

Summer 2019

# MICHIGAN SOYBEAN NEWS<sup>®</sup>

Volume 11 - Issue 3



*Michigan Soybean  
Goes to Brazil  
Pages 16-19*

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A publication of the Michigan Soybean Association



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SOY

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*Whether you're dealing with drought, flood, heat or other climate-related stress, the soy checkoff is working behind the scenes to diversify U.S. soybean genetics and increase stress tolerance. We're looking inside the bean, beyond the bushel and around the world to keep preference for U.S. soy strong. And it's helping make a valuable impact for soybean farmers like you.*

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# Michigan Soybean News

Summer 2019  
Volume 11 - Issue 3

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Visit the Michigan  
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See what MSA is doing for its  
members.



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*Comments and suggestions  
can be submitted to:*

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## Michigan Soybean Association's Mission Statement

To improve and advocate for the Michigan soybean industry.

## From Your MSA President...



I want to take this opportunity to introduce myself as the new president of the Michigan Soybean Association. My name is Brian McKenzie and I hail from the small town of Marcellus, located in Cass County. I am the third generation to farm the hills on McKenzie Street. I farm approximately 4,800 acres, much of it irrigated, and contract finish hogs with a 6,000 head capacity. Due to farming in the rolling hills of southwest Michigan, along with many other economic based decisions, we are currently 100 percent strip till and are very happy with the results. I utilize over 2,000 acres of cover crops to



prevent wind and water erosion and add carbon to the soil. I guess I would consider myself a green farmer, as I place a large priority on conserving soil and water - I have seen one too many washouts during my 29 years as a full-time farmer.

I am honored to serve as your president in the last year of my 9 years on the board. The headwinds of trade and tariff issues weigh heavy on all of us in the ag community and we can only hope China and the United States can come to a favorable conclusion before more damage is incurred on the bottom line of America's farmers. I have been to many trade shows over the last year and one look at the programs offered sheds light on the dire economic environment facing those in ag. Programs offered range from surviving in today's economic climate to recognizing mental health issues and suicide risks.

As a delegate to the American Soybean Association policy sessions held at Commodity Classic in Orlando, I was able to be a part of setting policies to steer our industry in the years to come. Special emphasis was put on exploring new domestic uses and further enhancing exports to countries other than China to help strengthen producers' bottom lines.

I got the privilege of testifying in front of the Michigan House Ag Committee in February and realized the importance of doing so, as many members are freshman and have very little ag background. I was happy to see how attentive and interested they were in what I felt were the most important state issues facing ag in Michigan. I emphasized the importance of short line railroads to not only agriculture but to many rural communities and industries located along those lines. We have to make sure we prevent further deepening of the haves and the have-nots in the urban versus rural continuum. I also emphasized on a personal note how many semi loads of grain come in and out of my own operations to help them realize the shortfalls of road maintenance in rural areas. My last note was concerning the desperate need for labor on farms in Michigan, whether that be migrant labor, manual labor or skilled labor to work on farms and utilize today's sophisticated farm machinery. Planting is just around the corner, good luck and Godspeed.

Sincerely,

### MSA BOARD OF DIRECTORS

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# HELPING YOU DELIVER ON DEMAND

*Whether it's improving soybean meal to outperform the competition or promoting the sustainability of U.S. soy, the soy checkoff has been working behind the scenes to help farmers satisfy their customers' needs. We're looking inside the bean, beyond the bushel and around the world to keep preference for U.S. soy strong. And for U.S. soybean farmers like you, the impact is invaluable.*

*See more ways the soy checkoff is maximizing profit opportunities for farmers at [unitedsoybean.org](http://unitedsoybean.org)*





# MEMBER BENEFITS

People making decisions in Lansing and Washington, D.C. are getting further and further away from the farm. In the past, families had someone who was a farmer they could visit, but now generations are far removed and don't have a direct connection. "I've met several legislators that have never set foot on a farm. We as farmers need to be visiting with legislators and representing our land," stated Jay Ferguson, MSA director. "There is a lot of education that needs to occur to our politicians and the public."

Paying the soybean checkoff does not make you a Michigan Soybean Association member. Checkoff dollars cannot be used for lobbying.

## NEW LIFETIME LOYALTY MEMBER PROGRAM

As of October 1, 2016, if you have been an MSA member for 15 consecutive years, you will no longer need to pay dues - you have become a LIFETIME LOYALTY MSA MEMBER!

Call the soybean office at 989.652.3294 to check on your membership.



Are you receiving the MSA eNews?  
Email [soyinfo@michigansoybean.org](mailto:soyinfo@michigansoybean.org) to sign up for this informative membership e-newsletter.

### PROTECT YOUR FARM AND WAY OF LIFE, JOIN THE MICHIGAN SOYBEAN ASSOCIATION TODAY!

#### SOME MEMBERSHIP BENEFITS:

- 5% member discount purchase incentive on all IntelliFarms equipment and free admission to grain school and workshops
- Through Auto-Owners Insurance/Cedar River Insurance Agency, an offer of premium discounts up to 10% on select policies is available
- Scholarship opportunities for your children and grandchildren
- Preferred pricing on the purchase or lease of most new Chrysler, Dodge or Jeep vehicles
- Cabela's gift card purchase discount
- Discounted registration to the Commodity Classic

#### 3-YEAR OR LIFETIME MEMBERSHIPS:

- **NEW** for 3-year or Lifetime memberships is a \$300 Specialty seed certificate with a minimum order of 30 units
- \$50 certificate good for LG Seeds Roundup Ready 2 Xtend™ soybean seed **AND** a \$50 soybean seed certificate good for Renk Seed
- 2-\$25 Soy Biodiesel certificates **OR** 2-\$25 Soybean Meal Bucks certificates

