Wisconsin Crop Manager

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Contents

Don't Miss Agronomy/Soils Field Day – August 31

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

As usual Agronomy/Soils Field Day has a fantastic program lined up! Phil Townsend will discuss new frontiers in remote sensing for agriculture during the lunch program. A special tour focusing on UW research on remote sensing in agriculture is slated for the afternoon. Other tours will include recent research on soil fertility & management, grain production systems, forage production system and pest management.

The SnapPlus team and Nutrient and Pest Management Program along with the UW Soil & Forage Analysis Lab will have display booths to visit between tours. The Badger Crops Club will provide lunch ($5 donation).

The field day will be held at the Arlington Ag Research Station beginning at 8:30 am and concluding at 2:45 pm. This year all attendees will need to sign a waiver before they can ride tour wagons. Please come early to help facilitate this new process. Program details can be found in the flyer.

Wisconsin White Mold Risk Map – July 15, 2016

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

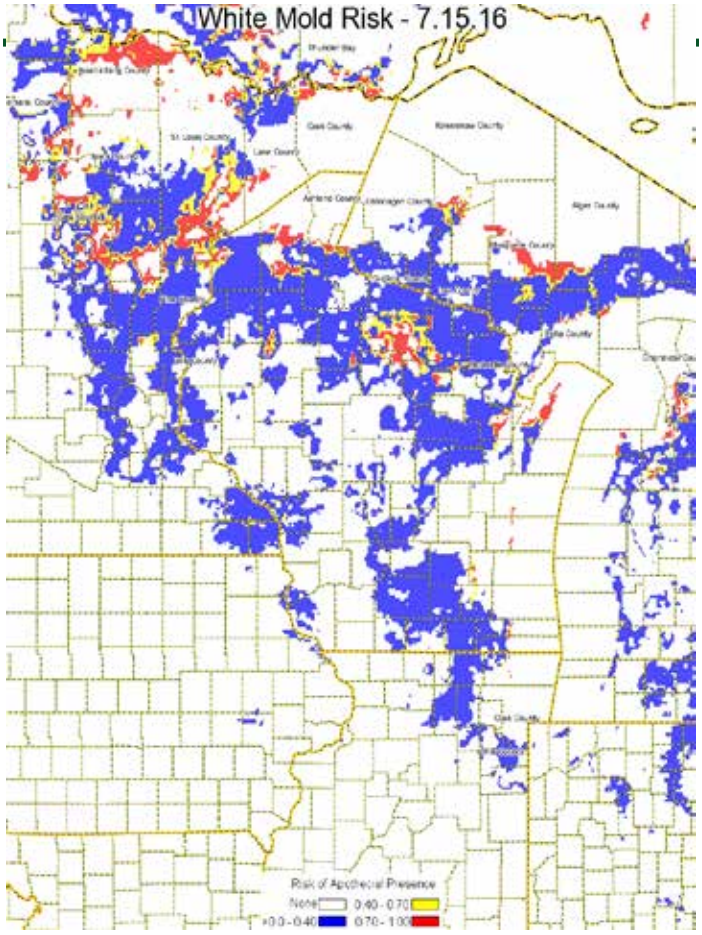
Jaime Willbur, Graduate Research Assistant, University of Wisconsin-Madison

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 which can be downloaded by clicking here

Risk of apothecial presence and subsequent white mold development remains generally low for most of Wisconsin today. Risk has increased slightly across the state over the holiday weekend with some isolated pockets in the northern and south-central areas of the state. The UW Field Crops Pathology crew has been scouting for apothecia in fields in the soybean growing areas of south and central Wisconsin and HAVE NOT found any apothecia. This confirms the generally low risk currently being predicted by the model. Growers near higher risk pockets should monitor the soybean crop for closing canopy and flowering growth stages that may lead to increased risk of white mold. We have seen numerous fields this week already in the R1 growth stage. Be sure to consult the how-to guide for assistance in interpreting this map if you are considering spraying fungicide to control white mold.

White Mold Risk July 15, 2016



Benchmarking Soybean Production Systems in the North-Central USA

Shawn P. Conley, Soybean and Wheat Extension Specialist

This is our preliminary report (year 1) from our Region-Wide Project aimed at generating baseline producer data on current soybean management practices across the North-Central soybean production region. This project is funded by many state check-off boards including the WI Soybean Marketing Board (WSMB) and the North Central Soybean Research Program (NCSRP). The project goal is to identify the key factors that preclude 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".

Click here to view this report.

