Soybean Checkoff Funded Collaborative International Research and Outreach

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

Many public universities collaborate on international research and outreach efforts, but you may not understand the impact that this work can have even for farmers in the Midwest. We have assembled three new videos in a series, in an effort to demonstrate our impact in conducting collaborative research and outreach work. This work is ongoing and is being conducted in Chile and here in the Midwest.

The focus is to produce soybean germplasm that is highly resistant to white mold, a major disease in the upper Midwest. This research is funded by the Wisconsin Soybean Marketing Board and the North Central Soybean Research Program. Travel support for graduate student, Megan McCaghey, was all made possible by the Walter R. Stevenson Fund for Graduate Student Travel.

This collaborative effort includes researchers here at the University of Wisconsin-Madison and Researchers at Iowa State University, including Dr. Daren Mueller. We would like to thank Brandon Kleinke, Iowa State University, for his work in shooting video footage and assembling this video series.

To watch the videos, click the photo below.
Wisconsin Winter Wheat Disease Update – May 21, 2018

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

Winter wheat in the spring

Winter wheat in the Uniform Variety Trial located in Sharon, Wisconsin in 2018

The Wisconsin Field Crops Pathology lab scouted winter wheat in the uniform variety trials located in Sharon and Arlington, Wisconsin late last week. The crop was jointing at both locations. The crop looks very good. We found no disease at either location. At this time last year we already had a significant epidemic of rust started across southern Wisconsin. Thus, the winter wheat crop is looking much better than this time last year, when it comes to the disease situation.

We also took a quick look at a couple of production fields in the area and those also appear to be clean. We have also received some reports of wheat conditions around the Fond du Lac area. Wheat is reported to look very good there as well with no disease. We will try to also scout uniform variety trials in those locations in the next few days.

Despite good news, weather has been conducive for the development of foliar disease the last few days. I would encourage folks to be diligent in scouting. I would expect flag leaf emergence in the next 1-2 weeks across the winter wheat growing region of the state. We will be entering a very important time to make a decision about your first fungicide application. Considering the current agricultural economy, the decision to spray fungicide is going to be critical to try to break even this year. I would hold off as close to the anthesis growth stage to “pull the trigger” as you can wait. This will help maximize fungicide use to control both of the major diseases of wheat that we see in Wisconsin, stripe rust and Fusarium head blight (FHB; scab). However, if stripe rust shows up after flag leaf emergence, it might be necessary to apply a fungicide before anthesis to control a rust epidemic, especially on susceptible varieties.

Based on previous research conducted by our laboratory in Wisconsin, we know that an application of fungicide that closely coincides with the start of the rust epidemic can be very effective in preserving yield on susceptible and moderate susceptible varieties. Many fungicides are effective in controlling stripe rust, including the industry leaders used for FHB control, Prosaro and Caramba. Therefore, if rust doesn’t show up in your field before anthesis occurs, you can effectively use Prosaro and Caramba to control both FHB and a late stripe rust epidemic. The best case scenario would be to only have to spray fungicide once this season. However, there is still much time left, so diligent scouting is critical to make the best decision. Get out there and SCOUT, SCOUT, SCOUT!

Adjust Your Seeding Rate But Not Your Maturity Group For Late May Planted Soybean

Authors: S.P. Conley, J.M Gaska, S. Mourtiznis, D. Mueller, A. Varenhorst

With only 10 days left in May and roughly 50% of the Midwestern soybean crop planted (WI:33%, IA:58%, SD:24%) what if any production changes should growers consider modifying?

Do Not Switch Your Maturity Group….Yet

Increase your seeding rate to roughly 154,000 seeds per acre

Interpret the return above seed cost cautiously

All the details and further explanation is posted here >>> [http://coolbean.info/2018/05/21/adjust-your-seeding-rate-but-not-your-maturity-group-for-late-may-planted-soybean/](http://coolbean.info/2018/05/21/adjust-your-seeding-rate-but-not-your-maturity-group-for-late-may-planted-soybean/)
Are You Concerned about Slugs in Corn and Soybean?

Bryan Jensen, Dept. of Entomology and Integrated Pest Management Program, University of Wisconsin-Madison

You don't need to be clairvoyant to be concerned about slugs in corn and soybean. It has been raining, continues to rain and frankly I don't want to look at the forecast. The majority of the Wisconsin corn/soybean growing area has had significant rainfall and cool temperatures. All which can contribute to higher than normal slug populations.

Slugs have a “rasp-like” mouthpart and damage seedling plants by scraping off leaf tissue. Soybeans are more susceptible than corn because the growing point is above ground in the seedling stage. Slug feeding scars are usually longitudinal (especially in corn) and initially leave the wax-like cuticle intact. This symptom is often called “window paneing”. Eventually the cuticle will weather and drop off. Slugs may be difficult to find because they are nocturnal. However, they may be active on cool, cloudy days. During daylight hours, they hide under soil clods and plant debris. Slug injury is often so diagnostic that finding slugs to confirm their damage (vs. other insects) may not be needed.