The **MOST IMPORTANT MSA membership benefit: Having a voice in Lansing and Washington, D.C.!**

# MEMBERSHIP APPLICATION

First Name: \_\_\_\_\_  
 Last Name: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 City/State/Zip: \_\_\_\_\_  
 Phone: \_\_\_\_\_  
 Cell Phone: \_\_\_\_\_  
 Email: \_\_\_\_\_

Payment Amount & Method:  
**1-yr: \$75    3-yr\*: \$190    Lifetime\*: \$750**

Check (Payable to MSA) or Credit Card  
 Credit Card     Type: \_\_\_\_\_  
 Expiration Date: \_\_\_\_\_  
 Credit Card #: \_\_\_\_\_  
 Signature: \_\_\_\_\_

**Mail application with payment to:**  
 Michigan Soybean Association  
 PO Box 287, Frankenmuth, MI 48734

*Dues are not tax deductible as a charitable contribution for federal tax purposes, but may be deductible as a business expense. 18% of member dues are allocated to lobbying activities and are not deductible.*

**For a list of all membership benefits, visit [www.misoy.org/member-benefits/](http://www.misoy.org/member-benefits/)**

\*3-year and Lifetime memberships can choose between receiving either (check one):

- 2-\$25 Soy Biodiesel Bucks certificates or
- 2-\$25 Soybean Meal Bucks certificates

Date of Birth: \_\_\_\_\_

Number of Soybean Acres: \_\_\_\_\_

Total Farm Acres: \_\_\_\_\_

Occupation (check one):  
 Farmer     Retired     Other

What issues interest you most?  
 (Check all that apply)

- Biodiesel/Biobased Products
- Farm Bill
- Transportation Infrastructure
- Trade Agreements
- Conservation
- Soybean Rust
- Biotechnology
- Freedom to Operate
- International Marketing
- Soy and Nutrition
- Other: \_\_\_\_\_



# Making Visits on the Hill

By: Dan Keenan, Michigan Soybean Association Director

I recently completed the Leadership at its Best program put on by Syngenta and the American Soybean Association (ASA). The first session took place in Raleigh, North Carolina last August and the program culminated with training in Washington D.C. March 18-20 in conjunction with ASA's board meeting and Hill visits.

During these sessions we received training on interacting and educating members of Congress and their staff on behalf of American soybean farmers. We were able to talk with a panel of senior staff members who were directly involved in writing the recent Farm Bill. This portion was very beneficial in that we were able to ask them many questions and got an inside look at the process of writing and pushing through a Farm Bill. One question I asked was what role ASA played in the process, as well as how ASA is viewed by members of Congress and their staff. I was glad to hear that ASA was viewed in high regards and played a large role in sharing input during the writing of the Farm Bill.

Our last day involved Hill visits where Matt Stutzman, Michigan's ASA delegate and board member, and I were able to meet with many staff members from our congressional offices, as Congress was on break while we were there. At first glance, not meeting with the members of Congress themselves may seem disappointing, but one thing you may not know is how valuable staff members are. Imagine the Senator or

Representative as the LeVeon Bell or Aaron Rodgers of the congressional team. They get all the glory and recognition, but everyone knows the offensive line is the unsung hero that makes the running back and quarterback look good. The staffers are the offensive line of the congressional team. If you ever find yourself in Lansing or D.C. visiting your members of Congress, keep that in mind when talking to a staff member.

I'm extremely grateful to have had the chance to participate in this well-respected program. I encourage those of you interested in serving in the agriculture industry to participate. Whether it be through the Michigan Soybean Association, Michigan Corn Growers Association, Michigan Farm Bureau, or any other farm group, it is important for us to get involved on behalf of our industry. People involved in agriculture, although vital to our nation's prosperity, make up a very small percentage of the population. We need representation at the state and federal levels of government to fight and defend our industry and our way of life.

Remember, we live in an age where it is no longer the next generation ON the family farm, but another generation REMOVED from the family farm. And if you can't afford the time to serve in any role, I encourage you to at least become a member. Being a member is equally important in that the larger the representation we have when we visit Congress, the louder and better received our voice is. And remember, GO GREEN!



Matt Stutzman, Derek Judd from Representative Mitchell's office and Dan Keenan.



Dan Keenan, Taylor Gayton from Senator Peter's office and Matt Stutzman



Dan Keenan, Chris MacArthur from Representative Moolenaar's office and Matt Stutzman



# Michigan Agriculture Deserves Solutions

By: Governor Gretchen Whitmer

After decades of disinvestment, Michigan is at a crossroads. These challenges that we are faced with aren't isolated to rural areas or urban communities or consolidated to districts that voted for Republicans or Democrats. These are issues that are putting our families, our farms and our soybean production at risk - and I didn't run for governor to manage the decline of our state. I ran to make sure that Michigan is a home for opportunity, which starts with fixing the roads, expanding broadband internet access and having leadership in Lansing that can get it done.

**Fixing the Roads:** I don't need to explain how bad our infrastructure is because we already know Michigan has the worst roads and bridges in the nation. But it isn't just cars and drivers that are paying the price. Our crumbling infrastructure is limiting the economic potential of soybean growers who spend countless hours to ensure they have a bountiful yield. The last thing anyone needs to worry about at the end of the season is how to take that product to the processing facility to get paid. Yet, with 929 local bridges rated in "poor" condition and roads quickly getting worse, some farmers are forced to take longer routes or risk additional damage to their trucks as they transport their product.