Soybean Aphids

Bryan Jensen, UW Extension and IPM Program

Although soybean aphid populations have been low this growing season, I thought I would offer a quick summary of an article recently written and reviewed by several research and extension entomologist from the northern soybean producing states. In recent years, there has been a wealth of soybean aphid management information provided from Land Grant Universities which are the results of multiple studies, conducted in several environments that are science-based, statistically sound and peer-reviewed. There is also advice offered from several other sources which contradicts these findings and/or makes claims based on hunches and/or observations. Always consider the source of your information as well as the method in which it was collected. The entire article can be reviewed at http://www.extension.umn.edu/agriculture/soybean/pest/soybean-aphid/soybean-aphid-biology-and-economics/

Soybean aphids damage soybean by extracting plant sap from phloem vessels which carry the products of photosynthesis to other parts of the plant. Initially aphids may "test-probe" plants to determine if they are suitable for sustained feeding. Sustained feeding during the early reproductive stages can result in reduced growth, pod number, seed size and weight as well as oil concentration. Feeding during the later reproductive stages may only affect seed size. Making crop stage an important consideration when making treatment recommendations. Duration of feeding is also an important consideration and is why multiple scouting trips are recommended.

Neither sustained feeding or test probing causes the plant to "leak sap" nor has there been documented evidence that this feeding transmits bacterial or fungal pathogens. However, aphid feeding does transmit viral pathogens such as alfalfa mosaic and soybean mosaic viruses. These viruses are not currently considered wide spread and are not included in the economic threshold.

Understanding the soybean aphid Economic Threshold (an increasing population of 250 aphids/plant on 80% of the plants) is better understood with an appreciation of the Damage Boundary (lowest pest population which can cause measurable yield loss) and Economic Injury Level (point at which cost of control equals yield loss). The Damage Boundary is not based on economics, but rather the ability of scientists to statistically measure yield loss at a specific pest population. No economic gain would be expected by treating aphid populations which are below the Damage Boundary. The Economic

Injury Level is based on economics and includes the cost of application and crop value. The Economic Threshold (250 aphid/plant, etc.) is an arbitrary and conservative number which was based on close monitoring of several multi-state research projects (including Wisconsin). It was established at this level to allow producers and crop advisors time to react and prevent an aphid population from reaching the Economic Injury Level. The soybean aphid Economic Threshold is well below the Damage Boundary. Some people question the legitimacy of the Economic Threshold because it was based on economic estimates from the mid-2000's. Recall, the Economic Threshold is already below the Damage Boundary and no economic gain would be expected if treating below the Economic Threshold as some sources have suggested. It may help your understanding if you view the Economic Threshold as an "action" or "treatment" threshold. Furthermore, treating a population below the Economic Threshold decreases the chance that natural enemies or other environmental condition will control the aphid population for you.

There are additional costs to treating soybeans too early. New foliage that emerges after an application of a synthetic pyrethroid or organophosphate will not be protected. Other classes of insecticides may translocate upward but only a leaf or two. This is especially a concern if treatments are done early in the growing season.

Most insecticides used today are broad spectrum. Meaning they kill a wide variety of insect species not just those which are considered pests. Killing beneficial insects may allow for the soybean aphid population to resurge at a later date in the absence of these beneficial organisms. If spider mites are present at sub-economic populations and an insecticide is used that does not control mites, mite populations may flare in the absence of beneficial insects and mites.

Soybean aphid populations vary from field to field. Environmental, geographic, biological and agronomic factors can all influence soybean aphid populations. The low cost of insecticides and/or the concept of free applications costs when tank-mixed with another pesticide can lead to negative after-effects including insecticide resistance.

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

Kevin Shelley, UW Nutrient and Pest Management Program
608-575-4746

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, typically, 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. Each are particularly well-suited to specific objectives. 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, barley, spring triticale, 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 TDM/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. Terminate rye as a cover crop by late April before it grows too large.

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, actually, 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 (MRC)** (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. Allare good choices for a wheat-corn-soybean grain crop rotation. Clovers may also be harvestable as forage.

The annual legumes will grow quickly when planted in mid-summer if moisture is sufficient. Medium red clover can be seeded after wheat harvest, but is best when companion seeded early in the spring. A common method for medium red clover establishment is frost seeding, or broadcast seeding into fall-established wheat early the following spring. Early-planted medium red clover will normally yield more biomass and creditable N than sequentially seeded legumes. Field peas are 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.

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.

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

Brian Hudelson, Sean Toporek, 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 9, 2016 through July 15, 2016.

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

Field Crops
Corn, Common Rust, *Puccinia sorghi,* Grant, Rock
Corn, Northern Corn Leaf Blight, *Exserohilum turcicum,* Grant, Rock
Soybean, Brown Spot, *Septoria glycines*, Columbia
Soybean, Iron/ Manganese Deficiency, None, Sauk
Oats, Read Leaf, *Barley yellow dwarf virus,* Langlade

Forage Crops
Alfalfa, Lepto Leaf Spot, *Leptosphaerulina briosiana,* Columbia

Fruit Crops
Apple, Black Rot, *Sphaeropsis sp.*, Trempealeau
Apple, Cedar-Apple Rust, *Gymnosporangium sp.,* Grant
Strawberry, Root/Crown Rot, *Pythium sp., Rhizoctonia sp.*, Bayfield, Columbia

