Wisconsin Crop Manager

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2014 Agronomy/Soils Field Day Highlights UW-Madison Research

The Departments of Agronomy and Soil Science in conjunction with the Arlington Agricultural Research Station will host their annual field day on August 27, 2014. The field day will highlight UW-Madison research on emerging technologies, greenhouse gases in agriculture, and relevant crop production issues. The field day will begin at 8:00 am and run until 2:30 pm. Lunch will be provided by the Badger Crops Club for a $5 donation.

Agenda

8:00	Registration & coffee
8:30	Soils, Forages, and Greenhouse Gas Tours depart
10:30	Grains, Forages, and Greenhouse Gas Tours depart
12:00	Lunch with demonstration of UAV with aerial photography
1:00	Grains and Soils Tours depart

Note: All tours are only offered twice. Tours depart promptly as scheduled.

Tours

Grains

- Herbicide resistance in Wisconsin corn and soybean: Take Action (*Vince Davis*)
- Prescription seeding rates and climate impact on Midwestern soybean (*Shawn Conley & Ethan Smidt*)
- Maximum yield systems research for corn (*Joe Lauer*)
- Going "Old School" to manage corn rootworms (*Bryan Jensen*)

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- Perennial forages are essential for long term carbon storage in Wisconsin's prairie soils (*Gregg Sanford*)
- Cautions when harvesting wet forage (*Dan Undersander*)
- What level of weed control is needed to ensure alfalfa establishment? (*Mark Renz*)
- Common Alfalfa Diseases for 2014 and Management Options (*Damon Smith*)

Soils

- Strategies for crop residue management (*Francisco Arriaga*)
- N sensor research for corn and wheat (*Carrie Laboski & Haily Henderson*)
- Using rolled cover crops in organic and conventional soybean production (*Erin Silva*)

Greenhouse Gases in Wisconsin Agriculture

- Introduction to greenhouse gases (*Matt Ruark*)
- Greenhouse gas emissions from three crop rotations in

Wisconsin (*Maciek Kazula & Joe Lauer*)

- Influence of weed management on nitrous oxide emissions (*Becky Bailey & Vince Davis*)
- Greenhouse gases from dairy-based rotations (*Sarah Collier & Matt Ruark*)
- Greenhouse gases and biofuel production (*Randy Jackson*)

Visit the exhibits between tours and during lunch: Apps for Ag; Nutrient & Pest Management Program; Integrated Pest Management Program; SnapPlus; and more!!

The Arlington Research Station is located on Hwy. 51, about 5 miles south of Arlington. Watch for Field Day signs. GPS coordinates: 43.300467, -89.345534

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.

To view the flyer for this event, click on the link below or scroll down to the end of this newsletter.

http://ipcm.wisc.edu/download/misc/2014AgroSoilsFieldDayFlyer.pdf

Resilient Ag Conference Now Open to Crop Advisors and Farmers: CCA Certification Credits Available

Lori Abendroth, Sustainable Corn Project Manager
Lynn Laws, Sustainable Corn Project Communications Specialist

UPPER MIDWEST… Crop Advisors can earn continuing education credits for CCA certification through in-person and online attendance of the Resilient Agriculture Conference, August 5-7, in Ames, Iowa. Farmers and crop advisors throughout the upper Midwest are encouraged to attend in person or online, as most conference sessions will be live-streamed, with the exception of the field activities.

The conference is co-sponsored by the USDA's Sustainable Corn Project which is working to identify ways to build greater resiliency into corn-based cropping systems, in response to the effects of climate change in the Corn Belt, such as a longer growing season and extreme rain events. Scientists with the Sustainable Corn Project have been collecting and analyzing data from 35 field sites in 8 states, studying the results of various practices, such as drainage water management, cover crops, and much more. At the conference, the scientists will share their findings and a panel of farmers from four different states in the Midwest, will talk about what they have done on their farms to build resiliency into their operations.

"With weather variability like we have had these past two years, it's difficult to know when it's time to plant corn. This and other changes we're experiencing in climate patterns make it necessary to adopt management practices that provide the best results in all years," said Garry Niemeyer, a farmer in Illinois and past president of the National Corn Growers Association. "A farmer concerned with risk management for his operation should consider attending the Resilient Agriculture conference, where all of these issues and many more will be addressed."

During the conference, farmers also will participate in hands-on activities in the field to increase their understanding of the practices being researched and to learn how to use new decision support tools.

Registration, other conference details and information about the Sustainable Corn Project can be found at www.sustainablecorn.org. Registration is open through July 28.

The conference is sponsored by the USDA's Sustainable Corn Project and the 25x'25 Alliance.

Wisconsin Pest Bulletin 7/17/14

A new issue of the Wisconsin Pest Bulletin from the Wisconsin Department of Agriculture, Trade and Consumer Protection is now available. The Wisconsin Pest Bulletin provides up-to-date pest population estimates, pest distribution and development data, pest survey and inspection results, alerts to new pest finds in the state, and forecasts for Wisconsin's most damaging plant pests.