My budget provides a long-term solution to our decades-in-the-making transportation crisis by restoring our roads to the national standard of 90 percent in good or fair condition by 2029. This is an aggressive proposal that guarantees all of the money raised at the pump is constitutionally protected and allocated toward roads. If we want to keep our food and ag-based businesses growing and creating jobs, then Michigan needs to finally fix the damn roads. However, fixing our infrastructure goes further than just fixing roads and bridges; connecting rural areas is a necessity in the 21st Century.

**Broadband Internet:** For Michigan's farmers to operate at optimum efficiency and remain competitive in a world market, broadband access will become an absolute necessity. With a significant rise in precision agriculture and high-tech equipment, farmers need broadband to have access to vital data collection, such as soil conditions, dew points, temperature and wind speed, to make real-time decisions regarding factors like seed population and fertilizer rates. My budget proposal to fix the roads will help us fix broadband.

When we rebuild our roads, we have a unique opportunity to partner with internet service providers during the construction process to extend broadband access along those routes simultaneously to reach more rural areas. For every one-percent increase in broadband access, we could create or save about 12,000 jobs statewide, and farmers who get connected to broadband would see a six-percent increase in revenue. The proposals that I've put forward are bold and it will take a similar type of leadership in Lansing to help me implement them.

## Leadership that Understands Your Needs:

If we are going to accomplish these goals, we need to create more seats at the table who represent the rich diversity in our state, including the strong legacy of our farmers. One of the ways I've done this is by appointing Gary McDowell to lead the Michigan Department of Agriculture and Rural Development. As an owner and operator of McDowell Brothers Farm and McDowell Hay Incorporated with his brothers, Gary knows what farmers need. If you combine Gary's decades of experience brokering hay sales with his time as a lawmaker, we get a leader who knows how to get things done. It's a win-win. Gary will be a strong partner with our state's farmers to identify ways to support economic growth in Michigan while protecting our incredible natural resources.

**The Road to Opportunity:** Despite our challenges, Michigan's greatest strength is - and always has been - our people. We have an opportunity here in Michigan to finally fix the damn roads, expand broadband internet access and establish leadership in Lansing who can anticipate growers' needs. I'm ready to work with soybean growers and members of the Michigan Soybean Association to get the job done. Together, we can keep our foot on the gas because Michigan's soybean farmers deserve solutions.

*Governor Whitmer is the 49th governor of the State of Michigan.*



# Two Seats Available on Michigan Soybean Promotion Committee Board

By: Noelle Byerley, Executive Assistant

Every year seats on the seven-member Michigan Soybean Promotion Committee (MSPC) board are open for appointment or reappointment by the Governor. Two of these positions will be filled this summer. Each district up for appointment must submit two names for consideration.

The districts seeking applicants include:

- **District 6** –Clinton, Genesee, Ionia and Shiawassee counties
- **District 7** – Alcona, Alger, Allegan, Alpena, Antrim, Baraga, Barry, Benzie, Charlevoix, Cheboygan, Chippewa, Clare, Crawford, Delta, Dickson, Emmet, Gladwin, Grand Traverse, Gratiot, Gogebic, Houghton, Iosco, Iron, Isabella, Kalkaska, Kent, Keweenaw, Lake, Leelanau, Luce, Mackinac, Manistee, Marquette, Mason, Mecosta, Menominee, Midland, Missaukee, Montcalm, Montmorency, Muskegon, Newaygo, Oceana, Ogemaw, Ontonagon, Osceola, Oscoda, Otsego, Ottawa, Presque Isle, Roscommon, Schoolcraft and Wexford counties.

Interested soybean farmers residing in these districts should contact the soybean office at 877.769.6424 or email [soyinfo@michigansoybean.org](mailto:soyinfo@michigansoybean.org). Those interested in applying will be provided with a link to apply online. All applications need to be completed by July 31, 2018. The term starts at the end of September, with the first board meeting being held in December. We also encourage interested applicants to attend a regular MSPC board meeting to learn more about the board. MSPC’s next board meeting will be held at the end of June. Call to confirm the finalized meeting date and to RSVP if you are interested in attending.



## MICHIGAN SOYBEAN PROMOTION COMMITTEE BOARD OF DIRECTORS

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Pete Crawford Dansville, District 2 517.206.2694	Alan Moore Bannister, District 6 989.862.4686
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Dennis Gardner Crowell, District 4 810.387.4481	MSPC Office PO Box 287 Frankenmuth, MI 48734 989.652.3294 <a href="http://www.michigansoybean.org">www.michigansoybean.org</a> <a href="mailto:soyinfo@michigansoybean.org">soyinfo@michigansoybean.org</a>

*The mission of the Michigan Soybean Promotion Committee is to manage checkoff resources to increase return on investment for Michigan soybean farmers while enhancing sustainable soybean production.*

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Financial and International Marketing Director  
Kathy Maurer  
Executive Assistant  
Noelle Byerley  
Research Coordinator  
Mark Seamon  
Communication Director  
Sonja Lapak  
Soybean Production Specialist  
Ty Bodeis

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Your Soybean Checkoff ✓

# 2019 Commodity Classic

By: Sonja Lapak, Communication Director

The Michigan Soybean Promotion Committee was well-represented at this year's Commodity Classic, which was held in Orlando, Florida from February 26 – March 1, 2019. Over 9,100 farmers, agribusiness professionals and commodity organization staff members attended the event this year.

Michigan soybean farmers and staff participated in a variety of different meetings throughout the week and were able to engage with other leaders in the soy industry from around the country.