Vegetable Crops
Garlic, Cucumber Mosaic, *Cucumber mosaic virus*, Waukesha
Garlic, Fusarium Basal Plate Rot, *Fusarium sp.,* Vernon, Waukesha
Garlic, Garlic Mosaic, *Unidentified potyvirus,* Vernon
Garlic, Stem and Bulb nematode, *Ditylenchus dipsaci,* Vernon
Onion, Downy Mildew, *Peronospora destructor,* Rock
Onion, Purple Blotch, *Alternaria porri,* Rock
Onion Stemphylium Leaf Blight, *Stemphylium sp.,* Rock
Potato, Potato Early Dying, *Verticillium sp.,* Adams
Squash (Winter), Angular Leaf Spot, *Pseudomonas syringae pv. lachrymans*, Rock
Tomato, Herbicide Damage, None, Portage
Tomato, Septoria Leaf Spot, Septoria lycopersici, Portage

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

Vegetable Crop Update July 15, 2016

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

19th issue of the Vegetable Crop Update is now available. In this newsletter we focus on:

- DSV (Late Blight forecast) and P-Day (Early Blight prediction) updates
- Late blight and Cucurbit downy mildew national updates

Click to view this issue.

Wisconsin Pest Bulletin for 7-21-16

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

Volume 61 Issue No. 12 of the Wisconsin Pest Bulletin is now available at:

https://datcpservices.wisconsin.gov/pb/pdf/07-21-16.pdf

INSIDE THIS ISSUE

LOOKING AHEAD: Peak flight of western bean cutworm moths underway

FORAGES & GRAINS: Potato leafhopper counts still low for late July

CORN: True armyworm larvae appearing in alfalfa and corn

SOYBEAN: Soybean aphid densities well below 250 aphid-per-plant threshold

FRUITS: Marked increase in SWD trap counts noted in the last two weeks

VEGETABLES: Onion downy mildew confirmed by UW in Rock County

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

DEGREE DAYS: Growing degree day accumulations as of July 20, 2016

Follow us on

AGRONOMY/SOILS FIELD DAY

Wednesday, August 31, 2016

UW-Arlington Agricultural Research Station

College of Agricultural & Life Sciences, University of Wisconsin-Madison — Growing the future

UW Extension, University of Wisconsin-Extension

PROGRAM

8:00	Registration ($0), wagon waivers*, coffee
8:30 Tours	Soil Fertility & Management Grain Production Systems Pest Management
10:30 Tours	Soil Fertility & Management Grain Production Systems Forage Production Systems
12:00	**New Frontiers in Remote Sensing for Agriculture** Phil Townsend Lunch provided by Badger Crops Club ($5 donation)
1:00 Tours	Pest Management Forage Production Systems Use of Remote Sensing in the Field
2:45	Have a safe trip home!

* UW Risk Management requires all attendees to sign a waiver before they can ride the tour wagons. Please come early to help facilitate this new process.

The Arlington ARS is located on Hwy. 51, about 5 miles south of Arlington and 15 miles north of Madison. Watch for Field Day signs.
GPS coordinates: 43.300467, -89.345534

In the event of rain, presentations will be held inside.

For more information contact the Department of Agronomy 608/262-1390 or the Department of Soil Science 608/262-0485.

Certified Crop Advisors: 7.5 CEU credits requested

TOURS

8:30	10:30	Soil Fertility & Management	
		Split/late N applications to corn - Should I be using them?	Carrie Laboski
		The unseen majority - Microbial life in the soil	Thea Whitman
		Cover crops: Interseeding, nitrogen credits and soil health	Matt Ruark
		Quenching the thirst of crops: Improving soil water availability	Francisco Arriaga
8:30	**10:30**	**Grain Production Systems**	
		High input systems for higher yields	Shawn Conley
		Soybean nutrient uptake	Adam Gaspar
		Strip-tillage in Wisconsin	Joe Lauer
		The importance of breeding diversity into crop hybrids and varieties	Lucia Gutierrez
8:30	**1:00**	**Pest Management**	
		Diseases that affect Wisconsin field crops	Damon Smith
		Economics and resistance management of corn rootworm	Paul Mitchell & Bryan Jensen
		Weed community composition and emergence in long-term no-tillage, strip-tillage, and chisel plow corn and soybean systems	Nathan Drewitz & Dave Stoltenberg
		Managing volunteer wheat in late summer alfalfa seedings	Mark Renz
10:30	**1:00**	**Forage Production Systems**	
		Reduced lignin alfalfa	Ken Albrecht
		Establishing alfalfa in silage corn	John Grabber
		Ash in hay and wheel traffic	Dan Undersander
		Breeding cool season grasses	Mike Casler
1:00		**Use of Remote Sensing in the Field**	
		Utilizing remote sensing to estimate soybean emergence and sudden death syndrome	Steve Vosberg
		Hyperspectral imaging of soybean trials	Ittai Herrmann
		Using UAVs for remote sensing: How to and FAA regulations	Brian Luck
		Using sensors for N management in wheat	Carrie Laboski

Visit exhibits between tours and during lunch: *Apps for Ag, Nutrient & Pest Management Program, IPM Program, SnapPlus and more!*