**Natto Soybean Production in Wisconsin**

Shawn Conley, State Soybean and Small Grains Specialist

Natto is a traditional Japanese food made from soybean fermented with a particular bacteria spp. Natto-type soybeans are usually less than 5.8 mm (no. 14.5 screen) in diameter and have a clear hilum and thin seed coat. Smaller beans are preferred, as the fermentation process is able to reach the center of the bean easier. Opportunities exist for Wisconsin growers to access markets for identify preserved soybean and thereby gain premiums in the market above the current commodity price (S. Sinner, personal communication, SB&B Foods, 2018). Natto soybean production is similar to conventional production, although seed size and quality issues are more important. The objectives of this study were:

- To evaluate the effect of soybean seeding rate coupled with fungicide and insecticide seed treatments on natto soybean stand establishment, growth, and seed yield
- To evaluate foliar fungicide use for disease control on several natto soybean varieties
- To evaluate various seeding rates on four varieties of food grade soybean for seed yield, growth characteristics and seed quality

To see the rest of this study, click here.

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**Understanding Buffer Requirements for Dicamba Applications in Xtend**

Rodrigo Werle (UW-Madison Extension Cropping Systems Weed Scientist)

On October 31, 2018 the United States Environmental Protection Agency (EPA) announced their decision to extend the registration of the dicamba products Engenia, Fexapan, and Xtendimax for use in dicamba-tolerant crops (Xtend technology) through December 20, 2020; however, additional label changes were made.

A particular change that has led to some questioning is the new 57-foot omnidirectional buffer requirement to protect federally listed threatened and endangered species and critical habitat in specific US counties. On November 19, 2018, EPA posted the list of US counties where threatened and endangered species and critical habitat may exist (thus locations where the new 57-foot buffer must be incorporated).

To read the rest of this article, click here.
**New Video: Worker Protection Standard Overview**

Glenn Nice, Pesticide Applicator Training Program Manager

Jane Larson of the Wisconsin Department of Agriculture, Trade and Consumer Protection provides an overview of the Worker Protection Standard (WPS) for farms, forests, nurseries and indoor plant production.

**Assessing the Influence of Row Spacing**

In a bean pod…

We developed an approach to evaluate the influence of row spacing on U.S. soybean yield using both producer and experimental data.

Experimental data showed a consistent yield advantage of narrow versus wide row spacing.

However, data from producer fields indicate no yield difference between narrow and wide rows.

This complementary approach can help evaluate yield increase derived from a management practice.

**Herbicide Resistance in Wisconsin: An Overview (December 2018)**

Joseph Zimbrick (UW-Madison Agronomy Graduate Student), David Stoltenberg (UW-Madison Agronomy Professor), Mark Renz (UW-Madison Extension Weed Scientist) and Rodrigo Werle (UW-Madison Extension Weed Scientist)

**20 Unique Cases of Herbicide Resistance in Wisconsin**

- 20 unique cases (weed species by herbicide site of action) of herbicide resistance have been confirmed in Wisconsin, including 13 weed species with evolved resistance to one or more herbicide sites of action (Figure 1, Table 1).
- The first confirmed case of herbicide resistance in Wisconsin was PSII inhibitor resistance in common lambsquarters in 1979.
- Since then, ALS-inhibitor resistance has been confirmed in more weed species than other type of herbicide resistance, totaling eight weed species including common ragweed, giant ragweed, Palmer amaranth, and waterhemp.
- In comparison, PSII inhibitor resistance has been confirmed in four species, whereas ACCCase inhibitor resistance has been confirmed in only two species (giant foxtail and large crabgrass).

- The first confirmed case of glyphosate (an EPSP synthase inhibitor) resistance in Wisconsin was a non-rapid response phenotype of giant ragweed in 2011 (Figure 2). Glyphosate resistance has subsequently been confirmed in horseweed, waterhemp, Palmer amaranth, and most recently, common ragweed in 2018.

To see the rest of this article, click here.

**2018 Wisconsin Corn Hybrid Performance Trials- Grain, Silage, Specialty, Organic**

Kent Kohn, Thierno Diallo, and Joe Lauer

Every year, the University of Wisconsin Extension-Madison and College of Agricultural and Life Sciences conduct a corn evaluation program. The purpose of this program is to provide unbiased performance comparisons of hybrid seed corn available in Wisconsin. These results are a “Consumer Report” for commercial corn hybrids. The trials evaluate grain, silage, and systems including...
organic, transgenic and refugia systems. A one bushel per acre increase by Wisconsin corn farmers increases farm income $8 to $32 million dollars.

