

Wisconsin Crop Manager

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Final Announcement for the 2014 Wisconsin Corn Conferences

Joe Lauer, Corn Agronomist

Announcing the 2014 Corn Conference meeting series sponsored by UWEX and the Wisconsin Corn Growers Association. We invite you to be a part of these conferences.

We have a limited mailing list of contacts from previous meetings, but really depend on local agents for the most effective publicity. Please inform farmers from your county or area, and encourage them to attend. Please do not expect the host agent to promote this event in your county. Three hours of Certified Crop Advisor CEU credits in crop production were requested for each session.

There is a \$5.00 registration fee per participant. The information packet will contain 2014 corn hybrid trial results, plus numerous production related reference materials. Additional copies of the packet will be available for purchase at the meeting.

Below is a list of topics, meeting sites, dates and times. Join us at a meeting in your area.

January 28 – Oshkosh – La Sure's Banquet Hall

January 29 – Viroqua – VFW POST 3032

January 30 – Poynette – The Barn at Harvest Moon Pond

2014 Wisconsin Corn Conference Program

9:30 am Registration
Coffee, milk, rolls in Exhibit Area

10:00 am Welcome
Opening remarks by Host Agent

10:10 am
2014 Corn Production and Management Keys to High Yields and Profitability
Dr. Joe Lauer – UWEX Corn Agronomist

11:00 am
What is Ahead for Wisconsin Corn?
How Our Association Helps Producers

UW-River Falls Field Scout Training Class

Bryan Jensen, IPM Program

The University of Wisconsin-River Falls, UW-Extension and the Integrated Pest Management Program are co-sponsoring the IPM Field Scout Training Class which will be held March 19-20 on the UW-River Falls campus. This training session will provide classroom and laboratory instruction for several pest and nutrient management topics (pest identification, life cycle, damage symptoms, economic thresholds and scouting techniques for insects, weeds, plant pathogens, herbicide injury and nutrient deficiency symptoms for corn, alfalfa, soybean and wheat, soil sampling, plant tissue testing, etc). Click [here](#) for the complete schedule. CEU's will be applied for.

Non-student registration fee is \$100/person and covers the cost of the training and the Field Crop Scout Training Manual. To register online please go to: <https://www.patstore.wisc.edu/ipm/register.asp>

To register by check, send name, phone number, address and/or email address and a check payable to UW-Extension to:

Mr. Bob Oleson – WCGA/WCPB Executive Director and
WCGA/WCPB Directors

11:30 am

What is New in Seeds and Ag Products for 2014?
Industry Co-sponsor Representatives

12:00 pm LUNCH

Exhibits open

1:00 pm

Nutrient Use Efficiency: A Key to Profitability
Dr. Carrie Laboski – UWEX Soil Scientist
Mr. John Peters – UWEX Soil Scientist

1:50 pm

Grain marketing outlook and strategies for 2014
Dr. Brenda Boetel – UW River Falls Ag Economist

2:40 pm

Tips for Successful Corn Production and Profitability

Oshkosh: Comparing Continuous Corn to Crop Rotation
Nick Schneider, Winnebago County Agent

Viroqua: Land Rent Negotiations
Tim Rehbein, Vernon County Agent

Poynette: Land Rent – What should I pay?
George Koepp, Columbia County Agent

3:30 pm

Conference Adjourns

Support for the 2014 Wisconsin Corn Conferences provided
by:

The Climate Corporation
Dairyland Seed Company
Partners in Production
Legacy Seeds
First Capital Ag
AgriGold
Mycogen Seed
Dupont Pioneer Hi-Bred
Syngenta
Contree Sprayer and Equipment Company
Asgrow/Dekalb (Monsanto)
Wisconsin Corn Growers Association
Wisconsin Corn Promotion Board

To view the brochure for this event follow the link below or
scroll down to the bottom of this newsletter.

<http://ipcm.wisc.edu/download/misc/CC2014Brochure%28%29.pdf>

Thanks for your help. If you have any questions, please contact
me.

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For season updates subscribe at

<http://corn.agronomy.wisc.edu/Web/Subscribe.htm>

Twitter: [@WiscCorn](https://twitter.com/WiscCorn)

Blog: WiscCorn.blogspot.com

Google+: [WiscCorn](https://plus.google.com/+WiscCorn)

All 2013 Crop Manager articles compiled in one PDF

The complete 2013 Wisconsin Crop Manager Volume 20 is now available on our website as a single PDF. The first five pages are a Table of Contents listing every article and the page number it can be found on.

