Wisconsin Crop Manager

Volume 25 Number 5 - - University of Wisconsin Crop Manager - - April 26, 2018

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The Soybean Seeding Rate Conundrum

Shawn Conley, State Soybean and Small Grains Specialist

In a bean-pod…

- Use a soybean seed treatment
- Plant less than 140,000 seeds in white mold areas
- Target a final stand of 100,000+ plants in productive fields
- Target a final stand of 135,000+ plants in low productivity fields or areas within fields

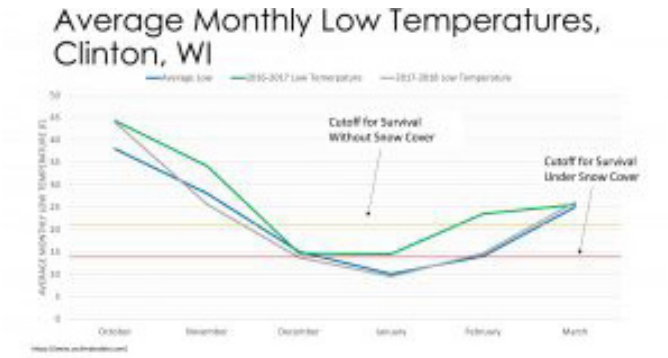
Soybean seeding rate is one of the most heavily debated and frankly, in my humble opinion, the most overthought agronomic decision we make in soybean. As a general rule of thumb I recommend farmers purchase a bag of seed per acre (140,000 seed count) and plant that entire bag per acre (140,000 seeds) (Figure 1). Remember your target is to get a minimum stand of 100,000 plants per acre as this population will achieve 100% yield potential in most field environments. This above recommendation holds true in many high yielding field situations.

To read the full article, click here.

Wisconsin Winter Wheat Disease Update – April 17, 2018

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

The Wisconsin Field Crops Pathology crew scouted the winter wheat uniform variety trials located in Sharon, Wisconsin late last week (April 12, 2018) prior to the lat-



est snow storm. This is our most southerly location (near the IL state line), and is often a good early indicator of disease issues for Wisconsin. Wheat was trying to green up a bit, but the latest snow fall will surely set the crop back. With more snow in the forecast for April 18, 2018 it will be some time before we can scout wheat again for disease. That is the bad news. The good news is that we did not find any diseases.

With numerous reports of active stripe rust from states in the Mid-south we were concerned that early stripe rust might be present. We scouted known varieties to be susceptible, with no foliar symptoms apparent. You will remember in 2017, we identified active stripe rust very early in Wisconsin. This was due to overwintering of Puccinia striiformis inoculum from active infections that started in the fall of 2016. We suspect that warmer winter conditions in the 2016-2017 field season allowed P. striiformis to overwinter. Sharma-Poudyal et al. (2014) reported models that predict overwintering of P. striiformis when the 30-day average low temperatures are 14F or above with snow cover, or 21F or above without snow cover.

Figure 2. Average 30-day low temperatures, 2016-2017 30-day average low temperatures, and 2017-2018 30-day average low temperatures and P. striiformis survival thresholds under snow cover and without snow cover for Clinton, Wisconsin.

Using these thresholds and data from US Climate Data (https://www.usclimatedata.com/) for Clinton, Wisconsin (very close to our research site) in the 2016-2017 field season, we found that the under-snow-cover threshold was not below the 14F mark (Fig. 2). These warm conditions in 2016-2017 likely resulted in overwintering of inoculum at this location during last season. Using the same temperature thresholds and looking at 30-day average low temperatures for the 2017-2018 field season, we find that low temperatures where much more seasonable and were well below even the under-snow-cover threshold in January 2018 (Fig. 2). Thus, the risk for overwintering of P. striiformis inoculum in far southern Wisconsin is low this season. Even if active P. striiformisinfections were found in fall of 2017, the likelihood it survived the winter was unlikely; especially considering the low temperatures in January of 2018 with minimal snow cover at this site during that time.

We will continue to scout winter wheat fields once snow melts. I would encourage others to get out and scout once the weather improves. Be sure to pay close attention to any winter wheat varieties that are known to be susceptible to stripe rust.

Literature cited:

Sharma-Poudyal, D., Chen, X., and Alan Rupp, R. 2014. Potential oversummering and overwintering regions for the wheat stripe rust pathogen in the contiguous United States. Int J Biometeorol. 58:987-997.