PDF format (60 pages, 1.5mb) – http://corn.agronomy.wisc.edu/HT/2018/A3653.pdf


Publication layout and photo credit: Mimi Broeske, Nutrient and Pest Management Program, University of Wisconsin-Madison

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**UW/UWEX Plant Disease Diagnostic Clinic (PDDC) Update November 30**

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 November 24, 2018 through November 30, 2018.

The 11/30/18 PDDC Wisconsin Disease Almanac (i.e., weekly disease summary) is now available at:


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**Wisconsin Pest Bulletin, Issue No. 18, November 27**

Krista Hamilton, Entomologist, Bureau of Plant Industry/ Division of Agricultural Resource Management, Wisconsin Department of Agriculture, Trade and Consumer Protection

Volume 63 Issue No. 18 of the Wisconsin Pest Bulletin is now available at:


PLEASE NOTE: This final Wisconsin Pest Bulletin of 2018 provides a post-growing season summary of prevailing insect and plant disease conditions and related weather.

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Once again, our sincerest thanks to the many cooperators, farmers, county agents and consultants who contributed their time and valuable information to the survey program this year.

**INSIDE THIS ISSUE:**

**LOOKING AHEAD:** Fall European corn borer population decreases to 77-year low

**FORAGES & GRAINS:** Potato leafhopper counts remain below-threshold this season

**CORN:** Corn rootworm beetle survey finds historically low crw pressure again in 2018

**SOYBEAN:** Phytophthora root rot a common problem in soybean fields last spring

**FRUITS:** Brown marmorated stink bug spreading into western Wisconsin

**VEGETABLES:** Late blight less prevalent this year than in 2017

**NURSERY & FOREST:** New state record for boxwood blight in Wisconsin

**DEGREE DAYS:** Growing degree day accumulations as of November 14, 2018

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**2019 Wisconsin Agronomy Update Meetings**

The Department of Agronomy will offer Crop Production and Management Meetings at eight locations during January of 2019. Joe Lauer and Shawn Conley will present the latest information on hybrid/variety performance, an analysis and discussion of last year’s growing season, and updated recommendations for field crop production.

The registration fee includes a meal and materials. Please pre-register with the Host Agent. A “walk-in” fee will be charged to those who have not preregistered. Additional information packets will be available for $21.00 each.

Certified Crop Advisor CEU credits have been requested (3.0 hours in Crop Management). Below is a list of topics, meeting sites, dates and times. Please join us at meeting in your area.

We hope to see you there.
Announcing the
2019 Wisconsin Agronomy Update Meetings
University of Wisconsin – Madison
Department of Agronomy

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Packet Materials
2018 Wisconsin Corn Hybrid Performance Trials: Grain - Silage - Specialty - Organic (A3653)
2018 Wisconsin Soybean Variety Performance Trials (A3654)
2018 Wisconsin Winter Wheat Performance Trials (A3868)
2018 Wisconsin Oat and Barley Variety Performance Tests (A3874)
Extension publications
Agronomy Advice articles
Wisconsin Crop Improvement Association updates

Discussion Topics

Corn
- Corn hybrid grain response to banded (pop-up and starter) fertilizer at planting
- Biological nitrogen fixation of corn
- How does corn respond to “kitchen sink” grain management?

Soybeans and Small Grains
- 2018 soybean and small grains highlights and lowlights
- What we thought we knew about soybean but really didn’t! #fakenews
- Understanding small grains growth and development to better manage the crop

