

Wisconsin Crop Manager

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Cereal Leaf Beetle: A curiosity in WI small grains

Bryan Jensen

UW Extension and IPM Program

Recently, I've been hearing discussions regarding wheat disease management. During your disease scouting efforts some of you may have, or will soon notice some unusual insect feeding on the upper leaf surface. That could be the result of cereal leaf beetle (CLB) larvae, which at best, has been a curiosity and rarely an economic pest in Wisconsin.

Feeding is usually described as slender or elongated feeding scars on the upper leaf surface between major veins. These symptoms are often referred to as "window-paneing". Early instars are pale yellow and have a brown head. Late instars cover themselves with fecal material and are often confused with slugs. However, CLB larvae will have a well-defined head no antennae and 3 sets of jointed legs.

During the 2015 growing season several crop consultants noticed elevated feeding injury on individual plants. However, field averages were still well below the economic threshold. To give you a perspective on economic thresholds, Penn State suggests 1 larvae/4 tillers, North Dakota State University suggest three larvae/plant and Michigan State suggests 1 larvae/flag leaf.

Again, CLB feeding has been more of a curiosity in Wisconsin.



CLB Larvae



CLB Feeding Scars

Assessing Flood Damage to Soybean

Shawn Conley, State Soybean and Wheat Specialist
University of Wisconsin, Madison

Grover Shannon, University of Missouri, Division of Plant Sciences

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



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

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 cool and 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.

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 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 phytophthora 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.

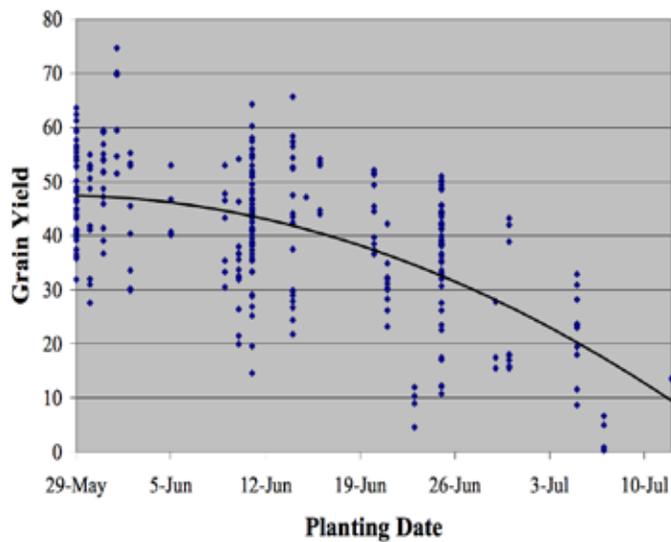
Since full season maturity group soybeans are unrealistic for planting this late only early and mid-group soybean cultivars should be considered. The average yield potential for soybean planted in late June in southern WI is in the 30 to 35 bu yield range (Figure 1). For yield potential and harvestability, (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.

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.

Early plant population	Replanting date									
	May 1-20		June 1		June 10		June 20		July 1	
Ppa x 1000	-----% of maximum yield-----									
200	100¹	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

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

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.

Literature Cited:

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Improve Control of Giant Ragweed with New "Focus on Soybean" Webcast

Shawn Conley
Soybean and Wheat Extension Specialist
Department of Agronomy

Giant ragweed, if left unchecked, will compete with slower growing soybean plants for critical resources and can significantly reduce yield, with losses reaching as high as 30-90 percent in soybean field trials.

The Plant Management Network (PMN) has released a new presentation entitled "[Herbicide Resistance in Giant Ragweed](#)" for growers, crop consultants, and extension agents discussing the biological characteristics that make giant ragweed problematic in soybean production and how its increased resistance to herbicide impacts potential control strategies.

The webcast, developed by Bill Johnson, Professor of Weed Science at Purdue University, chronicles giant ragweed's increasing resistance to herbicide varieties and describes how stem-boring insects can aid its chances of surviving a herbicide treatment. It also discusses the:

- Effectiveness of various herbicide application strategies
- Herbicide varieties that best combat different resistance profiles
- Essential techniques for optimizing ragweed control

The 20-minute presentation will remain open access through July 31 in the [Focus on Soybean](#) webcast resource.

The Plant Management Network is a nonprofit publisher of applied, science-based resources that help enhance the health, management, and production of agricultural and horticultural crops. Partnering with over 80 universities, nonprofits, and agribusinesses, PMN provides materials covering a wide range of crops and contemporary issues through the online [PMN Education Center](#).

EMBEDDED LINKS

Herbicide Resistance in Giant Ragweed
<http://www.plantmanagementnetwork.org/edcenter/seminars/soybean/GiantRagweed/>

Focus on Soybean webcast resource
<http://www.plantmanagementnetwork.org/fos>

PMN Education Center
<http://www.plantmanagementnetwork.org/edcenter/>

PMN Update
<http://www.plantmanagementnetwork.org/update/current>

Survey results for the UW-Madison Wisconsin Crop Manager Newsletter

The **Wisconsin Crop Manager** (WCM) is an electronic newsletter that features weekly pest and crop management information throughout the growing season. There were over 1,100 subscribers in 2015, and UW faculty and IPM staff wrote over 200 articles on a range of IPM and agronomic topics. The 30 weekly issues were downloaded 20,000 times during 2015, and an average of more than 3,000 visitors per month visited the blog.

