Wisconsin Crop Manager

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Corn Rootworm Beetles and Potential for Silk Clipping

Bryan Jensen, UW Extension

In Wisconsin, corn rootworm beetles have started emerging. Fields out of sequence (early or late pollinating) with surrounding corn fields may be prone to silk clipping. Corn pollen and fresh silks are very strong attractants and may bring in large number of beetles. This year, because of our early planting conditions, many fields will be pollinating at the same time. This should spread the beetles over a larger area and silk clipping may not be much of an issue. However, late-planted fields may entice large number of beetles because of the fresh pollen and silk.

Silk clipping by adult corn rootworm beetles

Treat fields if silks are being clipped to within ½ inch of the ear tip but prior to 50% pollination. This usually requires 5-6 beetles/plant.

Potato leafhoppers

Bryan Jensen, UW Extension

Potato leafhoppers populations, to date, have been relatively low. Cool, wet weather has certainly not been conducive but warmer, drier weather could change that in a hurry. So far, I have not had a single call/email regarding leafhopper populations in established stands. However, I would strongly suggest monitoring new seedings. New seedings present a unique problem compared to established stands. After harvest, there is usually enough green foliage available for some nymphs to survive and either for adults to remain within the field or for a new flight to immediately migrate in. In established stands, nymphal mortality is extremely high because of the lack of food and and cover. Adults migrate out of the field for similar reasons. As a result, adult potato leafhoppers must recolonize each field after regrowth has started.

Potato leafhopper nymph

I'm not suggesting we will no longer have problems with potato leafhoppers in established stands but once we reach mid-July the probably of high populations is greatly reduced. However, now is an important time to scout new seedings.

Potato leafhopper adult

Corn rootworm: How to validate your management decision

Mid to late July in Wisconsin is the time you can validate your corn rootworm management decisions by checking for root damage. This is the time period just after feeding damage would have occurred, and just before regrowth would start to mask the damage.

Bryan Jensen with the University of Wisconsin Integrated Pest Management Program takes you into a corn field to show you how to dig corn roots to use for rating damage.

You may also be interested in this root damage scoring tutorial.

The Nebulous of Non-Nodulating Soybean in 2015

Shawn P. Conley, Soybean and Wheat Extension Specialist

Every year I get an occasional phone call, email or text regarding issues surrounding soybean nodulation concerns. This year it has been non-stop for several weeks! Here are the top four questions 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 2015. 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 an-

swer 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 data shows that a soybean plant takes up 3.56 pounds of N in above-ground tissue per bushel of grain. So a 73 bu/a crop removed 267 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)

H. M. Duzan, X. Zhou, A. Souleimanov and D. L. Smith*. 2004.Perception of Bradyrhizobium japonicum Nod factor by soybean [Glycine max (L.) Merr.] root hairs under abiotic stress conditions. Journal of Experimental Botany, Vol. 55, No. 408, pp. 2641–2646, December 2004 doi:10.1093/jxb/erh26

Sinclair, 2004. Improved Carbon and Nitrogen Assimilation. "In: Soybeans: Improvement, Production, and Uses." Third Edition. Agronomy No.16. Edited by H.R. Boerma and J.E. Specht.

Valentine, A., V. Benidito, and Y Kang. 2011. Legume Nitrogen Fixation and Soil Abiotic Stress: From Physiological to Genomics and Beyond. Annual Plant Reviews. 42:207-248.

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

Brian Hudelson, Sean Toporek, Ann Joy and Joyce Wu

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 11, 2015 through July 17, 2015.

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

Field crops

Corn, Eyespot, *Kabatiella zeae*, Marinette

Corn, Yellow Leaf Blight, *Phyllosticta maydis*, Marinette

Soybean, Brown Spot, *Septoria glycines*, Wood

Soybean, Frogeye Leaf Spot, *Cercospora sojina*, Waushara

Soybean, Root Rot, Pythium sp., *Fusarium sp.*, Wood

Soybean, Target Spot, *Corynespora cassiicola*, Waushara

Wheat, Cephalosporium Stripe, *Cephalosporium gramineum*, Dodge

Fruit crops

Blueberry, Gloeosporium Leaf Spot, *Gloeosporium sp.*, Washburn

Grape, Black Rot, *Phyllosticta ampelicida*, Green

Pear, Black Rot, *Sphaeropsis sp.*, Dane, Waukesha

Pear, Cytospora Canker, *Cytospora sp.*, Dane

Pear, Frogeye Leaf Spot, *Sphaeropsis sp.*, Waukesha

Pear, Phomopsis Canker, *Phomopsis sp.*, Dane

Strawberry, Angular Leaf Spot, *Xanthomonas fragariae*, Columbia

Strawberry, Common Leaf Spot, *Mycosphaerella fragariae*, Columbia

Specialty crops

Ginseng, Disappearing Root Rot, *Cylindrocarpon destructans*, Portage

Ginseng, Rusty (Rusted) Root, *Rhexocercosporidium sp.*, Portage

Vegetables

Asparagus, Root/Crown Rot, *Fusarium oxysporum*, Waushara

Cucumber, Angular Leaf Spot, *Pseudomonas syringae pv. lachrymans*, Portage

Garlic, Cucumber Mosaic, *Cucumber mosaic virus*, Waukesha

Garlic, Leek Yellow Strip (Suspected), *Leek yellow strip virus,* Waukesha

Garlic, Stem and Bulb (Bloat) Nematode, *Ditylenchus dipsaci*, Waukesha

Garlic, Tobacco Mosaic, *Tobacco mosaic virus*, Waukesha

Onion, Downy Mildew, *Peronospora destructor*, Fillmore (MN)

