acid layer is suspected, take a separate sample to a depth of only 2 inches. When sending the soil to the lab, indicate that the sampling depth was only 2 inches. This sample will be tested for pH only, unless P and K are specifically requested. For fertilizer recommendations, take a separate sample to a depth of 6 to 7 inches. Fertilizer recommendations require this sampling depth because fertilizer calibration studies are based on plow-depth sampling. Sample between rows to avoid fertilizer bands.

**Soil and Plant Analysis Laboratory**
8452 Mineral Point Road
Verona, WI 53593-8696
(608) 262-4364

**Soil and Forage Analysis Laboratory**
2611 Yellowstone Drive
Marshfield, WI 54449-8401
(715) 387-2523

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**Authors:** Carrie Laboski is associate professor of soil science and John Peters is director of the University of Wisconsin–Madison soil testing labs in Madison and Marshfield. Both hold joint appointments with the College of Agricultural and Life Sciences, University of Wisconsin–Madison, and University of Wisconsin-Extension, Cooperative Extension. Cooperative Extension publications are subject to peer review.

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Wisconsin Cover Crop Conference

Daniel H. Smith, Nutrient and Pest Management Program, University of Wisconsin-Madison

The 2018 Wisconsin Cover Crop Conference will take place on February 27 (9am-5pm) 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 and registration information is available: [http://fyi.uwex.edu/covercrop/](http://fyi.uwex.edu/covercrop/)

For a PDF agenda of the Wisconsin Cover Crop Conference, click here.

2017 Wisconsin Oats and Barley Performance Tests

Shawn Conley, State Soybean and Small Grains Specialist

The Wisconsin oats and barley performance trials are conducted each year to serve Wisconsin growers. Trials include released varieties, experimental lines from Wisconsin and Midwestern states, and lines from private companies. The main objective of these trials is to obtain data on how varieties perform in different locations and years.

Growers can use this data to help choose the best varieties to plant, and breeders to decide on whether or not to release a new variety and to select parents to make new crosses.
2018 IPM Field Scout Training Class

Bryan Jensen, UW Extension and IPM Program

The Madison Field Scout Training Classes will be held on the UW Madison Campus from January 2-5, 2018. The course is designed to provide the skills necessary for proper pest identification, crop scouting techniques as well as provide complimentary baseline information for people preparing for the state CCA exam. Additional information such as crop growth and development, pest life cycle, pest damage symptoms and economic thresholds will be covered. Pest control recommendations, although discussed, will not be highlighted in detail during this course. Crops covered will include, corn, alfalfa, soybean and wheat. [Click here for the course syllabus.]

Non-student registration fee is $225/person but does not cover campus parking. Online registration (preferred) for the Field Crop Scout School can be made at the PAT Store. Checks should be made payable to University of Wisconsin-Madison and sent to Bryan Jensen, Dept. of Entomology, 1630 Linden Dr., Madison, WI 53706.

For more information on this course, please contact Bryan Jensen at:

Dept. of Entomology
1630 Linden Dr.
Madison, WI 53706

(608) 263-4073 bmjense1@facstaff.wisc.edu

Weed Identification Series, Galinsoga (Quickweed)

Mark Renz UW Madison Associate Professor and Extension Specialist, Chelsea Zegler UW Madison Associate Research Specialist

Due to the warm weather last week we thought we would share one more weed ID plant for the season: Quickweed aka Galinsoga. We actually have two species of this plant in Wisconsin, but they both act very similar so we decided to lump them into one category. These species have been historically common in urban areas as well as horticultural fields but I have been getting more and more reports in agronomic fields over the past 3-4 years.

Quickweed is a summer annual that grows, flowers and produces seed very fast; hence the name. What makes this plant so unique is seed usually aren’t dormant so seed produced in one year can germinate in the same year. While most germination occurs through June, it can continue through the summer and in some year even into the fall. I actually saw quite a few seedlings last week from our previous warm weather.

Check out the factsheet (also attached to the end of the newsletter) to learn about how to ID this species.

Wisconsin Soybean Variety Performance Trials 2017

Shawn Conley, State Soybean and Small Grains Specialist

The Wisconsin Soybean Performance Trials are conducted each year with the producer’s needs in mind. Our objective is to give producers the information to select varieties that will satisfy their specific goals and are most likely to perform best under their management practices.