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

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

http://datcpservices.wisconsin.gov/pb/pdf/07-17-14.pdf

Think Twice Before Applying Nitrogen to Poorly Nodulated Soybean Fields

Shawn Conley, Soybean and Wheat Extension Specialist

Over the last 3 days my phone, email and twitter account has been blowing up with questions surrounding poorly nodulated soybeans and my thoughts regarding applying foliar nitrogen to alleviate those symptoms. I have been reluctant to write this article for two reasons.

This article will contradict some of my colleagues' thoughts (Identifying and responding to poor nodulation in soybean) however I would agree with their scenario of applying nitrogen to early-seeded, non-nodulating soybean planted on virgin ground.

I like to speak from data and I don't have a ton of data to speak from

So with these caveats in mind here is my thought process for asking growers and crop consultants to think twice before applying nitrogen to poorly nodulated soybean fields.

First lets start with the problem. A record number of soybean acres were planted in 2014. To get those acres both virgin ground as well as long term continuous corn acres were converted to soybean. For the most part (unless someone forgot) those acres did receive a 1x or 2x rate of inoculant. Unfortunately the perfect storm of delayed planting, poor planting conditions, compaction and poor environmental conditions all led to saturated anaerobic soil conditions that limited rhizobia infection. These poor establishment conditions were then followed by poor early season growth conditions (cool saturated soils) delayed herbicide applications, increased herbicide rates and weed competition that further stressed the plants and limited infection.

So with all this stress in mind why do I suggest no additional nitrogen?

1. Once soils dry out and aerobic conditions resume the ethylene stress response in plants quickly dissipates and normal N-fixation can resume. This will lead to nodulation occurring on lateral roots as infection occurs behind the root tip of actively growing root. Furthermore once plant roots resume normal growth they will be able to take advantage of residual and mineralized soil nitrogen which will alleviate the pale green coloration.
2. Be realistic with your yield potential. Many of the fields in question are late planted, with stunted soybeans and thin stands. A short soybean crop will require much less N than a big one. Salvagiotti et al; (2008) indicated in "Nitrogen uptake, fixation and response to fertilizer N in soybeans: A review" that the most likely soybean response to additional nitrogen was in high yield environments.
3. Be realistic with your expected yield loss in non-nodulated virgin soil environments. Somehow the idea of a 20 bu yield loss has been floating around the coffee shops. Our most recent data from a virgin soil site in 2010 showed an average +4.6 bu yield gain (range: -0.9 to 9.6 bu depending upon product) from inoculants. The untreated uninoculated check averaged 73.5 bu per acre. Also remember no history of soybean = low soil borne disease pressure and beautiful healthy roots!
4. What are your 2014 beans marketed at $14.00 or $11.92 and dropping?
5. What source of nitrogen are you going to apply and what is that cost per pound coupled with application cost and crop damage?

- Simple math equation (please insert your number for mine). 70 pounds of urea @ $0.55 per pound + $8 application cost + $10.26 yield loss from running down soybeans (90 foot applicator = 1.9% on 45 bu $12 beans) = $56.76. At $12 soybeans you would need 4.73 bu to break even. Our average response in 2010 was 4.6 bu.

I know not everyone will agree with my thought process but understand that I am cognizant of the realities of today's production ag world….high land rent costs coupled with high commodity prices = grower risk aversion. If you do apply nitrogen please leave at least one yield check and be fair to that yield check placement. Given our climate variability this will not be the last time we deal with this question and having data to streamline recommendations in future years makes us all better stewards and producers.

*Reviewed by Dr. Seth Naeve, Extension Soybean Agronomist, University of Minnesota.

Vegetable Crop Update 7/18/14 and Disease Supplement #2

The 14th issue of the Vegetable Crop Update is now available. This issue contains late blight updates, blitecast and P-Days for late blight and early blight management, a cucurbit downy mildew update, a basil downy mildew update, a cucurbit powdery mildew update, Plant Disease Diagnostic Clinic updates, and Spotted Wing Drosotphila updates. Click here to view this issue.

Disease Supplement #2 is also available. This supplement contains a late blight update. Click here to view this supplement.

Additional WI Late Blight Update

Amanda Gevens, Extension Plant Pathologist in Potatoes and Vegetables

The late blight collected from potato in Portage County on Friday July 18, 2014 is of the US-8 genotype/strain.
This type is resistant to mefenoxam/metalaxyl fungicides (ie: Ridomil) and is an A2 mating type.
While all other Phytophthora infestans genotypes from the U.S. in 2014, so far, have bee US-23, the US-8 type predominated in the 1990′s and was found in Portage County in 2013.
US-8 is known to infect both tomato and potato (much like the US-23 genotype).

At this time, it is important for potatoes and tomatoes in the Portage County area (plus roughly 50 miles radius) to be preventively managing late blight with effective fungicides. Anti-sporulant fungicides are particularly useful at this time. A 5- to 7-day spray interval is recommended. For production further away from this site, a 7 day program should be appropriate.

