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**Department of Agriculture and Life Sciences**  
**Tenured Faculty Review – April 14, 2014**

**I. Major Programs:**

**UW-Extension Responds – Drought 2012**  
**Farmer To Farmer Website Links Buyers and Sellers**

Situation:

In 2012 areas of Southern Wisconsin saw one of the worst droughts in recent decades. While Southern areas of the State were extremely dry, Northern areas of the State received relatively good rainfall. The need was identified to help facilitate the marketing of hay and other forages from the more northern areas of the State to other areas of the State that were experiencing forage shortages as a result of the drought.

Response:

While the **Farmer to Farmer Website** has been in place for a number of years, there was a renewed commitment on the part of this agent (Mike Ballweg), the ARNE program area (John Shutske), and governmental agencies (DATCP, Ben Brancel), to utilize the website to help alleviate forage shortages. The Farmer to Farmer Website allows Wisconsin Farmers to get in touch with one another for the purpose of buying and/or selling: hay, haylage, corn silage, high moisture corn, straw and other forages. The Farmer to Farmer website is free of charge for both buyers and sellers. Buyers can locate feed for their livestock while sellers are able to find markets for forages.

Outcomes:

- Nearly 200 listings were made in 2012. Increased website activity was connected to the Governor's publicity surrounding the Farmer to Farmer Website (Network) and increased promotion by UW-Extension.
- Listings for sale represented about 30,000 tons of hay and 4,000 tons of straw in 2012.

Evidence: Wisconsin Ag Connection News Release- 12/10/2012

An online network that connects farmers who were less affected by this year's dry conditions with others who were severely impacted by drought has yielded some success stories. According to Governor Scott Walker's office, Wisconsin's Farmer-to-Farmer Network had more than 185 listings made over the course of the year.

"Raising awareness of the Farmer-to-Farmer network helped provide dairy farmers with the feed necessary to continue farming and avoid making the difficult decision to downsize their operation or exit the business," said Governor Walker. "Without this network, this drought could have negatively impacted Wisconsin's agricultural production for years to come."

At least 75 listings have been removed because the farmers bought or sold the majority of their listing. An estimated 10,000 tons of products was bought or sold on the network. Hay, straw, standing forages, corn silage, sorghum, Sudan grass, rye, and oats were exchanged on the Farmer-to-Farmer network. There are currently more than 100 listings of feed for sale.

State Agriculture Secretary Ben Brancel says his office has heard many stories about farmers helping each other out through the website.

"Farmers who bought hay or feed through the network exchange spread the word to other farmers so they could set up their own purchases," Brancel said.

Several inquiries were made, including Cornell Cooperative Extension, in how the Farmer to Farmer website approach might be utilized in their states or regions.

Up to 130 farmers have utilized the Farmer to Farmer website on an annual basis to help market or purchase livestock feeds.

User comments in recent years have included:

- ♦ Thanks to the listing, I have had a good response and have found hay.
- ♦ We were very pleased with the ease and would list again next year if available and we have extra hay.
- ♦ He sold his corn to Tidy View Dairy and this website got them together to make a deal on the corn. Both parties very happy.
- ♦ It has worked well; the purchases my clients needed have been made. Thanks for the service.
- ♦ I have had more than enough calls now so I no longer need the listings. Thanks for your help and for your work with the website. It was a good idea and it was very helpful.
- ♦ Sold within 2 hours of listing.

## **Grain Crops**

### **Cover Crop Research Needed**

#### Situation:

While there is an abundance of anecdotal information regarding the benefits of cover crops, there has been little University of Wisconsin research to quantify: soil health, nutrient scavenging, nutrient recycling, erosion control and water quality benefits, as well as crop production benefits for using cover crops in Wisconsin's cropping systems.