To view the full article, head to the website below>>>>

http://www.coolbean.info/library/documents/2017_Soybean_VT_FINAL.pdf

Soybean Yield Gaps Through Data Collection

Shawn Conley, State Soybean and Small Grains Specialist

Dear Wisconsin Crop Producers:

I am embarking on a Region-Wide Project aimed at generating baseline producer data on current soybean management practices in Wisconsin’s production systems. This project is funded by the Wisconsin Soybean Marketing Board and the North Central Soybean Research Program (NCSRP). The project goal is to identify the key factors that preclude the State’s Soybean Producers from obtaining yields that should be potentially possible on their respective individual farms. The term used for the difference between what yield is possible on your farm each year and what you yield you actually
achieve is called a “Yield Gap”. We are therefore asking Crop Producers in Wisconsin to provide us with yield and other agronomic data specific to their soybean production fields. With that data, we will conduct an in-depth analysis of what on-farm factors might be causing a Yield Gap on your farms. To date we have collected data from across the North Central soybean production region from a total of 6251 soybean fields, representing 501,837 acres!! Talk about BIG DATA!!

Please go to www.coolbean.info or click to view initial results from data collected the last two years growing seasons: Key Management Practices That Explain Soybean Yield Gaps Across the North Central US.

Click here to review a detailed set of Guidelines for Data Collection

Click here to download a fillable PDF Data Collection Form

Please email all forms back to Dr. Shawn P. Conley: spconley@wisc.edu

Coolbeans!

Shawn

Assessment to Determine Adoption of Pollinator Protection Practices

Deana Knuteson, NPM Program

The University of Wisconsin is conducting an assessment to determine practices currently being used in Wisconsin to enhance pollinators. We will use this information to direct further research and outreach efforts. Pollinators are defined as any animal that visits flowering plants and transfers pollen from flower to flower, thus aiding plant reproduction. Wisconsin based pollinators include bees, butterflies, moths, flower flies, beetles, wasps and hummingbirds. In Wisconsin, pollinator-dependent crops account for over $55 million in annual production, but at the same time Wisconsin has been at risk for honey bee colony loss. In April of 2016, Wisconsin produced the Wisconsin Pollinator Protection Plan (https://datcp.wi.gov/Documents/PPPComplete.pdf) which helps guide plans and practices for Wisconsin landscapes. Questions developed for this assessment are based on this Plan.

We are asking you to provide information into this assessment which should take about 20 to 30 minutes. Link to the assessment can be found at: https://uwmadison.co1.qualtrics.com/jfe/form/SV_eUuzWXJkB2MwO1B

Please contact Deana Knuteson (dknuteson@wisc.edu) for any questions.

UW/UWEX Plant Disease Diagnostic Clinic (PDDC) Update October 20

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 October 14, 2017 through October 20, 2017. The The 10/20/17 PDDC Wisconsin Disease Almanac (i.e., weekly disease summary) is now available at: https://pddc.wisc.edu/wp-content/uploads/sites/39/2016/12/FullTable102017.pdf

UW/UWEX Plant Disease Diagnostic Clinic (PDDC) Update November 3

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 October 28, 2017 through November 3, 2017. The 11/3/17 PDDC Wisconsin Disease Almanac (i.e., weekly disease summary) is now available at: https://pddc.wisc.edu/wp-content/uploads/sites/39/2016/12/FullTable110317.pdf

UW/UWEX Plant Disease Diagnostic Clinic (PDDC) Update November 10

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 November 4,

The 11/10/17 PDDC Wisconsin Disease Almanac (i.e., weekly disease summary) is now available at:


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### Wisconsin DATCP Pest Bulletin, Nov 9, 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. 19 of the Wisconsin Pest Bulletin is now available at:

Click here to view or download the PDF version

PLEASE NOTE: This issue completes our 62nd season of reporting prevailing insect and plant disease conditions in the state. The DATCP Pest Survey Program continues to benefit from valuable pest data received from more than 60 cooperators each year. Once again, our sincerest thanks to the many apple growers, farmers, county agents and consultants who contributed their time, expertise, and information to the survey program this year.

**HIGHLIGHTS OF 2017:** Corn rootworm beetle counts decrease to 47-year low

**FORAGES & GRAINS:** Peak potato leafhopper populations noted in July

**CORN:** Unusually large black cutworm migration documented in April and May

**SOYBEANS:** Soybean aphid survey finds lowest state average population in 17 years

**FRUITS:** Brown marmorated stink bug detected in more apple orchards this season

**VEGETABLES:** Late blight confirmed in 13 counties from July-September

**NURSERY & FOREST:** New state record for velvet long-horned beetle in WI

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### RR2Y® versus Xtend® Soybean Cultivar Performance in 2017

Shawn Conley, WI State Soybean and Wheat Extension Specialist

The 2017 Wisconsin Soybean Variety Performance Trials are posted and I wanted to give a brief update on the relative performance of RR2Y® versus Xtend® (RR2X) soybean platforms from this growing season. So how did these platforms fare in 2017? Well, the story isn't quite as clean and straightforward as 2016, when we had record yields across the state.