There is rain in the forecast for Tues for parts of the state – and then more precipitation forecasted for the week's end.

Plant Disease Diagnostic Clinic (PDDC) Update

Brian Hudelson, Ann Joy, Joyce Wu, Tom Hinsenkamp, and Catherine Wendt, Plant Disease Diagnostics Clinic

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 12, 2014 through July 18, 2014.

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

FIELD CROPS,

Corn, Chemical Burn, None, Sauk

Corn, Seedling Blight, *Pythium* sp., Marathon

Soybean, Cercospora Blight, *Cercospora kikuchii*, Iowa

FRUIT CROPS,

Apple, Fire Blight, *Erwinia amylovora*, Marinette

Apple, Sphaeropsis Canker, *Sphaeropsis* sp., Vernon

Apple, Winter Injury, None, Dane, Dunn, Vernon

Currant, Unidentified Viral Disease, Unidentified virus, Dane

Dogwood, Bacterial Leaf Spot, *Pseudomonas syringae*, Dane

Strawberry, Stem End Rot, *Gnomonia* sp., Waushara

VEGETABLES,

Basil, Downy Mildew, *Peronospora belbahrii*, Dane

Broccoli, Root/Crown Rot, *Pythium* sp., Vernon

Cucumber, Anthracnose, *Colletotrichum orbiculare*, Rock

Garlic, Fusarium Basal Plate Rot, *Fusarium* spp. Waukesha

Garlic, Soft Rot, *Pectobacterium carotovorum*, Waukesha

Garlic, Stem and Bulb/Bloat Nematode, *Ditylenchus* sp., Waukesha

Mustard Greens, Black Rot, *Xanthomonas campestris*, Racine

Mustard Greens, White Rust, *Albugo candida*, Racine

Squash, Phytophthora Crown/Root Rot, *Phytophthora capsici*, Green Lake

Tomato, Bacterial Canker, *Clavibacter michiganensis* subsp. *michiganensis*, Portage

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

Cercospora Leaf Blight and Purple Seed Stain of Soybean

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

Over the last several weeks, soybean samples have been coming into the Plant Disease Diagnostic Lab with symptoms of Cercospora leaf blight (CLB). I have also received numerous questions about the disease and have observed CLB in several soybean fields around the state.

Figure 1: Bronzing of soybean leaves caused by Cercospora leaf blight

What does Cercospora leaf blight look like? Symptoms of CLB often appear during the reproductive phase of soybeans, but can appear earlier if conditions are conducive. Typically the upper leaves of the plant that are exposed to the highest levels of sunlight will show symptoms. These symptoms include a bronze (Fig. 1) to purple (Fig. 2) blotchy appearance on the leaves. Subsequent angular lesions can manifest on the upper and lower leaf surfaces. Lesions can grow together causing leaf death and defoliation under severe cases. The fungus that causes this damage is*Cercospora kikuchii*, which is the same fungus that causes purple seed stain of soybean (Fig. 3). Heavily infected seed can cause seedling blight and reduce stands. Less severely infected seed can survive but may be stunted or show reduced vigor. Typically in Wisconsin, damage by CLB is often not severe. Leaf discoloration is the typical symptom and defoliation is usually limited. However, frequent scouting during the early reproductive phase of soybean can help with monitoring the severity of CLB during seed set.

How does Cercospora leaf blight spread? Primary inoculum can come from infected seeds or from old soybean debris on the soil surface. Infections are favored by humid conditions that result in heavy dew events. Warmer air temperatures (at or above 82 F) favor conidial formation and dispersal, which can result in secondary infection. Incidence of the seed stain phase of disease has been correlated with higher levels of spore dispersal during the season.

Figure 2: Purpling of a soybean leaf caused by Cercospora leaf blight

How should Cercospora leaf blight be managed? Soybean cultivars vary in their resistance to CLB. In fields were CLB has been a problem, cultivars with resistance should be chosen. Residue management is also important. Fields with short rotations and/or reduced tillage can have higher levels of CLB. Good quality seed should also be planted. Seed lots with high levels of purple seed stain should be avoided. Some recent data suggests that the severity of CLB might be reduced by the use of a foliar fungicide in fields with high incidence of disease. For information on efficacy of products for CLB click here. Note that many products are labeled as just "fair" and no product was rated "good" for CLB. Therefore, a CLB management plan SHOULD NOT focus solely on foliar fungicide use, but should use an integrated management approach. In addition, severity from CLB in Wisconsin will often not be high enough to justify fungicide treatment. Scout carefully!

Figure 3: Purple seed stain caused by Cercospora kikuchii

Reference

Compendium of Soybean Diseases, 4th Edition. G.L. Hartman, S.B. Sinclair, and J.C.

Follow us on

AGRONOMY/SOILS FIELD DAY

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Arlington Agricultural Research Station

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Sponsored by the UW-Madison College of Agricultural and Life Sciences and UW-Extension.

►Certified Crop Advisors: 6.0 CEU credits requested◄