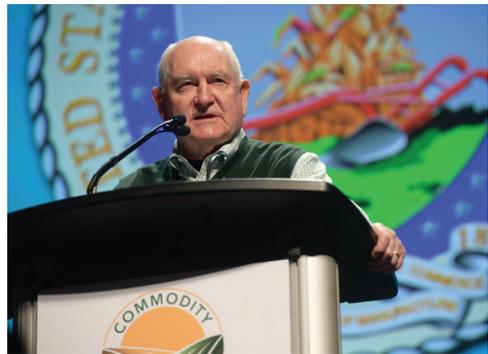
The North Central Soybean Research Program (NCSRP), United States Soybean Export Council (USSEC) and Soy Transportation Coalition (STC) all held meetings that Michigan soybean farmers and staff were involved with. In addition, the Young Leader Program held their second session, which Michigan representatives Mark and Vanessa Senk and Chris and Debra Schmidt were able to participate in. The Michigan Soybean Association delegates were also

busy with American Soybean Association (ASA) policy resolution sessions, which help outline ASA's priorities for the year to come. All attendees had a chance to hear from United States Department of Agriculture (USDA) Secretary Sonny Perdue, who commended farmers on the work they do and shared updates on trade negotiations, Farm Bill implementation and USDA efforts to increase their efficiency for farmers. There were also a wide variety of learning center sessions available, as well as an expansive trade show with equipment dealers, seed companies, input suppliers and many other agribusinesses represented.

This event is a great opportunity for farmers to network, learn and expand their horizons each year. It also offers a great opportunity for many commodity groups to hold meetings and events for their farmer leaders and staff. Next year Commodity Classic will be held in San Antonio, Texas, February 27 – 29, 2020. See you there!



Above is Vanessa and Mark Senk and below are Debra and Chris Schmidt. Both couples pictured with Davie Stephens, ASA President and Alyssa Sundell, Strategy & Engagement Manager External Affairs, Corteva Agriscience.  
Photo credit to ASA/Joe Murphy.



Above: USDA Secretary Sonny Perdue  
Below: Researcher presenting at the NCSRP meeting.



# Educating and Informing Policymakers and the Public

By: Ryan Hermes, Byrum & Fisk

From the ongoing trade dispute with China to the impact of the United States-Mexico-Canada Agreement, the Agricultural Leaders of Michigan (ALM) has ensured the Michigan Soybean Association and Michigan Soybean Promotion Committee are front-and-center with policymakers and their staff in Lansing and Washington, D.C., amplifying the voices of Michigan's soybean farmers.

ALM is a coalition of agricultural, commodity and agri-business leaders committed to promoting Michigan agriculture, participating in the ongoing dialog about issues affecting the industry and harnessing agriculture's power and potential to further grow Michigan's economy.

We work with our members to proactively promote and influence state and federal business policies while enhancing the image and economic well-being of Michigan's agricultural industry to maximize the economic opportunities agriculture presents for diversifying and contributing to the renewal of a vibrant Michigan economy.

## LUNCH AND LEARN UPDATES IN LANSING

The amount of time lawmakers in Michigan can hold elected office is governed by term limits, meaning at a maximum, every six years new legislators are sworn-in to the House of Representatives and every eight years new lawmakers are sworn-in to the Michigan Senate. While new lawmakers are frequently ushered in and out, many times legislative staff remains, making them invaluable as they retain institutional knowledge on key policy issues. In an effort to reach lawmakers and their staff, ALM holds Lunch & Learn sessions every other month featuring different ALM members. These Lunch & Learns provide important small group interaction with legislative staff and provide members an opportunity to talk about critical issues impacting their industry.

## AG CLUB BREAKFAST IN THE NATION'S CAPITAL

Twice a year, ALM hosts a breakfast in Washington, D.C. for its members, Michigan's congressional delegation and their staff. This event provides members with an opportunity to interact one-on-one with the state's congressional leaders and U.S. Senators, which include Sen. Debbie Stabenow, the ranking Democrat on the Senate Committee on Agriculture. Sen. Stabenow has been integral in securing important victories for Michigan farmers in the Farm Bill.

## ALM RADIO UPDATES DISTRIBUTED TO RADIO STATIONS ACROSS THE STATE

In an effort to broaden its reach, the Agricultural Leaders of Michigan produces weekly in-house radio reports featuring a different ALM member each week. These reports are then distributed to commercial and public radio stations across Michigan and made available online through ALM's soundcloud page. These reports allow members to focus on specific topics of importance or make important announcements in their own words, and have that message sent to news directors and reporters throughout Michigan. Some radio stations run the reports as-is while others utilize the audio for stories in newscasts. However they are used, these reports help ALM members reach farmers and non-farmers alike across Michigan.

Recent Michigan Soybean Association and Michigan Soybean Promotion Committee reports include an update from the 2019 Commodity Classic, an inside look at the association's leadership program and an assessment of the impact of winter weather on the soybean harvest.



# NEW AND RENEWING MSA MEMBERS

**NEW:**

Jaimie Benore, Erie  
Joel & Janna Fritz, Bad Axe  
Donald Johnson, Camden  
Steve Koroleski, Kinde  
Bill Martin, Pewamo  
Andrew Opperman, Saginaw  
Paul Taylor, Ottawa Lake  
Jim Wykoski, Wayland

**RENEWING:**

Leonard Ash, Owosso  
Doug Bent, Jones  
Ray Birchmeier, New Lothrop  
Ned Birkey, Ida  
John Brendel, North Branch  
Ryan Brown, Sandusky  
Doug Brya, St. Johns  
Citizens Elevator Co. Inc., Vermontville  
Robert Corrin, Owosso  
Chris Creguer, Unionville  
William Dodds, Onsted  
Larry Dolegowski, Dorr  
Jeff Fromm, Owosso  
Jeff Furness, Yale  
Blake & Cliff Gordon, Croswell  
Larry Gould, Morenci  
Daryl Griner, Jones  
Elden Gustafson, Williamston  
Ron & Mark Helmreich, Freeland  
Steve Hoeksema, Imlay City  
Larry Hoffman, Marshall