Onion, Stephylium Leaf Blight, *Stemphylium sp.*, Fillmore (MN)

Pepper, Bacterial Spot, *Xanthomonas sp.*, Washington

Pepper, Syringae Leaf Spot, *Pseudomonas syringae*, Washington

Pumpkin, Cucumber Mosaic, *Cucumber mosaic virus*, Jefferson

Squash, Cucumber Mosaic, *Cucumber mosaic virus,* Jefferson

Tomato, Bacterial Canker, *Clavibacter michiganensis subsp. michiganensis*, Sheboygan, Waushara

Tomato, Cucumber Mosaic, *Cucumber mosaic virus*, Green, Oconto, Sheboygan

Tomato, Fusarium Wilt, *Fusarium oxysporum*, Waushara

Tomato, Root Rot, *Pythium sp*, Sheboygan

Tomato, Tobacco Mosaic, *Tobacco mosaic virus,* Green, Oconto, Sheboygan, Walworth

Tomato, Tomato Spotted Wilt, *Tomato spotted wilt virus*, Iowa, Oconto

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

Wisconsin Pest Bulletin 7-23-15

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

Issue No. 14 of the Wisconsin Pest Bulletin is now available at:

https://datcpservices.wisconsin.gov/pb/pdf/07-23-15.pdf

INSIDE THIS ISSUE

LOOKING AHEAD: Western bean cutworm flight expected to peak next week

FORAGES & GRAINS: Potato leafhopper counts near-threshold in a few alfalfa fields

CORN: Corn rootworm beetle emergence gradually escalating

SOYBEAN: Soybean root rot survey finds Phytophthora sojae in 38% of sampled fields

FRUITS: Sharp increase in spotted wing drosophila flies noted last week

VEGETABLES: Cucurbit downy mildew confirmed in Dane Co.

NURSERY & FOREST: Reports from this week's nursery inspections

DEGREE DAYS: Growing degree day accumulations through July 22, 2015

Vegetable Crop Update July 18, 2015 with disease supplement #3

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

The 23rd issue of the Vegetable Crop Update is now available which includes the following topics:

- early blight updates
- late blight DSVs and updates (all late blight is US23 so far)
- cucurbit downy mildew updates

Disease supplement #3 is offered to alert growers of the positive detection of downy mildew on cucumber and cantaloupe from Dane County. This is the first detection of cucurbit downy mildew in WI wwfor 2015. Disease was in a very low level and in small acreage, relatively. Fungicides had been applied in this crop for the past 2 weeks.

Click here to view this update.

Advances using the roller-crimper for organic no-till in Wisconsin

Erin Silva, Organic and Sustainable Cropping Systems Specialist. UW-Madison

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

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.

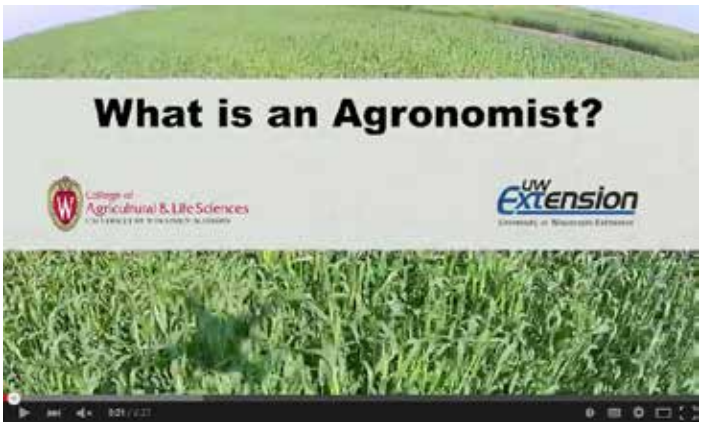
What is an Agronomist?

Shawn Conley, WI State Soybean and Wheat Extension Specialist

Agronomists ROCK! As a member of the agricultural community, you probably already know this. But do all our high school and higher education students know this as well? Do they know what it would like to be an agronomist, and why we need agronomists in our future?

This video shows some of the activities that University of Wisconsin-Madison students Adam Gaspar and Marian Lund take part in as they prepare for agronomy related careers. Adam describes why agronomy is an exciting and fulfilling field of study.

This video was developed to create awareness of agronomy related career opportunities for high school and college students. If you would like to become an agronomy student at UW-Madison, or for more general agronomy related information, follow the links below the video on YouTube.



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