To view or download all the articles from the 2013 Wisconsin Crop Manager in one PDF file, complete with a table of contents, click on the link below.

<http://ipcm.wisc.edu/download/wcm-pdf/WCMAnnual/WCM-2013-volume-20-with-TOC.pdf>

Moses Organic Farming Conference and Organic University to Offer Continuing Education Units (CEU) for Certified Crop Advisors (CCA)

Kevin Shelley, UW NPM Program

Professionals certified through the American Society of Agronomy as Certified Crop Advisors (CCA) working in organic crop production, and those professionals interested exploring approaches to organic production, can obtain continuing education units (CEU's) at this year's **MOSES Organic Farming Conference**. The conference, conducted by the Wisconsin-based Midwest Organic and Sustainable Education Service (MOSES), will be held **February 28-March 1, 2014 at the La Crosse Center in La Crosse, WI**. There is also a pre-conference **Organic University, February 27**, which offers intensive day-long sessions on specific topics in organic agriculture. A total of **83.5 CEU's have been applied for** in the areas of Crop Management (48.5), Pest Management (16), Soil and Water (9), Nutrient Management (5.5), and Professional Development (4.5).

The conference is billed as the foremost educational and networking event in the organic farming community in the United States. In past years, more than 3200 people have attended from over 41 states and 8 countries. This year marks the 25th anniversary. The conference includes 65 workshops designed to help beginning, transitional, and experienced organic farmers. There is also an organic research forum where researchers from universities and other institutions will present results from current and ongoing studies in organic crop and livestock production. Finally, there is a trade show featuring over 170 exhibitors from resource groups, certification agencies, buyers, processors, cooperatives and suppliers in the organic industry.

For more information on the MOSES Organic Farming Conference and the Organic University, see the MOSES website at <http://mosesorganic.org/conference/>. Or, contact

The Cold Temperatures and Alfalfa

Dr. Dan Undersander, Forage Agronomist

Concern always arises in cold periods over winter about the effect of the low temperatures on alfalfa winter survival. This of concern because certainly the alfalfa plant will die if exposed to cold enough temperatures.

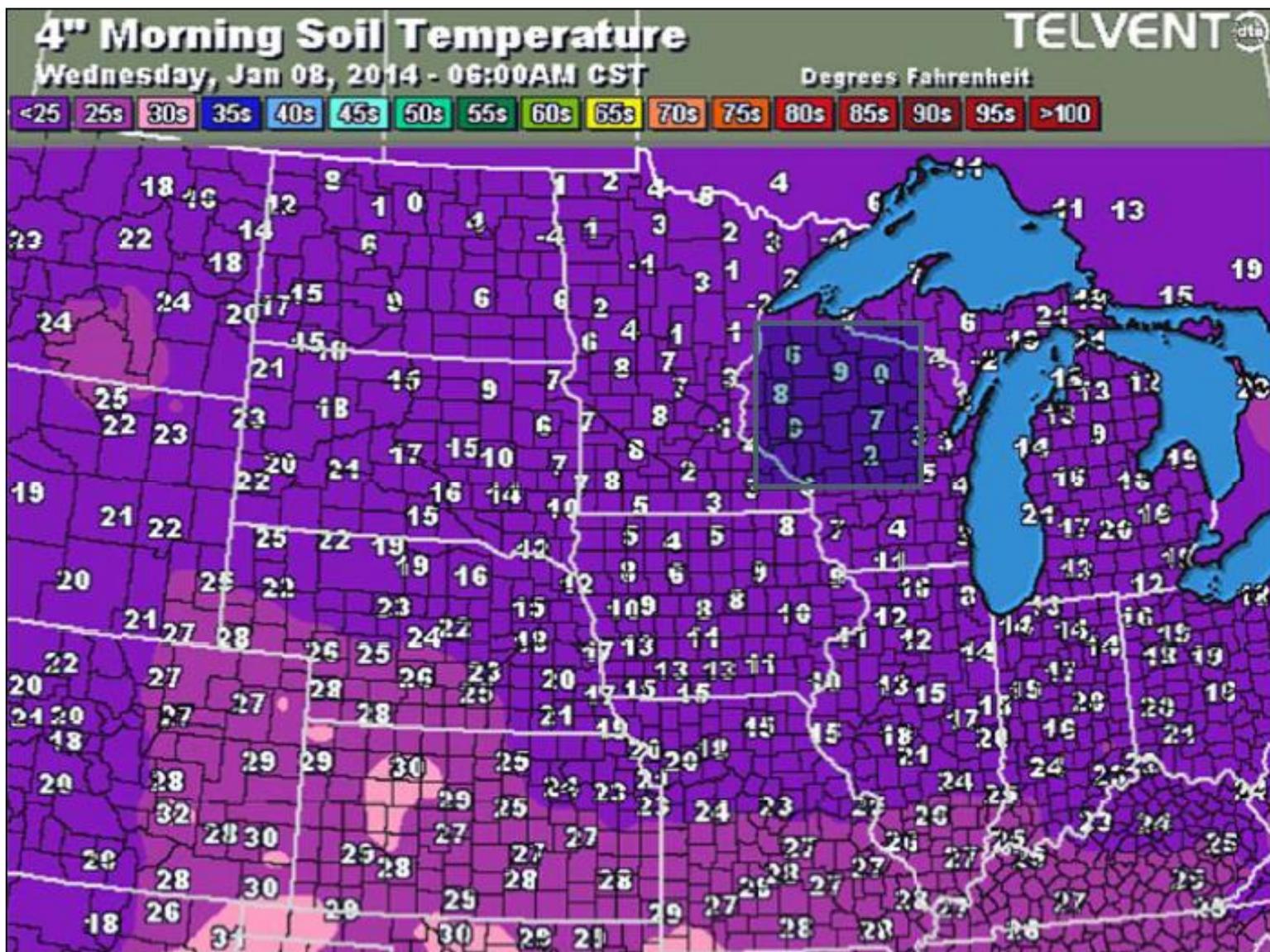
However, generally alfalfa survives the winter and its periodic cold spells. The reasons are:

1. Alfalfa can survive temperatures of 10 to 15°F.
2. This is the temperature of the crown not the topgrowth.

3. As little as 4 inches of loose snow will insulate against up to 16°F of air temperature.
4. The crown is insulated by soil as well; therefore the crucial temperature is the temperature at 2 to 4 inches below the soil surface.

As the map shows, the soil temperature of bare ground at 4 inches on Jan 8 (after the last cold spell) is generally in the single digits above 0°F for the Midwest. The higher temperature than the air the last few days is due to the insulating ability of the soil. However, soil temperature at 2 to 4 inches under the 4 or more inches of snow is generally 28 to 30°F; well above the temperature likely to cause injury to alfalfa.

This situation should indicate little to no injury or kill of alfalfa from the recent cold spell.



Economic Risk and Profitability of Soybean Seed Treatments at Reduced Seeding Rate

Adam P Gaspar, Shawn P Conley and John Gaska, Department of Agronomy and Paul Mitchell, Department of Agricultural and Applied Economics, University of Wisconsin Madison

Introduction

Earlier soybean planting coupled with increasing seed costs and higher commodity prices have led to a surge in the number of acres planted with seed treatments (Esker and Conley, 2012). Furthermore, the components and relative cost of various soybean seed treatments has broadened greatly. Recent studies have suggested that growers should consider lowering seeding rates to increase their return on investment (DeBruin and Pedersen, 2008; Epler and Staggenborg, 2008). This recommendation is attributed to the soybean plant's potential compensatory ability at lower plant populations. Ultimately, growers would like to know the value proposition of combining seed treatments with lowered seeding rates. Therefore, the objectives of this study were to:

- Quantify the effects of seed treatments and seeding rates on soybean yield.
- Assess the economic risk and profitability of seed treatments and seeding rates, including calculating economically optimal seeding rate (EOSR) for each seed treatment.

ApronMaxx RFC and CruiserMaxx (Syngenta Crop Protection) seed treatments were used to achieve these objectives because they differ in their components and relative cost per unit. This study was conducted in 2012 and 2013 at nine Wisconsin locations. All locations were planted in 15 inch rows within the first 3 weeks of May.

To read the full PDF article follow the link below:

http://www.coolbean.info/library/documents/SoybeanTreatmentRisk_2014_FINAL.pdf

Palmer amaranth identified through the late-season weed escape survey

Vince Davis (Assistant Professor) Department of Agronomy, UW-Madison; Ross Recker (Graduate Research Assistant)

Palmer amaranth (*Amaranthus palmeri*) is a dioecious, summer annual broadleaf weed species in the pigweed (Amaranthaceae) family that is extremely adaptable to environments, including the development of herbicide resistance, and it is extremely competitive with row crops. Palmer amaranth has been tormenting cotton and soybean producers in the southeast United States for the past decade, and more recently Palmer amaranth has been moving its way north into states such as Iowa^{2,3}, Illinois⁴, Indiana⁵, and Michigan^{6,7,8}. This northward movement of Palmer amaranth is alarming, and the movement has often been attributed to spreading contaminated manure from animal production operations that have fed cottonseed feed by-products transported from Southern U.S. production fields, as well as

equipment movement, and contaminated seed for Prairie restorations.