Vaughn Hoffman, Marshall  
Richard Jacobs, New Lothrop  
Frederick Keith, Burt  
James Kleinert, Munger  
Gary Kreps, Temperance  
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Randy Laurenz, Breckenridge  
Darrin Lutz, Sebewaing  
Curtis Mans, Zeeland  
Frank Marcello, Hemlock  
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Abraham Nemcik, St. Johns  
Bruce Noel, Leslie  
Gerald Opificius, Mussey  
Clay Ottoni, Waterford  
Kevin Page, Lyons  
Keith Pohl, Coldwater  
Rob Richardson, Vicksburg  
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Tyler Schaendorf, Dorr  
Steven Schlagel, Turner  
Stephen Seamon, Saginaw  
Philip Selter, Ypsilanti  
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L. Scott Sommerfield, Munger  
John Sulkowski, Goodells  
Gene Vandressche, Bay City  
Ron White, Scotts  
Ted Wilk, Alma

***"The more voices we have, the louder our message."***

Dave Williams,  
MSA Member

**JOIN TODAY!**

**For a list of member benefits and the member application, see pages 6 and 7.**

**MICHIGAN CROP  
IMPROVEMENT  
ASSOCIATION**



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Phone: 517-332-3546. e-mail: info@michcrop.com*

# Assessing Soybean Emergence

By: Mike Staton, MSU Extension Soybean Educator

Many factors can adversely affect soybean germination and emergence, and early detection and identification will allow producers to make timely management decisions and implement management strategies as needed. Soybean producers should check emergence in each field individually. Under ideal conditions soybean emergence will occur in six days but can take more than 15 days under more challenging conditions.

There are two main methods for taking soybean emergence/stand counts: 1) counting the emerged seedlings in a length of row equal to 1/1,000 of an acre and 2) counting emerged seedlings within a well-defined sampling area (Hula Hoop method), as shown in Photo 1. The Hula Hoop method is recommended for row spacings less than 15 inches and the 1/1,000 of an acre method is recommended when row spacing equals or exceeds 15 inches.

For either method, take counts from 10 random areas of each field and calculate the average. Only plants that have lifted their cotyledons out of the soil should be considered as emerged.

Photo 1. Hula hoop in 7.5-inch rows



Table 1. Row length to equal 1/1,000 of an acre

Row width (inches)	Length of one row to equal 1/1,000 of an acre
15	34 feet and 10 inches
20	26 feet and 2 inches
22	23 feet and 8 inches
30	17 feet and 5 inches

To use the information in Table 1 to estimate the number of soybean plants per acre in 30-inch rows, count the number of plants in 17 feet 5 inches of row at 10 random locations in the field. Simply multiply the average count for the 10 locations by 1,000 to get plants per acre. For example, if the average count in the sampled rows was 108, the population would be 108,000 emerged plants per acre.

Table 2. Conversion factors for hula hoops

Diameter of hula hoop (inches)	Conversion factor
36	6,616
33	7,337
30	8,878

When using the Hula Hoop method, select the largest hoop available, as a hoop having a diameter of 36 inches covers only 7 ft<sup>2</sup>. Toss the hoop in 10 random locations in the field and record the number of emerged plants within the hoop at each location. Calculate the average and multiply it by the appropriate conversion factor for the diameter of the hoop you are using. For example, if the diameter of the hoop is 36 inches and the average number of emerged plants is 20, the population is 132,320 emerged plants per acre (20 x 6,616). If the diameter of your Hula Hoop is not listed in Table 2, you can calculate the conversion factor with the following equation:

$$\text{CONVERSION FACTOR} = 43,560 \div [3.14 \times (\text{THE INSIDE HOOP DIAMETER IN INCHES} \div 2)^2 \div 144]$$

Thirty-two replicated on-farm trials conducted in Michigan from 2015 to 2017 demonstrated that thin soybean stands can produce high yields. Please refer to an article titled "Thin Soybean Stands can Produce Surprisingly High Yields" published by MSU Extension News before making replanting decisions. The article is available online at: <https://www.canr.msu.edu/news/thin-soybean-stands-can-produce-surprisingly-high-yields>.

# MSU AGRICULTURE INNOVATION DAY

July 26, 2019

UNIVERSITY FARMS, MICHIGAN STATE UNIVERSITY, LANSING,  
MICHIGAN

## FOCUS ON PRECISION TECHNOLOGY THAT PAYS

Learn from nationwide experts how implementing technology that aids in decision-making can improve yields, increase profit margins and reduce environmental impacts.

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**AUGUST 13-14 2019**

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With a focus on providing practical, usable information, the AgroExpo aims to change the way you think about your farm. In-field demonstrations, educational programs and presentations to ensure you take home new ideas and plans for growth.

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[theagroexpo.com](http://theagroexpo.com)



# Brazil Soybean Study Tour

**By: Sonja Lapak, Communication Director**

**I**n mid-February a group of soybean farmers, industry representatives and staff from Michigan headed to Brazil on a soybean study tour to learn about soybean production and infrastructure in the country. Brazil is the U.S.'s largest competitor when it comes to soybean production – in 2017 the U.S. produced 4.39 billion bushels of soybeans and Brazil harvested 4.15 billion bushels.

The Michigan Soybean Promotion Committee (MSPC) board recognizes the importance of learning from and about our largest competitor, especially considering the turbulent times we are currently in with some of our largest trade partners. This trip offered an abundance of opportunities to learn and ask questions, as well as opportunities to draw comparisons to farms here in the U.S. "The checkoff board appreciates our strong position in world soybean production but we must be aware of how that is changing and how it may affect us," shared Steve Koeman.