Click here to read the full article on The Soy Report blog.
Galinsoga (Quickweed)

Galinsoga is a broadleaf summer annual common in urban areas and in vegetable crops. Seeds can germinate in early spring through summer.

**Leaves:** Opposite leaves typically longer (¾ to 2 ½ in) than wide (½ to 1 ½ in). Blades have toothed/serrated margins with fine hairs.

**Stems:** Can be simple but are usually branched and up to 2 feet tall. Stems are hairy but the degree depends on the species (hairy galinsoga has more hair).

**Flowers:** Small flowers (¼- ½ in wide) are at the end of stalks extending from where the leaf attaches to the stem. Typically, 5 white flowers (which look like petals with 2-3 lobes) surround yellow flowers. Galinsoga flowers from June to October.

**Biology:** Galinsoga is referred to as quickweed due to its fast growth and because seeds do not have a dormancy requirement and therefore can germinate in the same season they are produced.

**Similar Plants:** Several species of galinsoga are common to Wisconsin including hairy and small flower galinsoga. They can be difficult to distinguish but smallflower galinsoga has smaller leaves, flowers, and less hairy stems than hairy galinsoga. Control is similar with all species.

Provided by the Renz Lab

Questions or Comments: Zegler@wisc.edu
OTHER PROGRAMS OF INTEREST

December 2017 CCA Exam Review Training Webinars

For more details, contact Bryan Jensen (bmjense1@wisc.edu)

2018 Wisconsin Agribusiness Classic (formerly the Wisconsin Crop Management Conference)

January 9-11, 2018

Alliant Energy Center, Madison

For more details, see http://wiagribusiness.org/tradeshow.php
Schedule and Contacts
(continued)

**Friday Morning, Dec. 1** – Dodgeville at Iowa Co. Health & Human Services Bldg, 303 W. Chapel St. **CONTACT HOST:** Gene Schriefer, Iowa Co. UWEX, 303 W. Chapel St., Ste. 1200, Dodgeville, WI 53533; 608-930-9850.

**Monday Morning, Dec. 4** – Juneau at Dodge Co. Admin Bldg., 127 Oak St. **CONTACT HOST:** Loretta Ortiz-Ribbing, Dodge Co. UWEX, Admin Bldg. 127 Oak St., Juneau, WI 53039; 920-386-3790.

**Monday Afternoon, Dec. 4** – Kiel at Millhome Super Club, 3 miles East on Hwy. 57/31. **CONTACT HOST:** Mike Ballweg, Sheboygan Co. UWEX, 5 University Dr., Sheboygan, WI 53081; 920-459-5904

**Tuesday Morning, Dec. 5** – Cecil at The Main Event, 206 North Lemke St. **CONTACT HOST:** Jamie Patton, Shawano Co UWEX, Courthouse, Rm. 101, 311 N. Main St., Shawano, WI 54166; 715-526-6136

**Tuesday Afternoon, Dec. 5** – Marshfield at Marshfield Ag Research Station Auditorium, 2611 Yellowstone Dr. **CONTACT HOSTS:** Alana Voss, Adams Co. UWEX, 569 N. Cedar St. Ste. 3, Adams, WI 53910; 608-339-4237 – or – Richard Halopka, Clark Co. UWEX, 517 Court St., Rm. 301, Neillsville, WI 54456; 715-743-5148

**Schedule and Contacts**

**Wednesday Afternoon, Nov. 29** – DeForest at Comfort Inn, 5025 County Hwy V. **CONTACT HOST:** Heidi Johnson, Dane Co. UWEX, or 608-224-3716. Please register online at fyi.uwex.edu/danecountyag/upcoming-ag-programs/.

**Thursday Morning, Nov. 30** – Eau Claire at 29 Pines Family Restaurant-Sleep Inn, 5872 33rd Ave. **CONTACT HOST:** Mark Hagedorn, Eau Claire Co. UWEX, 227 First St., Altoona, WI 54720; 715-839-4712.