#### Response:

In an effort to provide research generated information regarding cover crops, on-farm strip plots and small plot research was established in Sheboygan and Washington Counties. The initial work has focused on Tillage Radish™ to evaluate the plant's ability to scavenge nutrients and supply those nutrients to the following year's crop. The research was also designed to evaluate if radish might replace the need for tillage in Eastern Wisconsin. A Team of UW-Extension county, regional and state faculty/staff came together to design and implement a research project addressing those questions regarding the use of cover crops. Team members included: Mike Ballweg, Matt Ruark, Richard Proost, and graduate student, Megan Chawner. The team initiated the study in the fall of 2011, establishing a cover crop of Tillage Radish.™ Two years of data have been collected thus far, with a final year of this 3 year study concluding in 2014.

A new cover crop research project was initiated in the fall of 2013 to study Berseem, Crimson and Oats as cover crops. Research is designed to help answer questions around nitrogen production from legumes, the rotational benefits of adding a cover crop, and forage benefits for harvesting and/or grazing.

An additional cover crops research project is planned for 2014 to evaluate the use of various cover

crops after corn silage with the goals of reducing soil loss and recycling plant nutrients.

Outcomes:

Preliminary research results have been presented at:

- 2012 Soil, Water and Nutrient Management Meetings
- 2013 Soil, Water and Nutrient Management Meetings
- 2014 Wisconsin Crop Management Conference
- Cover Crop Tours for cooperating farmers and Land & Water Conservation staffs from Sheboygan, Ozaukee, Washington and Manitowoc Counties.
- Area Cover Crop Users' Group meetings

Papers and/or Power Point presentations were developed for above mentioned conferences and educational programs.

### **Corn Foliar Fungicides**

Situation:

Increasing corn acreage and rising commodity prices has generated considerable interest in the use of foliar fungicides as a means of enhancing corn grain yields. Because insufficient data existed in Wisconsin regarding the use of foliar fungicides on corn, faculty/staff at UW- Extension and the UW- College of Agricultural and Life Sciences initiated a coordinated effort to generate corn foliar fungicide data from replicated on-farm strip and small plot trials.

Response:

On-farm strip and small plot replicated trials were conducted from 2007 - 2011 to determine if corn foliar fungicides could significantly and economically increase corn yields. UWEX faculty/staff contributing to this effort included: Paul Esker, Mike Ballweg, Greg Blonde, Bob Cropp, Joe Bollman, Jerry Clark, Carl Duley, Dave Fischer, Matt Hanson, Carla Hargrave, Bill Halfman, Steve Huntzicker, Nick Schneider, Jon Zander, Bryan Jensen.

Outcomes:

Data analysis from 2007 and 2008 indicated that there was no evidence that the mean yields were different from one another in 2007 and 2008 ( $P = 0.1058$ ). Yields were estimated based on the statistical model and were 183.8 (Headline), 184.5 (Quilt), and 180.4 (Untreated check). While there is a trend for higher yields when Headline and Quilt were applied, compared with the untreated check, the difference in these yields (3.4 and 4.1 bushels, respectively) may not justify the application of a foliar fungicide economically.

When the 5 years of foliar fungicide trials (2007 -2011) were analyzed across years and locations, no statistically significant yield benefit was found as the result of using foliar fungicides. While there were higher levels of stalk lodging observed in untreated plots at several locations over the years, it did not translate into a yield reduction. Further work is needed to identify those conditions when response to foliar fungicides may provide an economic return.

Research results were shared at numerous industry and grower meetings throughout the state to provide guidance on whether using corn foliar fungicides is economically beneficial for Wisconsin corn growers. Results were published in the Wisconsin Crop Management Conference Proceedings and in the Wisconsin Crop Manager Newsletter.

## **Responding to a Difficult 2009 Crop Harvest**

### **Situation:**

The 2009 cropping season was one of the most difficult in years. A wet spring combined with the coolest summer in 60 years and frequent fall rains created numerous harvest challenges.