Forages
- Hybrid winter rye forage and grain trial results
- Corn silage:grain ratio changes over the last 20 years
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<table>
<thead>
<tr>
<th>Location, date and time</th>
<th>Address</th>
<th>Host Agent</th>
</tr>
</thead>
</table>
| **Janesville**  
Monday, Jan. 7 at 12:00 | Holiday Inn Express  
3100 Wellington Dr. | Nick Baker  
Rock Co. Extension Office  
51 S. Main St.  
Janesville, WI 53545-3978  
(608) 757-5696 nick.baker@ces.uwex.edu |
| **Madison**  
Tuesday, Jan. 8 at 7:30 am | Comfort Inn  
5025 County Hwy. V,  
De Forest, WI  
(Hwy V exit off of 90/94) | Heidi Johnson  
Dane Co. Extension Office  
5201 Fen Oak Drive, Rm. 138  
Madison, WI 53718  
http://fyi.uwex.edu/danecountyag  
(608) 224-3716 Heidi.johnson@ces.uwex.edu |
| **Fond du Lac**  
Tuesday, Jan. 8 at 12:00 | UW Fond du Lac  
Rm. 114 University Center  
400 University Drive | Tina Kohlman  
Fond du Lac Co. Extension Office  
400 University Drive  
Fond du Lac, WI 54935-2998  
(920) 929-3171 tina.kohlman@ces.uwex.edu |
| **Kimberly**  
Wednesday, Jan. 9 at 7:30 am | Liberty Hall  
800 Eisenhower Drive  
(Hwy. 441, College Avenue  
Exit, East 1 block) | Kevin Jarek  
Outagamie County  
3365 W Brewster St.  
Appleton, WI 54914  
(920) 832-5121 kevin.jarek@ces.uwex.edu |
| **Wausau**  
Wednesday, Jan. 9 at 12:00 | Marathon County UWEX  
Office, Room 5  
212 River Drive | Heather Schlesser  
Marathon County UW-Extension Office  
212 River Drive  
Wausau, WI 54403  
(715) 261-1230 heather.schlesser@ces.uwex.edu |
| **Eau Claire**  
Thursday, Jan. 10 at 7:30 am | Green Mill Conference &  
Banquet Facilities  
(Campus area)  
2703 Craig Road | Mark Hagedorn  
Eau Claire Co. Extension Office  
227 1st Street West  
Altoona, WI 54720-1601  
(715) 839-4712 mark.hagedorn@ces.uwex.edu |
| **Sparta**  
Thursday, Jan. 10 at 12:00 | Jakes Northwoods  
Hwy 21 (NE side of town)  
1132 Angelo Rd. | Bill Halfman  
Monroe County - UW Extension  
14345 County Highway B, Room 1  
Sparta, WI 54656-0309  
(608) 269-8722 bill.halfman@ces.uwex.edu |
| **Belmont**  
Friday, Jan. 11 at 12:00 | Belmont Inn & Suites  
Convention Center103 W  
Mound View Ave.  
(North of Hwy 151 at  
Belmont) | Gene Schriefer  
Lafayette County – UW Extension Agriculture Center  
627 Washington Street  
Darlington, WI 53530-1396  
(608) 776-4820 gene.schriefer@ces.uwex.edu |

**Wisconsin Agribusiness Classic**  
January 15-17, 2019  
Alliant Energy Center, Madison

**Midwest Forage Association**  
**Forage Production and Use Symposium**  
February 18-20, 2019  
Chula Vista, Wisconsin Dells

**Wisconsin Corn Growers Association**  
**CORN / SOY EXPO**  
January 31-February 1, 2019  
Kalahari Resort, Wisconsin Dells
Herbicide Resistance in Wisconsin: An Overview
Joseph Zimbric, David Stoltenberg, Mark Renz, and Rodrigo Werle
Department of Agronomy, University of Wisconsin-Madison

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- Palmer amaranth was first identified in Wisconsin in 2011. Since then, 12 populations have been found among nine counties (Figure 5).

- Herbicide resistance in Palmer amaranth has been limited to two cases of confirmed glyphosate resistance and one case of confirmed multiple resistance to ALS inhibitors and the HPPD inhibitor tembotrione (Figure 5).

- Waterhemp presence has increased rapidly in Wisconsin to include over 400 locations in 61 of 72 counties in the state (Figure 3).

- In recent years, glyphosate resistance concerns have focused on waterhemp which has also increased rapidly to include confirmed cases in 28 counties (Figure 4). Among these, multiple resistance to glyphosate and PPO inhibitors has been confirmed in 10 counties.

- It is critical that diversified management tactics be implemented to reduce the spread, persistence, and impact of these and other herbicide-resistant species.

Table 1. Unique cases of herbicide resistance in Wisconsin.

<table>
<thead>
<tr>
<th>Herbicide group</th>
<th>Herbicide site of action</th>
<th>Weed species</th>
<th>Year confirmed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ACCase inhibitors (acetolactate synthase)</td>
<td>Giant foxtail, Large crabgrass</td>
<td>1991, 1992</td>
</tr>
<tr>
<td>14</td>
<td>PPO inhibitors (protoporphyrinogen oxidase)</td>
<td>Waterhemp</td>
<td>2016</td>
</tr>
<tr>
<td>27</td>
<td>HPPD inhibitors (hydroxyphenyl-pyruvate dioxygenase)</td>
<td>Palmer amaranth‡</td>
<td>2014</td>
</tr>
</tbody>
</table>

†Multiple resistance to ALS inhibitors and HPPD inhibitors.
‡Multiple resistance to EPSP synthase inhibitors and PPO inhibitors in some populations.