Most of our trip was spent in the Paraná state, which is a primarily agricultural state in southern Brazil. We had several tour guides and hosts that are farmers in Brazil, which provided excellent opportunities for us to ask questions and hear from people who are very familiar with the agriculture industry in the country.

During our trip, we were able to see elevators, co-ops, a government funded research facility, livestock operations and crop farms of various sizes. The Paraná state has a lot of diversity in terms of farm size, which allowed for a well-rounded experience.

On our first day, we heard from a farmer who farms near Londrina. He owned some farm land, but also rented land from a German landowner. We encountered several farms that were owned by farmers of European descent – some farm the land themselves, while others rent their land to Brazilian farmers. We visited soybean fields near the land owners plantation and experienced roads in rainy conditions, as it rained for the first time in nearly a month during our trip.

We saw some road construction projects taking place and learned more about infrastructure in the country as well. Related to infrastructure in Brazil, Dave Williams shared, "I had heard about Brazil's infrastructure before our visit and seeing is believing. It appears Brazil's lack of infrastructure is what prevents them from dominating the world soybean market. Roads are extremely rough, rocky and primarily unpaved, and the vast distances farmers must travel are a handicap. Throughout our trip we saw very little rail transport – there is one narrow gauge railroad that



carries a small percentage of commodities to the Port of Paranaguá, south of São Paulo. We also heard about a rail connection being built and financed by China. Make no mistake, if we can't resolve our trade differences, China has the money and will to invest in countries to protect their food source – they are very concerned about food security. We were told there was no storage at the port, only four slips for loading ships and trucks scheduled to deliver and directly fill the ships while they are docked – I can't imagine waiting in line to do that. The lack of railroads in Brazil means virtually everything is trucked. They have thousands of 'B Train' trailers rolling over the roads (sometimes crawling during the rainy season when the roads turn to mud) hauling soybeans 1,000 miles or more to the port for export. To the best of my knowledge, there are only two ports exporting soybeans, the one in Paranaguá and another newer facility in northeast Brazil – funded by China."

Early in our trip we also visited Agro100, an elevator in Londrina. "One of the biggest differences we saw is that the soybeans are harvested at higher moisture and then dried with a wood fired dryer. They grow eucalyptus trees for the sole purpose of running their dryers," shared Alan Moore. The size of

commercial elevators in Brazil was similar to American elevators. The use of wood to fuel dryers and lack of rail at these sites are a competitive advantage for us.

At the elevator we saw a truck unloading and were able to see the quality of soybeans being received. "It was interesting to hear that they spray their soybeans with paraquat when the pods are 80 percent yellow, so the beans themselves don't dry down in the field. They were green compared to the soybeans we harvest here in the U.S. They also run all soybeans through a cleaner," shared George Zmitko.

Dennis Gardner discussed the harvest process we saw many times during our trip, "Since we were there during harvest, we saw that as soon as the soybeans were harvested the planters followed the combine planting corn for second crop. Because of the environment and seasons they can grow two crops. Generally speaking, soybeans are their primary crop and corn is the crop they grow during the winter. Soybean yields converted to about 60 bushels per acre (they measure yield in metric tons) and the average corn yield was around 100 bushels per acre. There were a few areas that rotated wheat as well. A few areas did corn first, depending on the elevation."

## Your Soybean Checkoff

We were also able to see a wide variety of equipment. Popular brands include New Holland and Massey Ferguson, as well as John Deere and Case IH. "In our recent trip to Brazil we witnessed harvest along with the planting of some of their safrinha (second crop) corn crop. With this we got to see the equipment they used. While they were utilizing GPS, I did not see many tractors with cabs in the area we were in. A lot of tractors had corner posts and roofs. The terrain was very hilly so any grain heads I saw were under 30 feet. This also applied to their drills. Everything was drilled and none were much wider than 20 feet. I believe this also had to do with the topography of the region and their practice of utilizing terraces to prevent erosion," shared Dan Keenan. He added, "We did not see any hopper bottom trailers while down there. We believe it's due to the very poor road conditions and the low clearance those trailers have."

During our visit to Embrapa Soja, their government-funded soybean research facility, we were able to see their labs, greenhouses and field plots where they conduct soybean research. They discussed the many types of research they are working on related to pests, weeds, fertility, food uses and more. Their work seems similar to university research conducted here in the U.S. "The publicly funded research entity Embrapa was crucial to the development of the Brazilian soybean industry," shared Mike Staton.

"It was interesting to hear that Embrapa experts have adapted soybean genetics to fit their tropical climate, which includes maturity groups of six to eight," stated Mark Seamon.

The soybean industry in Brazil has grown rapidly in the past 50 years and their country has the potential to continue to increase acreage by expanding north into the state of Mato Grosso. The land there is called cerrado and is brushy savannah land that is converted to tillable ground quite easily. This offers an opportunity for Brazil to surpass the U.S. in soybean production, especially if they are able to overcome their biggest limiting factor – transportation issues. Soil fertility in this newly converted land is another limitation which requires large amounts of imported fertilizer.

We visited a coffee and soybean farm that was founded by Swiss immigrants in the 1940s. Coffee production in Paraná has decreased because it is labor intensive and many farms have switched to cash crop production, so many of the remaining coffee farms are a labor of love. The farm used to employ hundreds of workers and had its own school and church for employees, but the need for labor has decreased as they have switched to mechanized coffee harvesters and increased their cash crop acreage.

