As we approach fall and harvest fields that may have weed escapes, we should have a plan to limit the spread of weed seeds. Weeds seeds can easily be spread through harvest and tillage equipment. Taking the time to clean equipment before moving to the next field or bringing to the farm for the first time can be a worthwhile investment with many advantages. For example, a single common waterhemp can produce 250,000+ very small seeds that can easily be stored on equipment and redistributed in fall field operations. Regardless of the weed species, avoiding the spread of the weed seed is necessary to prevent future costly weed management problems. Avoiding very heavy weed infestations and consider harvesting or tilling these areas last, especially when herbicide resistant weed species are present.

Combine Cleaning

The combine operation manual should be reviewed prior to any cleaning produce. Always read, follow, and understand the manual and related safety instructions. Cleaning a combine will produce a lot of dust and debris and personal protective equipment should be used. A clean combine may also reduce the risk of a fire occurring during a busy harvest season.

Combine cleaning can be very time consuming, and a through cleaning should be done prior to storage or when combining a field of identity preserved grain. A quick field cleaning operation can be done with a leaf blower or an air compressor. Cleaning the head, feeder house, rock trip, threshing and separating unit, sump on the unloading augur, and grain tank will help reduce the chance of spreading weed seeds. Removing any residual debris on the outside of the combine, engine bay, and residue management system is also necessary. Investing 30 minutes in combine cleaning after harvesting a weedy field will reduce the chance of spreading problematic weed populations to other fields.
Tillage Equipment

Soil on tillage equipment may also contain weed seeds and should be removed before transport. Although time consuming, removing as much soil as possible from tillage equipment and equipment tires will lessen the chances of transporting weed seeds from field to field. Avoid weed seed movement to help control future costs of weed control and herbicide resistance management.

More information on herbicide resistance management:

More information on combine and tractor fires:
https://fyi.uwex.edu/agsafety/machinery/combine-and-tractor-fires-a-burning-problem/

More information on where grain hides in a combine:
https://www.extension.purdue.edu/extmedia/GQ/GQ-49-W.pdf

More information on combine clean-out procedures:
https://www.youtube.com/watch?v=BucJiIoT4

Harvest Considerations for Variable Soybean Maturity

Shawn P. Conley

Variable soil types, knolls, flooding and ponding, variable planting dates and late season drought have left many growers with extreme in-field variability of soybean maturity. There are areas in fields where the soybean seed is 13% or less moisture adjacent to areas with green seed. The prevailing question is “When should the grower harvest?” Obviously there is no simple answer, as each field is different. However here are a set of guidelines to consider:

1. The easiest answer is harvest the field at two different times. Take what is dry today and come back in two weeks and harvest the rest. The challenge with this approach is that today’s equipment is large and not easily moved from field to field. Furthermore many growers rent or own land over large areas where this is impractical and the whole field must be taken at once. So……

2. The next simple answer is wait until the whole field is ready to go. As noted in a past article entitled Drought Induced Shatter, we are seeing areas across the Midwest where shattering is occurring. The general rule of thumb is 4 seeds per square foot = one bushel yield loss. At local cash prices below $9.00 per bushel this is hard to see happen and not harvest. Furthermore, waiting will also lead to moisture loss in the field. As we learned the past few years, you do not get compensated for harvesting below 13% moisture. So……

3. If growers are concerned with shatter and/or other harvest losses the next logical approach is harvest ASAP. This opens a whole new can of worms. Harvesting ASAP will lead to a mixture of dry, wet, and immature (green) soybean seed. Be aware that if you harvest this mixture regardless of the ratio, your combine moisture sensor may not detect the correct moisture, be prepared for that initial shock when the elevator tests the grain. Next be prepared for the dockage. Most combines will leave more beans in the pod when they are wet or immature. These beans may end up on the ground or in the grain tank as unthreshed soybeans. Harvesting seed with this variability will be very similar to handling frosted soybean seed so discounts may occur due to moisture shrink, damage (green beans are considered damage), foreign material (this is usually higher when harvesting wet beans), test weight, and heating. If you choose on farm storage to address some of the dockage concerns please refer to Soybean Drying and Storage for questions.

4. The last consideration I would bring forward is that the mature areas are likely going to be the low yielding pockets due to drought whereas the yet to mature areas will likely be the higher yielding areas within the field. So, in short, which yield environment would you rather focus your time and efforts to protect?