Slugs are vulnerable to desiccation and prefer habitats which help protect them. Which includes high crop residue and/or weed growth. These are fields where I would concentrate my scouting efforts.

Unfortunately, many of the effective slug management practices are behind us which would have included practices like making sure the seed furrow was closed, residue management and planting date (the sooner the better but difficult to accomplish this year!) to name a few.

What can be done short of hoping for dry weather? Effective weed management is certainly at the top of the list and likely a goal regardless if you have slugs or not.

Slug baits can be effective but given tight profit margins they might not be an option for entire fields. Economic thresholds have not been developed for slugs. Before baits are considered, thoroughly read the label including all applicable footnotes! The metaldehyde-based bait labels excludes use on soybean in Wisconsin. This is not obvious because you must read a footnote which indicates approved states. 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.

Sometimes knowing what will not work can be beneficial. Slugs are mollusks and insecticides are non-toxic to them. Even if contact is make or the slug consumes treated foliage. Attempting to try insecticides as a last resort is likely to increase slug damage because those products kill non-target beneficial insects like ground beetles.

Anecdotal information suggests that high salt fertilizer applied at night may work. However, this control tactic is not based on sound science, is not always effective and these fertilizers maybe phytotoxic to plants.

A final suggestion would be to make detailed field histories while scouting this spring. Use this information to make preventive management decisions next year.

Fusarium Head Blight Risk for Wheat in WI for May 24, 2018

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

Visit the Fusarium Head Blight Prediction Center to stay up to date on the latest forecasts and see maps.

The heavy moisture we have received over the last week, combined with high temperatures in the low-to-mid 80s F this week have pushed winter wheat growth stages. We have seen rapid stem elongation with flag leaves emerging in some fields in the southern and south central regions of Wisconsin. We continue to find wheat with little foliar disease. However, we are entering a critical time to
make our first important fungicide decision related to protecting emerging flag leaves from foliar disease. Continue to scout. Weather has been conducive for some foliar diseases. However, wheat continues to remain “clean” then hold your fungicide application until anthesis.

Given the heat this week, I suspect that heads will be emerging for some varieties in the southern region over the next week or so, with anthesis to closely follow. The decision to apply fungicide will be critical at this time. Considering the wet weather and warm temperatures the “pump is primed” for Fusarium head blight (FHB; scab). The Fusarium Head Blight Prediction Center currently has the FHB risk at medium to high in the south, south-central and eastern portions of the wheat belt (See Figure). This situation needs to be monitored closely over the next couple of weeks as fields enter the anthesis growth stage. The weather outlook appears to be very humid, wet, and warm, which will only increase the risk of FHB.

A fungicide may be needed especially on susceptible cultivars to control FHB and reduce DON (vomitoxin) contamination. The fungicides Prosaro or Caramba have both performed well on FHB in Wisconsin. Timing of application of these products is critical. I would urge you to wait until anthesis has begun in your field before applying. We have observed poor control where application of these effective fungicides were 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 and DON control is much reduced.

Get out there and SCOUT, SCOUT, SCOUT and monitor the FHB Prediction Center!

http://www.wheatscab.psu.edu/

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**Wisconsin Winter Wheat Disease Update – May 30, 2018**

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

The heavy moisture we have received over the last week, combined with high temperatures in the low-to-mid 80s this week have pushed winter wheat growth stages. We have seen rapid stem elongation with flag leaves emerging in some fields in the southern and south central regions of Wisconsin. We continue to find wheat with little foliar disease. However, we are entering a critical time to make our first important fungicide decision related to protecting emerging flag leaves from foliar disease. Continue to scout. Weather has been conducive for some foliar diseases. However, wheat continues to remain “clean” then hold your fungicide application until anthesis.

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Get out there and SCOUT, SCOUT, SCOUT and monitor the FHB Prediction Center!

**Winter Rye Interseeding- Spring Update Video**

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

Interseeding winter rye into silage corn provides many spring benefits. A short video from the Nutrient and Pest Management program details winter rye spring growth and options for establishing soybeans following winter rye interseeding.

As farmers and agronomists plan for summer cover crop interseeding, please follow the link to watch the video detailing the system.

Variable Germination and Emergence in Soybean: Which Seeds Are Still Viable?