Wisconsin Herbicide Mode of Action Chart

Daniel H. Smith- Nutrient and Pest Management Program, University of Wisconsin-Madison

The Nutrient and Pest Management and the Wisconsin Cropping Weed Science programs have recently updated the Wisconsin herbicide mode of action chart. This publication provides herbicide mode of action, group number, site of action, chemical family, active ingredient, and example trade names for herbicides currently registered in Wisconsin. The second page of the chart details registered herbicide combination products in Wisconsin including the trade name, active ingredients, trade name examples included in the premix, and site of action group.

With the widespread occurrence of herbicide-resistant weeds, it's important that farmers select effective herbicides from multiple sites of action. The intent of this publication is to help farmers understand the different sites of action and products registered in Wisconsin and assist with their herbicide selection.

More info on the Wisconsin Cropping Weed Science program can be found here: http://www.wiscweeds.info/

The Herbicide Mode of Action chart can be found here: http://ipcm.wisc.edu/download/pubsPM/Herbicide-Mode-of-Action.pdf

A Visual Guide to Winter Wheat Development and Growth Staging

Shawn Conley, State Soybean and Small Grains Specialist

Understanding the growth stages of cereals crops and how to identify them is key to successful cropping and pest management decisions. Although there are several growth staging methods, this guide is based on the Feekes scale, which is a popular tool used in the eld. It has eleven development stages with some stages having more detailed subdivisions.The Zadoks scale is the standard scale used in research and has ten development stages, each stage having ten subdivisions. Both scales are useful to know, so this guide cross-references the Zadoks equivalents to the Feekes.

This guide uses winter wheat as an example. However, the methods generally apply to other cereals as well and at the back of the guide are sections that showcase barley, oats, rye and triticale.

To read the full guide, click here.

Has April rain and snow caused loss of March N applications to winter wheat?

Carrie Laboski, Professor & Extension Soil Scientist

Recent Wisconsin research has indicated that applying N to winter wheat at green-up was generally more profitable than applications at Zadoks growth stage 30 (GS30, hollow stem – just prior to first node, approximately Feekes 5.5). See past article. Some grower's took advantage of the March weather and applied N, anticipating wheat to break dormancy in early April. Instead, we had several precipitation events, some as rain and others as snow (10 to 30 inches), along with extended period of time with temperatures significantly below average. Growers are now wondering, what does this mean for N loss?

The short answer is that N losses were probably low. The longer answer requires us to think about a few things. First, the temperatures were cool, no downright cold for April. Thus, we might expect lower urease activity, ammonia volatilization losses, and denitrification losses. Second, in most cases rainfall preceded the snow. This means that urea likely had time to dissolve and move into the soil. However, there may be cases where the ground was frozen and rainfall caused the dissolved urea to run off the field before it could move into the soil. Unfortunately, research data on N loss in runoff from precipitation in March/April in our climate is lacking. Some work with late fall applications of urea in Maryland demonstrated that loss of N in runoff was about 5% or less for the 4 weeks after application of urea in a rainfall simulation study. Third, depending on soil moisture conditions, N may have moved deeper into the soil profile and may be accessible to the crop as it's root system grows.

Unfortunately, we don't have a simple and accurate way to assess winter wheat N needs mid-season. We are currently evaluating crop sensing technology, but that is still a few years away. Past research in Wisconsin has demonstrated that winter wheat N needs in early spring could be assessed by measuring soil nitrate concentration in the top two feet of soil at green-up and crop N uptake at GS30, but was determined to be logistically infeasible and likely not cost effective.

The maximum return to N (MRTN) suggested N rates at various N:wheat price ratios in Table 1 can be compared to help growers decide if additional N fertilizer would be profitable. For example, if corn was the previous crop, 75 lb N/a was applied in March, and as much as 20% of the N was lost, that would mean 60 lb N/a would still remain in the soil. A 60 lb N/a rate is within the range of N rates that produce profitability near the MRTN for all N prices that are realistic this year.

To visit the blog, click here.

Healthy Grown Series of Videos

A new video series describing the high-bar, certified, nationally recognized "Healthy Grown" sustainable potato production program has been developed and published by the Nutrient and Pest Management Program. "Healthy Grown" has been thriving in advancing innovative, ecologically sound production systems and currently, around 8000 acres of fresh market potatoes are grown under stringent environmental protocols. "Healthy Grown" works to advance growers' use of biointensive IPM, reduce reliance on high-risk pesticides, and to enhance ecosystem conservation. The following series of videos describe the process and background of the development of "Healthy Grown", informs details on the standard, and describes the implementation and documentation of improvements for the program.