The question ultimately comes down to the bottom line and where you make the most $$. If shatter is not occurring and you have good equipment that does not incur significant harvest loss, will harvesting grain that is over-dry make you more money than harvesting seed that may incur significant dockage? My guess is yes but you tell me!

Fall is Still a Good Time to Sample for SCN and Other Plant Parasitic Nematodes

Ann MacGuidwin, Damon Smith and Shawn P. Conley

The WI Soybean Marketing Board (WSMB) sponsors free nematode testing to help producers stay ahead of the most important nematode pest of soybean, the soybean
cyst nematode (SCN). Eggs of SCN persist in the soil between soybean crops so a sample can be submitted any time that is convenient. The soil test report indicates the number of eggs in the sample and is useful for selecting the right variety for the next soybean crop. Retests of fields planted with SCN-resistant varieties over multiple years shows how the nematode population is responding to variety resistance and provides an early warning should the nematode population adapt to host genetics.

In the spring of 2012, the WSMB expanded the nematode testing program to include other pest nematodes in addition to SCN. These nematodes are less damaging to soybean than SCN but can cause enough yield loss to warrant treatment. As is the case for SCN, there are no rescue treatments for nematodes so the primary purpose of this year’s soil test is to plan for next year’s crop. Soil samples collected in corn for nematode analysis have predictive value for explaining yield if they are collected before the corn V6 growth stage. Sampling early in the season will provide information about the risk potential for the current corn crop AND the next soybean crop.

The assays used to recover nematode pests other than SCN in soil require that the nematodes are alive. So, it is important to keep the samples moist and at least room temperature cool. Collecting a sample that includes multiple cores ensures that there will be plenty of root pieces to assay. It is not necessary to include live plants in the sample. The soil test report will indicate which pest nematodes are present and at what quantities and their damage potential to soybean and corn based on the numbers recovered.

For more information on SCN testing and management practices or to request a free soil sample test kits please contact: Jillene Fisch at (freescntest@mailplus.wisc.edu) or at 608-262-1390.

Remember the first step in fixing a nematode problem is to know if you have one! The WSMB sponsored nematode testing program provides you that opportunity.

**Weed Identification Series, Biennial Wormwood**

Mark Renz UW Madison Associate Professor and Extension Specialist, Chelsea Zegler UW Madison Associate Research Specialist

Biennial wormwood is not new to Wisconsin, as has been in the state over 100 years, but I have seen it spreading throughout Wisconsin for the past decade. It likes lighter soils that are heavily disturbed, but has become a large problem in agronomic fields in nearby states. While I haven’t seen it in any fields yet, I am sure it is present as many of our roadsides are lined with this species.

This plant has unique attributes as it has biennial and annual biotypes. Apparently the Midwest United States predominately have the annual biotype, so don’t let the name fool you. What is most concerning about this plant is that it doesn’t start to germinate until well into June and continues to germinate through July. Thus it is often not controlled by PRE herbicides, cultivation, and even some POST treatments. Also others have reported that poor control with many of our commonly used herbicides (e.g. ALS, PPO, HPPD).

As this species is clearly spreading the best option is to detect populations early and prevent them from establishing in fields. See this factsheet to learn about how to ID this “new weed” to Wisconsin.

For more information on this species, including biology and control click here:


---

**Food, Land & Water Conference**

Jim VandenBrook, Wisconsin Land+Water

Wisconsin Land+Water invites you to join us at the Food, Land and Water conference on October 16-17, 2017 at the Osthoff Resort in Elkhart Lake. If you care about the future of Wisconsin’s agriculture and the land and water resources we all depend on, you’ll want to be part of this. Be part of the conversation that takes Wisconsin forward in a positive way. The Food, Land and Water Conference
provides the platform for you to engage with folks involved in farming, conservation, academia, government, and elected office to chart the way forward. Wisconsin can have a vibrant farm economy and safe, clean water, and you can help set the agenda.

Participants will have the opportunity to:

Hear about a two year-long effort that poses a wide range of strategies to sustain agriculture and land and water resources in Wisconsin.

Help set long-range priorities facing surface water quality, groundwater quality, groundwater quantity, and the future of working lands.

Become a charter member of the Food, Land & Water Initiative to shape the long-term future of a sustainable Wisconsin.

Attendees will have a chance to listen, discuss, build new connections and working relationships, and think about our shared resources in a more systematic and collaborative way.