Another farm we visited was owned by an Austrian immigrant and grew soybeans for seed, in addition to operating a large cattle feedlot. This farm included seed production for seed companies that are well known in the U.S. "All of the production we saw was commodity soybeans, as opposed to niche markets such as non-GMO, food grade and other specialty soybeans," shared Ben Glass.

Another stop during our trip was to Copacol, a cooperative which supplies crop inputs and markets grain. The co-op also partners with Bayer to conduct research trials at their location. The input we received indicated cooperatives are well-liked by Brazilian farmers and participation is good. We did however hear stories of corruption in co-ops.

I would be remiss if I didn't briefly mention our visit to Iguacu Falls National Park, a set of waterfalls on the border of Brazil and Argentina. Though not soybean related, the park offered an opportunity to take in over 275 waterfalls, including the second tallest waterfall in the world, situated in the middle of a rainforest. It was an incredible opportunity to experience before our flight home.

This trip was an excellent chance for a group of farmers and representatives of the Michigan soybean industry to immerse themselves in Brazilian agriculture and learn from our largest competitor.



## Brazil Ag Facts:

- Conservation is a priority in Brazil; nearly all fields are no-till.
- Topsoil is very deep and well-drained and does not require tile drainage .
- 20 percent of farm land in Brazil must be maintained as forest and kept out of production.
- By law, soybeans cannot be planted in the winter, to help combat Asian rust, a major disease issue in the country.
- Soybeans are often used as a form of currency for payment of expenses such as land rent and land purchases.
- Custom application of fertilizer and pesticides is nearly non-existent.
- Insect pressure is higher than in the U.S. and normally requires multiple applications of insecticides.
- Herbicide-resistant weeds are becoming an issue.
- Factors limiting Brazil from increased soybean production:
  - o Dependence on foreign fertilizer
  - o High cost of trucking
  - o Poor conditions of roads and bridges
  - o Lack of ports
  - o Lack of grain storage
- Factors favoring increased Brazilian soybean production:
  - o Plenty of available arable land
  - o Favorable climate to produce year-round
  - o Improving infrastructure

## Trip attendees:

Dennis Gardner, MSPC director

Ben Glass, Zeeland Farm Services Inc.

Dan Keenan, MSA director

Steve Koeman, MSPC director

Sonja Lapak, MSPC staff

Alan Moore, MSPC director

Phyllis Moore, soybean grower

Mark Seamon, MSPC staff

Mike Staton, Michigan State University Extension

Dave Williams, United Soybean Board director

George Zmitko, soybean grower



# 2019 Funded Research Projects

By: Mark Seamon, Research Coordinator

The Michigan Soybean Promotion Committee (MSPC) board of directors has approved 23 competitive research projects for 2019. This program provides funding to experts who are skilled at conducting meaningful research in Michigan soybean production. Although reduced somewhat from previous years, the 23 projects total about \$622,000 in funding. Funding decisions follow a strategic plan to allocate funds to the most critical needs of Michigan soybean growers.

Many projects build upon previous funding and contribute to multi-year projects while some are single year projects. Funded projects are based on four key research categories, each representing specific areas of soybean production and profitability. All research projects fall within at least one of the following categories:

- Resource Limitations: factors that impact attaining maximum genetic potential
- Plant Health: issues that compromise and detract from plant health
- Genetics: inherent genetic potential of soybean plants
- External Factors: factors that impact soybean profitability, external to plant production

Research projects are intended to work across focus areas and develop integrated solutions to production issues. Research projects addressing these priorities receive preference, though proposals for research projects addressing issues outside of these priorities are considered.

The following are the 2019 funded projects, divided into seven categories (weed control, disease control, soybean breeding, agronomic management, nutrient management, soybean cyst nematode and miscellaneous):

## WEED CONTROL

### WEED CONTROL STRATEGIES FOR NON-GMO SOYBEAN GROWERS

Researcher: Dr. Christy Sprague, Michigan State University (MSU)

Grant amount: \$8,149

Description: Evaluate several commercially available herbicide combinations in non-GMO soybeans. Evaluation will include weed control, crop response and soybean yield. Economic analysis will be conducted to determine the most economical weed control program.

### COVER CROPS AND OTHER STRATEGIES TO MANAGE GLYPHOSATE-RESISTANT HORSEWEED (MARESTAIL)

Researcher: Dr. Christy Sprague, MSU

Grant amount: \$27,333

Description: The control of glyphosate resistant marestail requires the use of several tools. This project will evaluate multiple herbicide treatments, new soybean genetic resistance traits and fall-seeded cover crops. Growers have found success with some of these methods, but more fine-tuned management recommendations will improve successful weed control.

### MANAGEMENT OF HERBICIDE-RESISTANT WATERHEMP WITH NEW HERBICIDE-TECHNOLOGIES

Researcher: Dr. Christy Sprague, MSU

Grant amount: \$27,731

Description: Many populations of waterhemp in Michigan are resistant to both glyphosate and ALS herbicides. This limits effective herbicide choices. New genetic herbicide resistant traits hold promise to control these difficult weeds. Liberty Link GT27, Liberty Link, XtendiMax and Xtendflex technologies will be evaluated for their control of waterhemp.

## DISEASE CONTROL

### **IMPROVING WHITE MOLD MANAGEMENT: EPIDEMIOLOGY, FUNGICIDE TIMING AND PLANT RESISTANCE**

Researcher: Dr. Martin Chilvers, MSU

Grant amount: \$21,000

Description: This project includes some basic research in understanding the spore release and plant infection timing to help choose optimum chemical control timing. Fungicide comparison will also be included. Collaboration with soybean breeders in developing lines with white mold resistance will be the third part of this project.