The series of videos can be linked here:

For background and historical "Healthy Grown" info: https://www.youtube.com/watch?v=3nUZt_We7mU

For information on the standard and its requirements: https://www.youtube.com/watch?v=5ClPyNIh3Sw

For details on the implementation and adoption of the high-bar principals: https://www.youtube.com/watch?v=gH4ysguhuJk

More details on the science and research background for the program can be found at: http://ipcm.wisc.edu/downloads/bioipm-workbooks/ and marketing and sales information can be found at: http://wisconsinpotatoes.com/healthy-grown/.

Contact Deana Knuteson (dknuteson@wisc.edu) for more details.

Soybean Management Strategies to Facilitate Timely Winter Wheat Establishment in 2018

Shawn Conley, State Soybean and Small Grains Specialist

Winter wheat acres across WI have declined over the past few years due to late grain harvests, disease concerns (FHB or scab) and poor wheat prices, however anyone that lives and works in WI knows that a base number of cereal acres are needed to support the dairy industry (straw and land to summer haul manure). As farmers get ready to kick off the 2018 growing season here are a few suggestions to help get your 2018/19 winter wheat crop established on time.

To read the full article, click here.

Soybean Planting Date and Maturity Group Considerations

Shawn Conley, State Soybean and Small Grains Specialist

Early May planting in Wisconsin has been documented to increase yield due to increased light interception (Gaspar and Conley, 2015). Earlier planting dates are able to increase light interception in two ways, which are both demonstrated in Figure 1. First, the reproductive growth period between R1-R6 occurs during longer days with the May 1st (Green line) compared to June 1st (Orange line) planting date. Secondly, the time spent in the R1-R6 growth stages is increased with the earlier planting date. As Figure one shows, the May 1st planting date spent ~60 days from R1-R6 compared ~45 days for the June 1stplanting date. Therefore, early plated soybeans experience both longer duration in reproductive growth (more days) and reproductive growth during the longest days of the summer.

To read the rest of this article, click here.

Wisconsin UWEX Vegetable Crop Update Issue 1, 2

Amanda Gevens, Associate Professor & Extension Specialist, Potato & Vegetable Pathology, UW-Madison Plant Pathology Department

Vegetable Crop Updates newsletter #1

In This Issue:

- Potato & vegetable disease forecasting primer
- Be on the lookout for hop downy mildew
- Horticultural updates and upcoming trials for 2018
- Potato Virus Y Detection Training Workshop Information

Vegetable Crop Updates newsletter #2

In This Issue:

- Note change in Rhinelander Field Day date and location
- National late blight updates
- WI Special Pesticide Registration updates for specialty crops
- Resources for crop management Horticultural updates

Wisconsin Fruit News- April 20, 2018

Janet van Zoeren and Christelle Guédot, UW-Extension

https://go.wisc.edu/78qyte

Welcome back! We're excited for this third season of the Wisconsin Fruit Newsletter.

Due to popular demand, items in the table of contents (on the left sidebar of the first page of the newsletter) are now are linked to the article, for easy referencing to the section of interest. We will continue to make minor adjustments like this, which will hopefully continue to improve your ease-of-access to the newsletter! Thanks for the feedback and for reading.

We hope you will continue to find useful information here and on our Wisconsin Fruit website (fruit.wisc.edu).

This week you can read about:

- NEWA weather stations update and applications
- Plant Disease Diagnostic Clinic update
- Insect pest forecast for 2018
- Summary of grape disease for the 2017 growing season
- Apple disease — what to expect after a cold winter and delayed spring

UW/UWEX Plant Disease Diagnostic Clinic (PDDC) Update April 1

Brian Hudelson, Sue Lueloff, John Lake 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 March 31, 2018 through April 1, 2018.

The 4/1/18 PDDC Wisconsin Disease Almanac (i.e., weekly disease summary) is now available at:

https://pddc.wisc.edu/wp-content/uploads/sites/39/2018/04/FullTable040618.pdf

UW/UWEX Plant Disease Diagnostic Clinic (PDDC) Update April 13

Brian Hudelson, Sue Lueloff, John Lake 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 April 1, 2018 through April 13, 2018.

The 4/13/18 PDDC Wisconsin Disease Almanac (i.e., weekly disease summary) is now available at:

https://pddc.wisc.edu/wp-content/uploads/sites/39/2018/04/FullTable041318.pdf

UW/UWEX Plant Disease Diagnostic Clinic (PDDC) Update April 20

Brian Hudelson, Sue Lueloff, John Lake 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 April 14, 2018 through April 20, 2018.

The 4/20/18 PDDC Wisconsin Disease Almanac (i.e., weekly disease summary) is now available at:

https://pddc.wisc.edu/wp-content/uploads/sites/39/2018/04/FullTable042018.pdf

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