Check out the agenda reports from workgroups, and registration information at this site: Food, Land and Water. Be heard and be involved. Wisconsin needs you.

**Start Managing for Fusarium Head Blight Now**

By Shawn P. Conley and Damon Smith

Most WI winter wheat growers dodged the Fusarium head blight (FHB or scab) bullet again in 2017; though many farmers especially those in SW WI became so disgusted with dockage and rejections in both 2014 and 2015 they still didn’t plant a single acre this year. Therefore as we prepare to put the 2018 wheat crop into the ground here are a few considerations for managing FHB before we drop a single seed.

1. **Crop rotation matters.** Data from our long-term rotation studies indicate that wheat following soybean provides the greatest yields. The next best options are wheat following corn silage (6.5% less) then corn for grain (21% less). Wheat following alfalfa or another leguminous crop are also good options, though the N credits following alfalfa may best be served going to corn. Furthermore, background fungal pressure (residue on and in soil) from the FHB fungus will be greater following corn then soybean or another legume, however know that spores that infect your wheat crop can arrive from outside the field. Please click to see more information on the Top 8 Recommendations for Winter Wheat Establishment in 2017.

2. **Variety selection matters.** Data from our 2015 and 2016, and 2017 WI Winter Wheat Performance Test shows variable yield and disease performance among the varieties listed. Select those varieties that have both good to excellent FHB (2015) and Stripe Rust (2016 & 2017) resistance and high yield. When evaluating disease resistance, low numbers for both incidence and severity can be helpful, but the major focus should be placed on incidence (measure of the number of symptomatic plants in a stand).

3. **Application timing matters.** One of the biggest challenges year in and year out is improper fungicide application timing. Our data suggests that on susceptible (Hopewell) or moderately susceptible varieties (Kaskaskia) equal efficacy of the fungicide Prosaro at a rate of 6.5 fl oz/acre can be achieved when applied between Feekes 10.5.1 (anthesis) and 5 days after anthesis. Given the variability of head emergence and anthesis across a landscape it may prove best to wait a few days until the whole field is flowering than to apply too soon. If the extruded anthers have turned from yellow to white across the whole field then you are likely too late. Remember it roughly takes a wheat head 7 days to completely self-pollinate.

4. **Choose the right fungicide class.** Make sure you use the appropriate fungicide product and class to manage FHB. The label for products containing strobilurin active ingredients (FRAC group 11) ends prior to flowering. Late application can actually lead to increased mycotoxin levels. Triazole containing products (FRAC group 3) are recommended for FHB control. For a list of products and efficacy ratings, visit the Field Crops Fungicide Information Page.

5. **Harvest timing and flash drying.** The word on the street is that if FHB appears to be a problem in 2018 elevators will push growers to harvest early (18% moisture or higher) and subsequently dry grain to mitigate mycotoxin levels. While drying grain to 13% or less moisture is a good storage practice, know this process may kill the
Top 8 Recommendations for Winter Wheat Establishment in 2017

Shawn Conley, State Soybean and Small Grains Specialist
John Gaska, Outreach Specialist, Damon Smith, State Field Crops Pathology Specialist

Top 8 winter wheat establishment recommendations:

1. Variety selection: please see the 2017 WI Winter Wheat Performance Test
2. Plant new seed (DO NOT plant saved seed).
3. A fungicide seed treatment is recommended for winter wheat in WI, especially for seed damaged by Fusarium head blight (FHB)
4. Wheat should be planted 1 inch deep.
5. The target seeding rate for wheat planted from September 15th to October 1st is 1,300,000 to 1,750,000 seeds per acre.
6. The optimal seeding rate for wheat planted after October 1st should be incrementally increased as planting date is delayed to compensate for reduced fall tillering.
7. Crop rotation matters.
8. Plant between September 20 and October 5

To continue reading the full story with details, view this fact sheet:

Wisconsin Fruit News-Sept 15, 2017

Janet van Zoeren and Christelle Guédot, UW-Extension

http://go.wisc.edu/2971sb

We’re nearing the end of the 2017 summer season, and, with that, we’re winding down the newsletter for the year. We will publish one more issue this fall (October 6th). After that, we will sum up the season with a couple supplemental issues. We hope you enjoyed the newsletter this summer!