Palmer amaranth is not native to Wisconsin. A population was identified in Dane County, WI through the 2013 late-season weed escape survey efforts partially funded by the Wisconsin Corn Promotion Board. During this survey in fall 2013, five plants were distantly distributed in a large soybean field. Four of those plants were male plants (Figure 1), and luckily only one plant was a female plant was present and produced minimal seed in comparison to the seed production they can potentially produce (Figure 2).



Figure 1. Male Palmer amaranth plant from Dane County, WI



Figure 2. Female Palmer amaranth plant from Dane County, WI

Plant tissue from all five plants was sent to the Dr. Pat Tranel at the University of Illinois. Dr. Tranel's lab conducted molecular techniques to confirm that these plants were in fact Palmer amaranth as well as quantify the number of copies of the EPSPS gene. All five plants were confirmed as Palmer amaranth, and subsequently they produced EPSPS gene amplification ranging from 3-fold to >20-fold. EPSPS gene amplification within those ranges has previously demonstrated to be an effective mechanism for evolved glyphosate resistance in Palmer amaranth⁹. Whole-plant dose response experiments will be conducted to further confirm if this plant population is in fact resistant to glyphosate, but the molecular findings are at this point a strong indication that it is likely resistant. The origin of how this population established in Dane county, like many others, is difficult to pinpoint, but these plants were found in a field with a history of dairy manure application.

Because this is so far only one confirmed location of questionably resistant Palmer amaranth with minimal plants at this location, this does not necessarily represent a wide-spread catastrophe. However, this does provide further indication that the threat of herbicide-resistant pigweeds in Wisconsin crop production is real. The best approach is to be aware of this threat and implement a robust Integrated Pest Management approach, if you're not already doing so. This approach should start with intently scouting fields and identifying weeds this spring prior to preplant control. Utilize diverse preplant control methods to ensure starting with a clean field at planting, but make sure scouting and proper identification is done prior to postemergence herbicide applications. Consider interrow cultivation and tank-mix herbicides that provide a second effective mode-of-action for key weed species that need controlled in-crop. Most importantly, intently scout following postemergence applications to look for weeds that were not controlled. Those are the weeds that pose the biggest threat to building a population with herbicide resistance. If any of these scouting trips indicates a pigweed species is one of the main target weeds, then make certain you know what type of pigweed species it is. Redroot pigweed, smooth pigweed, Powell amaranth, and waterhemp are all common pigweed species, however, waterhemp poses the greatest risk of herbicide resistance from that list. As already mentioned Palmer amaranth is not a native, or common, pigweed species, but it poses a significant risk. If Palmer amaranth is identified, then its presence should invoke a "zero tolerance" mindset with eradication as the goal where feasible.

Characteristics of Palmer amaranth include rapid growth rate, high seed production, high degree of genetic diversity, high water use efficiency, and rapid development of herbicide resistance. Palmer amaranth competition with crops has demonstrated yield losses as high as 78% (soybean) and 91% (corn)^{10,11}. Therefore, Palmer amaranth should be of high concern for producers across the state. Below are links to help with the identification and management of Palmer amaranth. Key identification points are: the stems lack hair (like waterhemp, but different than Powell amaranth, redroot pigweed, and smooth pigweed), petioles are often longer than the leaf blade (Figure 3), a long terminal seed head, and seed heads of female plants are very prickly and painful to grab with a bare hand.



Figure 3. Comparison of Palmer amaranth petiole length to leaf blade length

Because this weed has caused such a problem in our surrounding states over the recent couple of years, there are many helpful extension articles we have referenced in this article. Specifically, here are some helpful guides for identification:

- Identification of the weedy pigweeds and waterhemp of Iowa. D.B. Pratt, M.D.K. Owen, L.G. Clark, and A. Gardner. 1999. Available at: [Iowa State University Extension](#)
- Guidelines for the identification and management of Palmer Amaranth in Illinois Agronomic Crops. A. Hager; available at: [University of Illinois IPM Bulletin](#)
- Palmer amaranth biology, identification, and management. T. Legleiter and B. Johnson. Available at: [Purdue University Extension](#)
- Identifying Palmer amaranth in the field — Video. B. Johnson and T. Legleiter. [YouTube video](#)
- Palmer amaranth in Michigan, Keys to Identification. C. Sprague, C. Michigan State University Weed Science. Available at: [Michigan State University](#)

If you or your crop scout has utilized the identification guides and believe you have Palmer amaranth escapes in your fields, please contact your local county extension agent and/or Dr. Vince Davis (vmdavis@wisc.edu) or (608) 262-1392.