**Thursday Afternoon, Nov. 30** – Sparta at Jake’s Northwoods, 1132 Angelo Rd., Hwy 21. **CONTACT HOST:** Bill Halfman, Monroe Co. UWEX, 14345 Co. Hwy B, Rm. 1, Sparta, WI 54656; 608-269-8722

The Department of Soil Science, in conjunction with University of Wisconsin-Cooperative Extension, will conduct eight Soil, Water, and Nutrient Management Meetings in 2017 (from November 29 to December 5).

- **Meetings will either be mornings from 8:30 to 11 am (with breakfast @ 8 am) or afternoons from 1:30 to 4 pm (with lunch @ 1:00 pm).**

- The purpose of these meetings is to provide research and information updates in the field of soil, water, and nutrient management.

- Francisco Arriaga, Matt Ruark., Brian Luck (all UW-Madison), and Sue Porter (Wis. DATCP) will present current soil, water, and nutrient management information.

- A uniform fee of $35 per person will be charged at all locations; this includes the meal and all materials. Make reservations with the host agent at least 1 week before the meeting you wish to attend.

- Certified Crop Adviser CEU credits (1.0 NM and 2.0 SW) have been requested.

For program content questions, contact
- Francisco Arriaga
- Email: farriaga@wisc.edu
- Phone: 608-263-3913
2018 Wisconsin Agronomy Update Meetings

Here is the schedule for the 2018 Agronomy Update meeting series to be held January 3-9, 2018. This annual meeting series is designed to bring current information to consultants, farmer / seed dealers, seed company and industry representatives, and our crop contact agents. We will present the latest information on hybrid / variety performance, an analysis and discussion of last year’s production season, and updated recommendations for field crop production.

We have a limited mailing list of contacts from previous meetings, but really depend on local agents for the most effective publicity. Please inform seed dealers, co-op managers and top farmers from your county or area, and encourage them to attend. Please do not expect the host agent to promote this event in your county.

The information packet will contain 2017 variety trial results, plus numerous new seed related reference materials. Extra information packets are available for $21.00 each. All meetings begin with a breakfast or lunch, followed by the formal meeting. Be sure the host agent (see schedule) receives your registration no later than one week before the meeting you plan to attend. A “walk-in” fee will be charged to those who have not preregistered. Certified Crop Advisor CEU credits (3.0 hours) in crop production were requested for each session.

If you have question or suggestions concerning these meetings, please contact us. Thank you in advance for your efforts to publicize and attend the 2018 Agronomy Update meetings.

Location, date and time

Janesville Tuesday, Jan. 2 at 12:00
Madison Wednesday, Jan. 3 at 7:30 am
Fond du Lac Wednesday, Jan. 3 at 12:00
Kimberly Thursday, Jan. 4 at 7:30 am
Wausau Thursday, Jan. 4 at 12:00
Eau Claire Friday, Jan. 5 at 7:30 am
Sparta Friday, Jan. 5 at 12:00
Belmont Monday, Jan. 8 at 12:00

Wisconsin Agribusiness Classic
January 9-11, 2018
Alliant Energy Center, Madison
Wisconsin Corn Growers Association
Wisconsin Soybean Association
CORN / SOY EXPO
February 1-2, 2018
Kalahari Resort, Wisconsin Dells
Midwest Forage Association Forage Production and Use Symposium
February 19-21, 2018
Chula Vista, Wisconsin Dells

See you at the meetings!

**2018 IPM Field Scout Training**

Bryan Jensen, UW Extension and IPM Program

A friendly reminder the Madison Field Scout Training Classes will be held on the UW Madison Campus from January 2-5, 2018. The course is designed to provide the skills necessary for proper pest identification, crop scouting techniques as well as provide complimentary baseline information for people preparing for the state CCA exam. Additional information such as crop growth and development, pest life cycle, pest damage symptoms and economic thresholds will be covered. Pest control recommendations, although discussed, will not be highlighted in detail during this course. Crops covered will include, corn, alfalfa, soybean and wheat. [Click here for the course syllabus.](#)

Non-student registration fee is $225/person but does not cover campus parking. Online registration (preferred) for the Field Crop Scout School can be made at [the PAT Store.](#) Checks should be made payable to University of Wisconsin-Madison and sent to Bryan Jensen.