This week you can read about:

- Nearing the end of the 2017 season
- Plant Disease Diagnostic Clinic update
- Organic insecticides for spotted wing drosophila control
- Wine and table grape developmental stages
- Peach leaf curl and plum pockets
- Apple maturity index report

Cover Crop Field Days

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

Iowa County Uplands Watershed Field Tour

An upcoming field day on October 9th will provide an update to ongoing cover crop work on farms in the Iowa County Uplands producer-led watershed group. The field day will include cover crops used in dairy, grain, and produce systems. No-till establishment, interseeding, and manure management will be discussed. The field day will begin at 9 a.m. and conclude by 1:00 p.m. Lunch will be provided but registration is required. Click here for registration and additional information.

Cover Crop Interseeding Plot Tour

An upcoming plot tour on October 3rd at the Lancaster Agricultural Research Station will provide an update to cover crop interseeding work at the research station. The plot tour will an open house format and plots will be available from 10 a.m. to 12:00 p.m. The address of the research station is: 7396 WI 35 & 81 Lancaster, WI 53813. No advanced registration is required and the field day is free.
Wisconsin UWEX Vegetable Crop Updates, Issue 22, 23

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

These newsletter issues are now on the Plant Path website.

Newsletter No 22, September 10, 2017
- updates on tomato/potato late blight (with late season info for potato)
- updates on cucurbit downy mildew
- updates on Phytophthora crown and fruit rot on cucurbits/solanaceous crops

Newsletter No 23, September 17, 2017
- updates on late blight
- updates on cucurbit downy mildew
- for fields where our weather stations were located, DSVs are being calculated with our agricultural weather tool (link embedded in the newsletter) to continue to provide weather information that may be use in your end of season management decisions

Are fall applications of N to winter wheat beneficial?

Carrie Laboski, Professor and Extension Soil Fertility/Nutrient Management Specialist, UW-Madison

The short answer is maybe.

Research in 2014 through 2016 demonstrated that N application at green-up generally resulted in the greatest economic return compared to application at Zadok’s growth stage 30 (GS30, approx. Feekes 5). See past articles for details: https://npketc.soils.wisc.edu/2017/03/25/tips-for-nitrogen-management-in-winter-wheat/ and https://npketc.soils.wisc.edu/2016/03/09/time-your-spring-nitrogen-applications-to-maximize-winter-wheat-yield-2/. In this same study, we had a couple of fall N application treatments. We found that 120 lb N/a applied as SuperU at planting yielded the same as 120 lb N/a as ammonium nitrate applied at green-up at five of eight sites years (Table 1, located on following page). However, this rate was an over application of N at all five of these sites, so it’s not surprising that there wasn’t a yield differ-
Table 1. Effect of N application timing and source at selected N rates effected winter wheat yield in Eastern Wisconsin from 2014 to 2016.

<table>
<thead>
<tr>
<th>N Rate/Timing†</th>
<th>N Source‡</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Chilton</td>
<td>Lamar-line</td>
<td>Chilton</td>
</tr>
<tr>
<td>0 lb N/a</td>
<td></td>
<td>79</td>
<td>60</td>
<td>103</td>
</tr>
<tr>
<td>60 lb N/a</td>
<td>Fall</td>
<td>ESN</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Fall/GU</td>
<td>SuperU/AN</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>GU</td>
<td>AN</td>
<td>106 a §</td>
<td>93 a</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Urea</td>
<td>102 a</td>
<td>87 a</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SuperU</td>
<td>102 a</td>
<td>87 a</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ESN:Urea</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>120 lb N/a</td>
<td>Fall</td>
<td>SuperU</td>
<td>93 b</td>
<td>97</td>
</tr>
<tr>
<td></td>
<td>GU</td>
<td>AN</td>
<td>109 a</td>
<td>102</td>
</tr>
<tr>
<td></td>
<td>GS30</td>
<td>AN</td>
<td>92 b</td>
<td>93</td>
</tr>
</tbody>
</table>

† Fall, at planting; GU, spring green up; GS30, Zadok’s growth stage 30 (“Feekes 5”); Fall/GU, 30 lb N/a applied at SuperU in fall at planting plus 30 lb N/a applied as AN at GU.
‡ AN, ammonium nitrate; ESN:Urea, 50:50 blend of ESN and urea
§ For a given year, location, and N application rate, treatments with the same letter are not significantly different at the 90% confidence level.
¶ --, these treatments were not part of the study in 2014.