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Soybean Yellowing at V2 Growth Video

Shawn Conley, Soybean and Wheat Extension Specialist

Dr. Shawn Conley visits a wheat field to answer this question. For more information from Dr. Conley, visit http://www.coolbean.info Integrated Pest Management (IPM), University of Wisconsin.

Click on the image below to view this video.

Vegetable Crop Update 6/15/13

The 8th issue of the Vegetable Crop Update is now available. This issue contains information on Disease Severity Values and PDays for early blight management. Click here to view this issue.

Assessing Flood Damage to Soybean

Shawn Conley, State Soybean and Wheat Specialist University of Wisconsin, Madison, Grover Shannon, University of Missouri, Division of Plant Science

Severe flooding has many low-lying soybean fields underwater. As the water dissipates yield potential and replant questions will arise. Flooding can be divided into either water-logging, where only the roots are flooded, or complete submergence where the entire plants are under water (VanToai et al., 2001). Water-logging is more common than complete submergence and is also less damaging. Soybeans can generally survive for 48 to 96 hours when completely submersed (Image 1). The actual time frame depends on air temperature, humidity, cloud cover, soil moisture conditions prior to flooding, and rate of soil drainage. Soybeans will survive longer when flooded under cooland cloudy conditions. Higher temperatures and sunshine will speed up plant respiration which depletes oxygen and increases carbon dioxide levels. If the soil was already saturated prior to flooding, soybean death will occur more quickly as slow soil drainage after flooding will prevent gas exchange between the rhizosphere and the air above the soil surface. Soybeans often do not fully recover from flooding injury.

Image 1. Flooded soybean field located at Arlington WI, June 8th 2008.

Crop injury from water logging is difficult to assess. Water-logging can reduce soybean yield 17 to 43% at the vegetative growth stage and 50 to 56% at the reproductive stage (Oosterhuis et al., 1990). Yield losses are the result of reduced root growth, shoot growth, nodulation, nitrogen fixation, photosynthesis, biomass accumulation, stomatal conductance, and plant death due to diseases and physiological stress (Oosterhuis et al., 1990; VanToai et al., 1994 and 2003). A significant amount of genetic variability for flooding tolerance among soybean varieties occurs inmaturity groups II and III (VanToai et al., 1994) and likely exists for maturity group I soybeans as well.

Increased disease incidence in the surviving plants may also occur and limit yield potential. The main culprit will likely be phythophthora given the warm wet weather; however phythium, rhizoctonia, or fusarium may also occur. Differential response among varieties will be tied to the sources of genetic resistance to these diseases.

Once we can get back into the fields the decision to replant will be based on the yield potential of the current stand relative to the cost and yield potential of the replanted soybean field (Table 1). Before any decision to tear up a field is made make sure you contact your crop insurance agent to discuss coverage and you have the replant seed on your farm or at least en route. As we all know seed supplies are tight and replant acres will be high. Also remember to check herbicide labels for plant back restrictions if you are planning to plant soybean into a flooded corn field.

Early plant population	Replanting date									
	May 1-20		June1		June 10		June 20		July 1	
Ppa x 1000	% of maximum yield									
200	**100**[1]	86	**89**	90	**75**	75	**68**	67	**61**	60
180	**98**	85	**88**	87	**75**	72	**66**	64	**63**	60
160	**97**	84	**87**	84	**70**	70	**64**	61	**63**	58
140	**95**	83	**85**	81	**67**	67	**62**	57	**62**	56
120	**93**	81	**82**	78	**65**	65	**59**	53	**60**	52
100	**91**	80	**80**	76	**63**	63	**57**	49	**56**	47
80	**88**	79	**77**	73	**61**	61	**54**	44	**51**	40
60	**86**	78	**73**	70	**60**	60	**51**	39	**44**	33
40	**83**	77	**69**	67	**59**	59	**47**	34	**35**	25

[1]Yield potential of full season varieties are in bold while yield potential of earlier maturity group soybeans are given in normal text.

Table 1. Expected relative soybean yield at four replanting dates compared to predicted yields for a range of plant populations resulting from an optimum planting date of May 1-20 for full season maturity or short season maturity varieties.