### **Response:**

In October 2009, Team Grains members collectively responded to the difficult crop harvest situation by utilizing a multi-disciplined approach to the challenges identified. Hosting a statewide webinar was identified as one way to quickly disseminate information. This agent (Mike Ballweg) provided the leadership and organization to conduct the statewide webinar. On November 6<sup>th</sup> 2009, a webinar titled "Harvest, Storage, and Feed Management Considerations" was delivered to address the delayed corn and soybean harvest, mold and mycotoxin development, and feeding corn that contain mycotoxins. The webinar was organized and delivered by county agricultural agents and specialists from: Plant Pathology, Agronomy, Soil Science, Dairy Science and Biological Systems. The webinar was archived on YouTube where producers and agronomists could access the information at a later date.

In addition to and in support of the webinar, nearly 20 articles, offering guidance on harvest challenges, were written by UWEX agents and specialists and uploaded to the Team Grains fyi site within two weeks.

### **Outcomes:**

244 participants from 61 locations participated in the webinar. Many participants were crop consultants and dairy nutritionists, greatly multiplying the webinar's impact for Wisconsin's livestock and crop producers. Of the 101 participants that evaluated the webinar:

- 99% found the webinar to be moderately to extremely useful.
- 98% would be able to apply the new information to their work.
- 92% thought the webinar was an effective method for delivering timely information.

Additionally, 450+ views of the webinar were made via YouTube in two months.

## **Commercial Horticulture**

### **Sheboygan County Prepares for EAB – Develops Management Plan**

#### **Situation:**

In August of 2008, DATCP announced that Emerald Ash Borer (EAB) had been found in the Village of Newburg, Ozaukee County, just 15 miles south of Sheboygan County. With Sheboygan County's close proximity to Ozaukee County, it seems likely that Sheboygan County residents and local officials will be dealing with the local impacts of EAB in the near future. Sheboygan County is an urbanizing county with a population of about 115,000, most of who reside in Sheboygan, Sheboygan Falls, Plymouth, and Kohler. Ash trees account for about 25% of municipal trees and every Ash tree is susceptible to EAB infestation and mortality. The economic liability to municipalities needing to address EAB (treatment, tree removal, and replacement) is potentially very significant. The development of an EAB Management Guide for Sheboygan County will assist communities in taking steps to prepare for EAB's arrival.

#### **Response:**

To address the imminent arrival of EAB in Sheboygan County, Mike Ballweg, UW-Extension Sheboygan County, organized and provided leadership for the formation of the "Sheboygan County EAB Work Group". The formation of this work group was supported by County Administrator Adam Payne, as well as the Planning, Resources, Agriculture and Extension Committee. Work group members included representation from: Land & Water Conservation Department, Planning & Resources Department, Emergency Government, Bay Lake Regional Planning, WDNR, WDATCP, and public works officials

from the cities of Sheboygan, Sheboygan Falls, Plymouth and Kohler. The “Sheboygan County EAB Work Group” needs assessment process identified the development of an EAB Management Guide as the top priority. Assessing the tree populations of existing urban forests (to conduct a tree inventory) was determined to be the priority need for developing an EAB management response plan.

Outcomes:

In 2010 Sheboygan County received a DNR Urban Forestry grant for \$5000 to develop an EAB Resource Management Guide for Sheboygan County. A \$15,000 Sheboygan County Stewardship Grant awarded in 2009 to the County EAB Work Group resulted in tree inventories on municipal lands in cities, towns, and villages in Sheboygan County. Thirteen (13) tree inventory maps were generated for Sheboygan County cities, towns, and villages. (Adell, Cascade, Cedar Grove, Elkhart Lake, Glenbeulah, Howards Grove, Kohler, Oostburg, Plymouth, Random Lake, Sheboygan Falls, and Waldo) Only one town had a partial tree inventory map prior to this project. With tree inventory data available, individual municipalities are now able to engage in a more fact based planning and budgeting process. The tree inventory data allowed the Sheboygan County EAB Work Group to develop a comprehensive EAB Management Guide for Sheboygan County that was based on current information discovered through the inventory process. The EAB Management Guide was shared during an EAB Open House program targeted at public officials and interested citizens.