In fall of 2015, a link to an online survey was sent to everyone on the email subscriber list. 194 people filled out the survey for a response rate of approximately 50% of “active” readers and close to 20% of all subscribers. Over half (63%) of the respondents work in private industry, including consultants, IPM specialists, sales, insurance, and farmers (10% of the readership are farmers). Approximately one-third (32%) work for a federal, state, county or local government agency; including 7% who are Extension agents. Most have been reading or subscribing to the WCM for around 10 years.

Results of the survey

Do people like the format and delivery of the newsletter?

A large majority (88%) access WCM as issues or in newsletter format as compared to one article at a time (e.g. via the Twitter feed), and many respondents (82%) read 75-100% of the issues they receive. The ones who access WCM in the newsletter format tend to read more of the content than the ones who access WCM on an article basis. Most of the respondents like the format and delivery of the WCM, and a large majority (71%) do not recommend any changes in this regard.

Is the newsletter a trusted and valuable source of information?

The Wisconsin Crop Manager is a trusted source of information, with 95% of the respondents who “often” or “always” trust and believe the information they read there. This was true regardless of how many articles the respondent typically reads in each issue. Readers find the Wisconsin Crop Manager valuable for timely advice on crop production, pest management and nutrient management, timely information on educational programs, and unbiased, science-based information. In their work, readers of the Wisconsin Crop Manager use the information to help manage crop pests, diseases, weeds, and to provide forecasts or warnings. A large majority (87%) finds either “most” or “some” of the articles relevant (56% said “most” and 31% said “some”).

Most respondents are unsure if they would be able to get this information elsewhere, and most (68%) value WCM more than other industry sources. Readers do not think the information from the WCM is a duplicate (93%); in other words they receive information there that they do not receive elsewhere.

Great work with unbiased research! Farmers would not receive the same information if only company representatives shared information! You keep on top of items BEFORE they become a problem. You look at prevention rather than always a crisis treatment! Thank you! (Ag teacher, Central WI)

It is a very useful publication and I would hope you would continue publishing. Years ago I read a paper copy and always found it interesting. Keep up the good work. (CCA Conservationist, SE WI)

Keep up the good work. You are providing a very valuable resource! I have great confidence in the research and recommendations from UW scientist and extension staff. (USDA Agronomist, SW WI)

How far does WCM information go?

The WCM readership extends beyond those on the subscription list. Two-thirds of the respondents share information with others, typically crop consultants and farmers. This trend correlates with other research findings that describe how farmers are less likely to receive information directly from University Extension sources than they are to get it from crop consultants and advisors. The readers who share the information mostly share it by email (95%) or in conversation (89%) and by printed copy (63%). By having them report the number of people and the frequency with which they share information, we estimate that the WCM has a reach of almost 120,000

touches per year. On average, these readers share about once a month with anywhere from 1 to 2,500 people each time. Information is distributed orally, by email, and by printed copy to an average of 7-14 people each time and via social media, newsletters, websites, and publications to about 225-1,500 people.

Does it save readers money?

One-third (34%) of the respondents said they saved dollars in their farm or consulting practice. These savings accrued from pest predictions and notifications, crop scouting recommendations, information on fertilizer and pesticide applications, prophylactic treatment options, economic thresholds, weed control, and seeding rates.

It is easily in the thousands to tens of thousands [of dollars]. (Self-employed, SE WI)

Where else would readers seek this information?

If the Wisconsin Crop Manager was unavailable, only 18% of the respondents said they would be able to get relevant information elsewhere, with most of this group (64% of this portion) identifying a neighboring state's Extension service as their next likely source of relevant information.

The issues I'm seeing in my fields are often the issues in this week's crop manager. For example, I used an article to decide on the proper timing of a fungicide application to prevent head scab in wheat. It was my first use of the fungicide and it worked really well in preventing high vomitoxin levels. (Grower, Central WI)

Maximum Return to Nitrogen recommendations... this information was shared through various methods including the crop manager newsletter. As a result, at forage council spring field days, I had producers raise their hands to indicate if they had reduced their nitrogen rates using the MRTN info, and the majority of farmers in a meeting of about 45 people had indicated they had done so. (Agricultural Agent – UW-Extension, NE WI)

A big thank you!

Thank you to everyone who contributed to the WCM survey and this report. Thank you to all WCM authors, contributors, subscribers and readers in general for making the WCM newsletter a valuable source of agricultural information.

Vegetable Crop Update June 3, 2016

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

The 11th issue of the Vegetable Crop Update is now available.

In this issue :

- Late blight disease management
- Forecast information
- Listing of fungicides with information regarding their usage
- National updates on both late blight and cucurbit downy mildew.

[Click here to view this update.](#)

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