Since full season maturity group soybeans are unrealistic for planting this late only early and mid-group soybean cultivars should be considered. The average yield potential for soybean planted in late June in southern WI is in the 30 to 35 bu yield range (Figure 1). For yield potential and harvestability, (a combine may not be able to pick up the lower pods) a grower should plant if possible a mid maturity group soybean instead of an early maturity group for their geographic area.

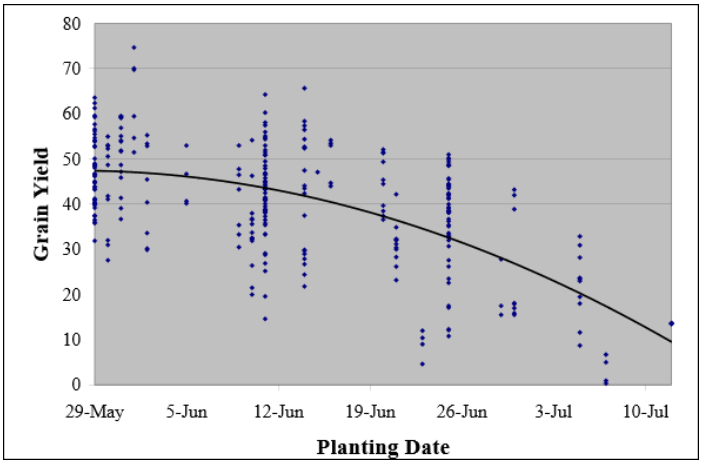

Figure 1. Planting date effect on grain yield of early to mid maturity group soybeans (0.4 to 1.8 RM) in southern WI (Data from early 1990s planting date study).

To maximize yield potential in late planted soybean, a minimum of 180,000 plants per acre is required in a drilled system as yield potential in rowed beans would be significantly reduced due to decreased canopy development. To achieve 180,000 plants per acre a grower may have to seed as many as 225,000 seeds per acre.

NSSI: How Soy Sustainability can help you Meet your Customers' Demands and Expand your Markets

Shawn Conley, Soybean and Wheat Extension Specialist

Executive Summary (4 min 44 sec)	**Full Presentation (15 min 30 sec)**
for PC and Android	**for PC and Android**
for Apple devices	**for Apple devices**

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Summary: This presentation will help U.S. growers, ag professionals, and consumers, as well as multi-national companies and NGO's understand the National Sustainable Soybean Initiative (NSSI). Specifically in this presentation, participants will be introduced to NSSI's mission which is to develop a roadmap of soybean management systems that will help producers to achieve verifiable sustainability outcomes, improve the environmental services and productivity of their farms, help their rural communities thrive, and satisfy performance expectations of the value chain. These efforts will operate at the farm level, incorporate a framework of tools and technical information from a wide base of expertise and programs, and, with the support of regional and national experts, communicate sustainable soybean management systems.

Responsibility: United Soybean Board (USB) farmer-leaders develop and maintain partnerships with U.S. land grant

universities and U.S. ag-focused research organizations such as the Plant Management Network to increase the transfer of checkoff-funded applied and practical production research information to U.S. soybean farmers. USB neither recommends nor discourages the implementation of any advice contained herein, and is not liable for the use or misuse of the information provided.

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Plant Disease Diagnostic Clinic (PDDC) Update

Brian Hudelson, Ann Joy, Erin DeWinter and Joyce Wu, 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 June 8, 2013 through June 14, 2013.

PLANT/SAMPLE TYPE	DISEASE/DISORDER	PATHOGEN	COUNTY
FRUIT CROPS			
Grape	Anthracnose	*Sphaceloma ampelinum*	Fond du Lac
VEGETABLES			
Cabbage	Abrasion Injury	None (Blowing Sand)	Waupaca
OTHER			
Soil	Soybean Cyst Nematode	*Heterodera glycines*	Grant

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

Wisconsin Winter Wheat Disease Update – June 19, 2013

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

This week I scouted winter wheat in variety trials in Lancaster and Arlington Wisconsin on June 19, 2013. Wheat has completed flowering in these locations and most locations in southern Wisconsin.