The Sheboygan County Board passed a resolution in October of 2010 endorsing the EAB Resource Management Guide and encouraging municipalities to utilize the guide and the resources in the guide to help them prepare for EAB.

Evidence:

Sheboygan County Resolution NO. 21 EAB Resource Management Guide for Sheboygan County Communities.

<http://www.sheboygancounty.com/home/showdocument?id=2102>

## **Green Industry Professional Development:**

Situation:

The “Green Industry” has grown and continues to evolve with more “Green Industry” professionals, needing and requesting continuing educational opportunities to address emerging issues. Sheboygan County is both urban and rural, with a county population of about 115,000. Local horticultural businesses, public and private sector grounds keepers, and homeowners can benefit from a more skilled “Green Industry” workforce. Skillfully addressing EAB is one of those important emerging issues.

Response:

Develop UW-Extension educational programs to provide continuing education for “Green Industry” professionals.

Outcomes:

*Commercial Horticulture Educational Programs:* The **Landscape and Grounds Maintenance Short Course** continues to be a very successful educational program for those employed in commercial horticulture (Green Industry) in Eastern Wisconsin. This four-location UW-Extension program is planned and delivered across southeast Wisconsin. Sheboygan County is one of those locations. Annually, about 125 individuals have attended the Landscape and Ground Maintenance Short Course in Sheboygan County. Evaluations have been extremely positive.

In 2012 **The Survey Research Center (SRC)** at UW River Falls conducted a **Landscape and Grounds Maintenance Short Course** evaluation and calculated an average participants' knowledge gain of across all topics and sessions. When measured across all sessions and topics, the percentage of respondents who rated their pre-session knowledge as good rose from 29 percent to 57 percent afterward. The percentage of respondents who rated their knowledge level as excellent increased from 5 percent to 29 percent.

At the last session attended, each participant was asked to provide an overall evaluation of the short course. The evaluation showed a high degree of satisfaction among respondents with their experience in the short course. Ninety-Five (95) percent of participants said they are likely to attend future horticultural workshops offered by UW-Extension, and largest proportion by far (69 percent) said they are "very" likely to do so.

In a similar fashion, respondents gave high marks to the value of this UW-Extension short course compared to other providers' offerings. Four in five participants said the value of this short course was higher or much higher than educational programs delivered by other providers.

## II. Examples of Teamwork – Within UWEX and with External Partners

- ♦ Sheboygan County Farm Bureau – Implements of Husbandry – The Road Ahead
- ♦ Sheboygan County Invasive Species Work Group
- ♦ The Sheboygan River Paired Sub Watershed Project. Partners include: UW-Extension, The Nature Conservancy, DNR, NRCS, Sheboygan County Planning and Resources.
- ♦ Sheboygan County Ag Business Focus – Sheboygan Chamber of Commerce, UW-Extension
- ♦ Sheboygan County Emergency Government and Agriculture Emergency Response Planning
- ♦ Agri-Terrorism Response Plan Exercise developed in cooperation with Sheboygan County Emergency Government
- ♦ Leadership for the Emerald Ash Borer (EAB) Sheboygan County Management Guide. Work group members include representatives from: DATCP, DNR, UWEX, County Planning and Resources, Emergency Government, Municipal Foresters, and public works officials.
- ♦ Road Study – Ag Equipment of Rural Roads – Sheboygan County Towns Association, WI Custom Operators, Professional Nutrient Applicators Association.
- ♦ UW-Extension/Lakeshore Technical College Ag program collaboration
- ♦ Lakeshore Local Foods Network
- ♦ Wisconsin DNR Gypsy Moth Suppression Program for Sheboygan County
- ♦ Sheboygan County Administrative Committee
- ♦ NRCS – EQIP Local Work Group
- ♦ Sheboygan Sanitary District
- ♦ Area Cover Crops Users' Group