References:

1. Ward, S.M., T. M. Webster, L. E. Steckel. 2013. Palmer Amaranth (*Amaranthus palmeri*): A review. Weed Tech. 27:12-27.
2. Hartzler, B. and M. Owen. 2013. Troublesome Palmer amaranth expanding its range. Iowa State University, Integrated Crop Management News: [article is available here](#)

3. Hartzler, B. 2013. Palmer amaranth update. Iowa State University, Integrated Crop Management News: [article is available here](#)
4. Hager, A. 2013. Update on Palmer amaranth distribution in Illinois. University of Illinois, The Bulletin: [article is available here](#)
5. Johnson, B. and T. Legleiter. 2013. Palmer amaranth confirmed in 17 Indiana counties. Purdue Agriculture News. Available at: [Purdue University](#)
6. Sprague, C. 2012. Palmer amaranth found in more Michigan fields: Now is a good time to scout. Michigan State University Extension News. Available at: [Michigan State University](#)
7. Sprague, C. 2013. Palmer amaranth: Why this weed should alarm you. Michigan State University Extension News. Available at: http://msue.anr.msu.edu/news/palmer_amaranth_why_this_pigweed_should_alarm_you
8. Sprague, C. Palmer amaranth: A new invasive weed to watch for in Michigan. Available at: <http://www.michigansoybean.org/Media/MichiganSoybean/Downloads/MSPC/Palmer-Amaranth/Palmer-Amaranth-A-New-Invasive-Weed-To-Watch-For-In-MI.pdf>
9. Gaines, T.A., W. Zhang, D. Wang, B. Bukun, S.T. Chisholm, D.L. Shaner, S.J. Nissen, W.L. Patzoldt, P.J. Tranel, A.S. Culpepper, T.L. Grey, T.M. Webster, W.K. Vencill, R.D. Sammons, J. Jiang, C. Preston, J.E. Leach, and P. Westra. 2010. Gene amplification confers glyphosate resistance in *Amaranthus palmeri*. PNAS 107:1029-1034.
10. Bensch, C.N., M.J. Horak, and D. Peterson. 2003. Inference of redroot pigweed (*Amaranthus retroflexus*), Palmer amaranth (*A. palmeri*), and common waterhemp (*A. rudis*) in soybean. Weed Sci. 51:37-43.
11. Massinga, R.A., R.S. Currie, M.J. Horak, and J. Boyer. 2001. Interference of Palmer amaranth in corn. Weed Sci. 49:202-208

Corn, Gibberella Ear Rot, *Fusarium graminearum*, Vernon
 Corn, Gibberella Stalk Rot, *Fusarium graminearum*, Vernon
 Corn, Penicillium Rot, *Penicillium* sp., Vernon

VEGETABLES,

Garlic, Fusarium Basal Rot, *Fusarium* sp., Dane
 Garlic, Waxy Breakdown, None, Dane

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 December 21, 2013 through December 27, 2013.

Plant/Sample Type, Disease/Disorder, Pathogen, County
SOIL,

Alfalfa Soil, Aphanomyces Seedling Blight, *Aphanomyces euteiches* race 2, Iowa

Soybean Soil, Soybean Cyst Nematode, *Heterodera glycines*, Brown, Columbia, Jefferson, Marquette, Outagamie, Ozaukee, Pierce, Racine, Sheboygan, St. Croix, Walworth, Washington

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 January 1, 2014 through January 3, 2014.

Plant/Sample Type, Disease/Disorder, Pathogen, County
VEGETABLES,

Garlic, Fusarium Clove Rot, *Fusarium* spp., Dane

SOIL,

Soybean Soil, Soybean Cyst Nematode, *Heterodera glycines*, Columbia, Eau Claire, Outagamie, Sheboygan

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

UW-Extension/Madison Plant Disease Diagnostic Clinic (PDDC) Updates

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 November 30, 2013 through December 6, 2013.

Plant/Sample Type, Disease/Disorder, Pathogen, County

FIELD CROPS,

Corn, Cladosporium Rot, *Cladosporium* sp., Vernon
 Corn, Fusarium Ear Rot, *Fusarium* sp., Vernon

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