For more information on this course, please contact
Bryan Jensen
Dept. of Entomology
1630 Linden Dr.
Madison, WI 53706
(608) 263-4073 bmjense1@facstaff.wisc.edu

**Video: Combine Cleaning To Prevent Spreading Weed Seeds**

Following harvest season, proper clean-out of harvest equipment can remove significant biomaterial and limit the spread of weed seeds, and improve function and longevity of parts. This 5-minute video demonstrates a top-to-bottom front-to-back procedure for cleaning a combine to help prevent the spread of weed seeds. [https://youtu.be/nDMq1UanSkE](#)

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**Strip-Till Soybean Production**

Shawn Conley, State Soybean and Small Grains Specialist

Does Strip Tillage or Fertilizer Placement Influence the Soybean Row Spacing Yield Response? The objective of this study is to quantify the effect of strip tillage and fertilizer placement on soybean stand establishment and seed yield.

To view the full study, head to the link below >>> [http://www.coolbean.info/library/documents/Strip-Till-SoybeanProduction.pdf](#)

**Industrial Hemp in Wisconsin: The First Steps!**

Shawn Conley, State Soybean and Small Grains Specialist

The University of Wisconsin Madison and UW Extension has been inundated with questions related to industrial hemp production since the passing of the 2017 Wisconsin Act 100. The below information was authored by Patrick Robinson, Associate Dean Department of Agriculture and Natural Resources, Cooperative Extension, University of Wisconsin Extension. Patrick recognizes William (Bill) Barker Associate Dean for Research, The College of Agricultural and Life Sciences, The University of Wisconsin – Madison as a significant contributor to this article. Patrick also recognizes DATCP and NIFA sources as some language was copied verbatim for legal purposes.

To view the full article, head to The Soy Report Blog >>> [http://thesoyreport.blogspot.com/2017/12/industrial-hemp-in-wisconsin-first-steps.html](#)

**Assessment to Determine Adoption of Pollinator Protection Practices**

Deana Knuteson, NPM Program

The University of Wisconsin is conducting an assessment to determine practices currently being used in Wisconsin to enhance pollinators. We will use this information to direct further research and outreach efforts.

Pollinators are defined as any animal that visits flowering plants and transfers pollen from flower to flower, thus aiding plant reproduction. Wisconsin based pollinators

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include bees, butterflies, moths, flower flies, beetles, wasps and hummingbirds. In Wisconsin, pollinator-dependent crops account for over $55 million in annual production, but at the same time Wisconsin has been at risk for honey bee colony loss. In April of 2016, Wisconsin produced the Wisconsin Pollinator Protection Plan (https://datcp.wi.gov/Documents/PPPComplete.pdf) which helps guide plans and practices for Wisconsin landscapes. Questions developed for this assessment are based on this Plan.

We are asking you to provide information into this assessment which should take about 20 to 30 minutes. Link to the assessment can be found at: https://uwmadison.co1.qualtrics.com/jfe/form/SV_eUUzWXJkB2MwOIB

Please contact Deana Knuteson (dknuteson@wisc.edu) for any questions.

2017 Wisconsin Corn Hybrid Performance Trials

Kent Kohn, Thierno Diallo, and Joe Lauer

Every year, the University of Wisconsin Extension-Madison and College of Agricultural and Life Sciences conduct a corn evaluation program, in cooperation with the Wisconsin Crop Improvement Association. The purpose of this program is to provide unbiased performance comparisons of hybrid seed corn for both grain and silage available in Wisconsin.

For more information, head to the link below>>>>>

Updated: Handy Bt Trait Table

Bryan Jensen, UW Extension and IPM Program

Dr. Chris DiFonzo, Michigan State University, with contributions from Dr. Pat Porter, Texas A&M University and Dr. Kelley Tilmont, The Ohio State University, have provided their annual updates to the Handy Bt Trait Table. This has been my “go-to” resource to determine which Bt proteins are in the different trait packages. This updated version is easier to use and more accurately reflects efficacy of Western bean cutworm.

UW/UWEX Plant Disease Diagnostic Clinic (PDDC) Update November 17

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 November 11, 2017 through November 17, 2017.

The 11/17/17 PDDC Wisconsin Disease Almanac (i.e., weekly disease summary) is now available at:

WCM mailing list has a new email address

Current subscribers have been automatically moved to the new list. If you send a “join” email and are currently on the list, you will simply get a confirmation that you are already on the new list. The new WiscList ListManager will not subscribe you twice.

New members may join the Wisconsin Crop Manager email list by sending a blank email with no message to:
join-wisconsincropmanager@lists.wisc.edu

Instructions to leave the list will be included with all new messages.

The changes should take effect by the end of the year. We apologize in advance if you receive any extra email messages from WCM during this change.