## III. Contributions to the Profession/University

- ♦ Chair -DALS Nominating Committee, 2012 - 2014
- ♦ University Committee , 2011 – 2013
- ♦ System Wide Extension Council, 2010 – 2013
- ♦ System Wide Extension Council Executive Committee, 2011 - 2013
- ♦ Academic Leadership Standing Committee, 2011 – 2013
- ♦ ARNE Consultative Committee , 2013
- ♦ Tenure Orientation Committee, 2010 – 2012
- ♦ Faculty Lateral Transfer Ad hoc Committee , 2012
- ♦ UW-Extension Faculty Senate, 2008-2011
- ♦ Program Teams: Grains, Forage, Nutrient Management, Horticulture
- ♦ ARNE Plans & Reports Ad Hoc Committee

#### IV. **Applied Research**

1. *Do Clovers have a Cover Crop Fit in Eastern Wisconsin - 2014*  
Mike Ballweg, Richard Proost, Matt Ruark, Jamie West  
Preliminary Research Result – unpublished (Power Point)  
<http://sheboygan.uwex.edu/files/2014/03/Do-Clover-Cover-Crops-have-a-fit-in-Eastern-Wisconsin.pdf>
2. *Tillage Radish Research Up-date Meeting- Sheboygan and Washington Counties -2014*  
Megan Chawner, Matt Ruark, Mike Ballweg, Richard Proost  
Preliminary Research Results – unpublished
3. Cover Crop Decision Tool and On-Farm Network, Kevin B. Shelley, UW Nutrient and Pest Management Program - 2012
4. Wisconsin Alfalfa Plant Nutrient Analysis Survey, Carrie Laboski, UW Soil Science Department. Funded by the Midwest Forage Association - 2011
5. On-Farm Variant Western Corn Rootworm Monitoring Project in cooperation with DATCP & Eileen Cullen, UW-Extension Entomologist
6. Soybean Aphid Monitoring Project in cooperation with Eileen Cullen and DATCP
7. On-Farm Soybean Cyst Nematode Sampling Survey- Cooperation with Wisconsin Soybean Growers and Brian Hudelson, UW Plant Pathology Lab
8. Japanese Knotweed Research Plot –Sheboygan County , Mark Renz – 2103 - 2014

#### V. **Publications**

1. *Cover Crop Research Up-date – Rye and Radish Effects on Soil Nitrogen - 2014*  
Matt Ruark, Kevin Shelley, Jim Stute, Richard Proost, Mike Ballweg  
Wisconsin Soil, Water, and Nutrient Management Meetings (Power Point)  
[http://www.soils.wisc.edu/extension/area/2012/Ruark\\_Covercrops.pdf](http://www.soils.wisc.edu/extension/area/2012/Ruark_Covercrops.pdf)
2. *On – Farm Cover Crop Trials: Clover, Rye and Radish*  
Matt, Ruark, Kevin Shelly, Richard Proost, Jim Stute, Mike Ballweg  
2014 Wisconsin Crop Management Conference. Page 14  
<http://sheboygan.uwex.edu/files/2014/03/ON-FARM-COVER-CROP-TRIALS-CLOVER-RYE-AND-RADISH.pdf>
3. *University of Wisconsin and UW-Extension Corn Foliar Fungicide Research Results, 2007 – 2011*  
Paul Esker, Bill Halfman, Mike Ballweg, Greg Blonde, Joe Bollman, Jerry Clark, Bob Cropp, Carl Duley, Richard Halopka, Carla Hargrave, Matt Hanson, Steve Huntzicker, Richard Proost, Trisha Wagner, Jon Zander, Bryan Jensen  
2011 Wisconsin Pest Management Up-date Meetings.
4. *2011 University of Wisconsin & UW- Extension Corn Fungicide Research: Results for V5 and R1 Application Timings*  
Paul Esker, Mike Ballweg, Bill Halfman, Jerry Clark, Matt Hanson, Richard Halopka, Richard Proost, Huntzicker, Bryan Jensen  
2013 Wisconsin Crop Management Conference, Page 142