Shawn Conley, State Soybean and Small Grains Specialist

Many of us, including myself, have planted under less than ideal soil conditions this spring. Often the ground was worked a little on the wet side leading to clods and variable seeding depths for our soybean crop. Reports of variable and delayed emergence in conventional (more common) and no-till soybean is raising replant and seed viability questions in several areas across the Midwest. If soybean was planted into dry soil and had not imbibed water (seed did not swell) then there is little to no concern for growers. Once a significant rainfall event occurs, the soybean will imbibe water, germinate, and should emerge normally. For yield estimates, we would assign the day it rained as the new planting date.

The more difficult question to answer is “How viable is the soybean seed once imbibition and/or germination has begun?” The critical seed moisture content for soybean germination is 20%. A soybean seed that has imbibed water, has a split seed coat, or has an emerged radicle will continue to germinate and grow as normal once the seed is re-hydrated if the seed (embryo) remains above 20% moisture (Senaratna and McKersie, 1983) (Image 1).

If the moisture content within a soybean seed falls to 10% due to dry conditions after germination has started, then a dramatic difference exists among the different seed germination stages. If the seed has imbibed water for 6 hours (seed is swollen, but the seed coat has not broken), then the seed is dehydrated to 10% moisture, germination is not affected. If the seed has imbibed water for 12 to 24 hours (seed coat broken, but prior to radicle emergence), then germination is reduced to 60 to 65%. If the radicle has emerged and seed moisture levels drop to 10%, then no survivors can be expected (Image 2).
To test seed viability, growers can conduct a simple germination test. First excavate 100 soybean seeds and wrap them in a damp paper towel. Place these seeds in a warm location, and after 24 to 36 hours, count the number of seeds that have germinated (Image 2). Remember that a typical soybean germination is 90% (Image 3).

Literature Cited:


To view this post on the blog, click here.
through May 18, 2018.

The 5/18/18 PDDC Wisconsin Disease Almanac (i.e., weekly disease summary) is now available at:


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**Wisconsin UWEX Vegetable Crop Update Issue 6**

Amanda Gevens, Associate Professor & Extension Specialist, Potato & Vegetable Pathology, UW-Madison Plant Pathology Department

Vegetable Crop Updates newsletter #6

In This Issue:
- late blight national updates
- updated fungicide list for potato late blight 2018
- onion weed management
- potato crop status updates.

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**Wisconsin UWEX Vegetable Crop Update Issue 7**

Amanda Gevens, Associate Professor & Extension Specialist, Potato & Vegetable Pathology, UW-Madison Plant Pathology Department

Vegetable Crop Updates newsletter #7

In This Issue:
- late blight and cucurbit downy mildew information updates
- potato and processing vegetable crop updates

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** UW/UWEX Plant Disease Diagnostic Clinic (PDDC) Update May 25**

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 May 19, 2018 through May 25, 2018.

The 5/25/18 PDDC Wisconsin Disease Almanac (i.e., weekly disease summary) is now available at:


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**Wisconsin Fruit News – May 18**

Janet van Zoeren and Christelle Guédot, UW-Extension

https://go.wisc.edu/3s74m8

This week in the Wisconsin Fruit Newsletter you can read about:

- Is it a brown marmorated stink bug? If you’re wondering, check out these new apps!
- Insect Diagnostic Lab update
- Plant Disease Diagnostic Clinic update
- Tarnished plant bug – a strawberry menace
- Pheromone loading in cranberry insect lures
- Cranberry plant and pest degree-days: May 15, 2018
- Grape variety developmental stages: May 17, 2018
- Killing them softly: Do soft fungicides work on apple diseases?
- Precision apple thinning part II: Running the carbohydrate model
Learn management strategies, such as variety selection, managing stands, and marketing your crop, so you can put wheat back into your rotation and make money! Also learn how wheat can increase profitability of your other crops and improve soil health.

July 9th—10am—2pm

Arlington Research Station—Public Events Building

Cost: $15 (includes lunch and refreshments)

Register online: https://fyi.uwex.edu/danecountyag/events/wheat

phone: 608-224-3704

email: nunz.barabara@countyofdane.com

Topics & Presenters:

- “Choosing Successful Winter Wheat Varieties, Staging Wheat and Fertility Management”
  
  Shawn Conley, UW Soybean and Small Grain Specialist

- “Winter Wheat Diseases and Fungicide Selection and Timing”
  
  Damon Smith, UW Field Crops Plant Pathologist

- “Using Winter Wheat and Cover Crops in Your rotation to Improve Your Soil” -
  
  Jamie Patton, Outreach Specialist for the Nutrient and Pest Management Program

- “Marketing Winter Wheat to Maximize Profits”
  
  Brenda Oft, Commodity Broker and Farm Market Consultant for Midwest Market Management

- “Introducing Winter Wheat Into a Rotation to Increase Rotational Profitability”
  
  Heidi Johnson, Dane County UW-Extension Crops and Soils Agent and
  Jeff Gaska, Dodge County Farmer