In Lancaster, stripe rust was present at low levels. Previously, no rust had been found at this location. I saw low incidence and severity (<10% leaf area affected) in this location. Note that fungicide recommendations are not recommended, or legal in most cases according to the label, after flowering has completed. Continue scouting in areas in central and northern Wisconsin where wheat is flowering. If rust is noted in these locations where wheat has not flowered or is currently flowering monitor severity on flag leaves and make a decision to apply a fungicide.

I also found several wheat heads with symptoms and signs of Fusarium head blight or scab at the Lancaster location. Wheat in this location is past the window of opportunity to apply a fungicide. Wheat that is currently flowering in central or northern areas of Wisconsin is currently at low risk for Fusarium head scab according to the Fusarium head blight risk assessment tool (http://www.wheatscab.psu.edu). As of this writing, the tool is showing low risk for the entire state of Wisconsin. This situation should be monitored closely over the next week or so in areas where wheat is flowering. The weather pattern is projected to be warm and very humid, which can favor Fusarium head blight. If wheat is flowering, and in an area of risk, then a fungicide application might be considered. DO NOT use fungicides that contain strobilurin fungicides (FRAC 11) for control of head scab, as increased risk for DON (deoxynivalenol) can result. A triazole fungicide such as Prosaro, Caramba, Proline, or similar product applied during the onset of flowering to 3-5 days after will be most effective. To learn more about Fusarium head blight and how to manage the disease, visit http://fyi.uwex.edu/fieldcroppathology/.

Wisconsin Pest Bulletin

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. 8 of the Wisconsin Pest Bulletin is now available at:

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

http://datcpservices.wisconsin.gov/pb/pdf/06-20-13.pdf

2013 Pest Management Field Day

Bryan Jensen, IPM Program

Please remember to join us on June 27 for the Pest Management Field Day at the Arlington Agricultural Research Station. Tours will leave the Public Events Building promptly at 8:30 am and return at noon for a light lunch. New this year, there will be a bonus afternoon tour of several Weed Science Efficacy studies by Dr. Vince Davis, Tim Trower, and others in the Wisconsin Crops Weed Science program. Wagons will leave the Public Events Building at 1:00 pm. In the event of rain, speakers will present their topics inside the Public Events Building.

Speakers and morning topics will include:

Mark Renz, Dept. of Agronomy	Roundup Ready Alfalfa Removal in No-Till Fields
Eileen Cullen, Dept. of Entomology	Update on Corn Insect Traits and the Status of CRW Resistance and Recommended IRM
Shawn Conley and David Marburger, Dept. of Agronomy	Interactions Between SCN and SDS
Damon Smith, Dept. of Plant Pathology	Alfalfa Foliar Fungicide Research
Quinn Watson Dept. of Plant Pathology	Quantifying the effect of sulfur source and concentration on the growth of *Aphanomyces euteiches in vitro* and Aphanomyces root rot development in alfalfa
Vince Davis, Liz Bosak, Tommy Butts, and Daniel Smith, Vince Davis Dept. of Agronomy	National Threat of glyphosate-resistant Pigweeds: UW efforts to research and extend relevant information in Wisconsin
Dave Stoltenberg, Stacey Marion and Courtney Glettner, Dept. of Agronomy	Research Update on Herbicide-Resistant Giant Ragweed
Ross Recker, Dept. of Agronomy	Pro-active Late-Season Weed Escape Surveys and Herbicide Resistance Screening Results
Dan Heider, Dept. of Horticulture	Reducing Spray Drift – Making Good Choices
Lunch at Public Events Facility	
Dr. Vince Davis et al. Dept. of Agronomy	Afternoon weed Science Efficacy tour. Mostly self-guided. Many plots will be signed and treatment lists available.

The Public Events Facility is located on the Arlington Agricultural Research Station, N695 Hopkins Road. If traveling from the south, exit I 90/94 onto Hwy 51 North. Look for the Arlington Ag. Research Station sign north of Deforest. Turn left (west) onto Badger Lane. Travel 1 mile and turn left (south) onto Hopkins Rd. If traveling from the north, exit I 90/94 onto Hwy 60. Travel east through Arlington and turn south onto Hwy 51. For more detailed driving direction click on http://www.ars.wisc.edu/arlington/directions.html

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