5. *2010 On-Farm Corn Foliar Fungicide Trials Results*  
Paul Esker, Mike Ballweg, Bob Cropp, Bill Halfman, Richard Halopka, Matt Hanson, Steve Huntzicker, Jon Zander, and Paul Sturgis  
2011 Wisconsin Crop Management Conference, Page 105
6. *2009 Bt CRW Hybrid Survey Results*  
Mike Ballweg, Ted Bay, Greg Blonde, Joe Bollman, Carl Duley, Bill Halfman, Richard Halopda, Mike Rankin, Peg Reedy, Nick Schneider, Jim Stute, Trisha Wagner  
2010 Wisconsin Crop Management Conference, Page 74  
<http://sheboygan.uwex.edu/files/2014/03/2009-Bt-CRW-HYBRID-SURVEY-RESULTS.pdf>
7. *Tips to Guide Tour Corn Silage Harvest*  
Mike Ballweg  
Clippings – Midwest Forage Association Electronic Newsletter – 2011 & 2012

#### VI. **Administrative Responsibilities**

- ♦ Ag Clean Sweep Grants in cooperation with Sheboygan County Planning Department
- ♦ Pesticide Applicator Training
- ♦ Tri-County E-mail List. UW-Extension Sheboygan County is providing the leadership and on-going support of the Tri-County E-mail List for farmers and industry professionals in Sheboygan, Ozaukee and Washington counties.
- ♦ Sheboygan County UW-Extension Master Gardener Program

#### VII. **Professional Development (past five years)**

- ♦ UW-Madison Nitrogen Summit, Madison – March 2014
- ♦ Cover Crops and Soil Health – Harvesting the Potential, Omaha, NE – 2014
- ♦ Wisconsin Cover Crop Conference. Your Farm, Your Options, Wisconsin Dells, WI - 2014
- ♦ Climate Change in Wisconsin: Where do we go from here? Madison, WI – 2014
- ♦ Lake Michigan Conference, Sheboygan, WI 2013
- ♦ Working Lands Initiative, Fond du lac, WI
- ♦ Emerald Ash Borer Educational and Research Up-dates
- ♦ UW-Extension Technology Conference, Madison – 2012
- ♦ Wisconsin Crop Management Conference – Annually
- ♦ Agronomy Field Days – Arlington, WI - Annually
- ♦ Midwest Forage Association Symposium – Annually
- ♦ Soil, Water & Nutrient Management Meetings – Annually
- ♦ Agronomy Up-date Meetings – Annually
- ♦ Pest Management Up-Date Meetings – Annually
- ♦ Corn Rootworm Midwest Regional Distance Learning
- ♦ UW-Extension Transformational Leadership Conference
- ♦ Snap Plus Nutrient Management Training
- ♦ Wisconsin Community Leadership Program
- ♦ Wisconsin Turf grass Association Field Day – Annually
- ♦ ARNE Annual Conference
- ♦ Forage Teaching Technology In-Service
- ♦ Managing the Shifting Pest Dynamics – Webinar

VIII. **Professional Improvement Plans for the Next Five Years**

**Professional Development Plan**  
**Michael Ballweg**  
**2014 – 2019**

As I think about my professional development planning for the next five years, I need to first consider the issues and the economic environment in which we are currently operating. Issues needing to be addressed will include: crop production, crop profitability, cover crops, soil health, water quality, EAB management and non-farmer education. Learning and using new technologies for delivering information and engaging learners will also be required and needed.

Professional Development Plans would include:

- 1) Continue to seek out additional ways to use technology to provide information and engage learners.
- 2) Continue to develop subject matter expertise around the use of cover crops, nutrient management, soil erosion and improved water quality.
- 3) Continue to develop and fine-tune facilitation skills.
- 4) Continue to participate in subject matter up-dates in the areas of agronomy, forages, horticultural issues, water quality and other emerging issues as they develop.
- 5) Continue to develop and refine leadership skills.
- 6) Attend when possible NACAA AM/PIC conferences.