### **SOYBEAN SDS AND SCN MANAGEMENT: DETECTION, FUNGICIDES AND RESISTANCE**

Researcher: Dr. Martin Chilvers, MSU

Grant amount: \$49,000

Description: Seed treatments will be evaluated for their control of SDS and its symptoms. SDS species assays will also be included to help understand the genetic diversity of this disease across Michigan. Genetic resistance to SDS will be evaluated in many soybean lines in development.

### **DETERMINATION OF PHYTOPHTHORA SOJAE POPULATIONS AND ASSESSMENT OF MANAGEMENT STRATEGIES**

Researcher: Dr. Martin Chilvers, MSU

Grant amount: \$30,000

Description: Phytophthora continues to threaten plant health in Michigan. The diversity of this pathogen and the genetic resistance offer complexities that require more understanding. This project will help to update recommendations for Michigan growers to protect yield potential.

### **SOYBEAN CYST NEMATODE AND SUDDEN DEATH SYNDROME MANAGEMENT WITH ILEVO SEED TREATMENT AND GENETICS**

Researcher: B & M Crop Consulting, Inc.

Grant amount: \$18,900

Description: Genetic resistance and seed treatments can be combined to reduce the yield loss caused by SCN and SDS in fields with significant pest pressure. Soybean yield and economics will be compared between Peking and PI88788 sources of resistance as well as ILeVO treated and untreated seed.

## SOYBEAN BREEDING

### **SOYBEAN BREEDING AND GENETIC IMPROVEMENT FOR MICHIGAN ENVIRONMENTS**

Researcher: Dr. Dechun Wang, MSU

Grant amount: \$100,000

Description: The MSU soybean breeding program will continue to develop varieties with high yield and resistance to critical disease and insect pests. Specialty lines will also be developed with high protein, large and small seed size and high value oil traits. Industry input will be used to provide future direction of market demand.

### **SCREENING AND DEVELOPMENT OF GERMLASM WITH RESISTANCE TO SUDDEN DEATH SYNDROME AND SOYBEAN CYST NEMATODE**

Researcher: Dr. Dechun Wang, MSU

Grant amount: \$15,000

Description: A valuable research site in Decatur, MI features significant pest pressure from Sudden Death Syndrome and Soybean Cyst Nematodes. This project funds securing and operating this site, which features disease and nematode management evaluations.

### **ENHANCE RESEARCH IN SOYBEAN FIELD EVALUATIONS IN MICHIGAN**

Researcher: Dr. Dechun Wang, MSU

Grant amount: \$50,307

Description: The management of the multiple locations of the Michigan Soybean Performance Trials and the MSU soybean breeding field operations require the support of two research technicians. This project helps to fund a portion of one the technicians.

## **AGRONOMIC MANAGEMENT**

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### **AGRONOMIC AND ECONOMIC CONSEQUENCES OF VARIABLE RATE SEEDING IN MICHIGAN CROPPING SYSTEMS**

Researcher: Dr. Maninderpal Singh, MSU

Grant amount: \$8,000

Description: Variable rate seeding of soybeans has shown promise to reduce seed costs, manage diseases and optimize yields. Additional evaluation at multiple sites in Michigan will help to fine tune the application of this technology.

### **ROLE OF POPULATION DENSITY IN DETERMINING SEED QUALITY AND YIELD IN FOOD GRADE SOYBEAN VARIETIES**

Researcher: Dr. Maninderpal Singh, MSU

Grant amount: \$15,000

Description: The MSU soybean breeding program has developed several specialty soybean lines. Limited agronomic management knowledge is known on these. Soybean yield, quality and profitability will be evaluated on multiple food grade varieties.

### **MANAGEMENT STRATEGIES TO IMPROVE YIELD, QUALITY AND PROFITABILITY IN SOYBEAN UNDER DIFFERENT PLANTING DATES**

Researcher: Dr. Maninderpal Singh, MSU

Grant amount: \$48,404

Description: The third year of this project will help to solidify earlier promising research results which are practical and easy-to-adopt practices. Treatments will include maturity group, seeding rate, seed treatment and planting date.

### **2019 MICHIGAN STATE UNIVERSITY EXTENSION ON-FARM RESEARCH, EDUCATION AND COMMUNICATION PROJECTS**

Researcher: Mike Staton, MSU Extension

Grant amount: \$22,161

Description: The collaboration of eight MSU Extension educators will conduct practical on-farm research and demonstrations including a harvest equipment field day, early maturing soybean variety comparison, northern Michigan variety performance trials, cover crop evaluation, SCN resistance comparison, late season foliar fungicide and nitrogen effect on profitability and effect of inoculations.

### **CENTER FOR EXCELLENCE RE-LOADED – YEAR 2**

Researcher: Lindsay Garrison, Lenawee Conservation District

Grant amount: \$16,000

Description: The conservation district has a long-term history of conducting on-farm research and demonstrations of critical conservation practices such as tillage types. Additional efforts will be placed on nutrient loss reduction tools such as saturated buffers and controlled drainage structures. Educational events and printed materials will be developed to share the results of this work.

## **NUTRIENT MANAGEMENT**

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### **ENHANCING NUTRIENT UPTAKE IN SOYBEAN PRODUCTION SYSTEMS**

Researcher: Dr. Kurt Steinke, MSU

Grant amount: \$43,080

Description: Nutrient uptake can be affected by soil moisture availability and a possible interaction with seeding rates. Mirror trials will be conducted in irrigated and dryland soybeans to evaluate the effect of moisture availability. Multiple fertilizer products and application methods will be used on multiple seeding rates to determine differences in nutrient response and grain yield.

### **EVALUATING SULFUR PRODUCTS AND TIMING IN SOYBEANS BY MANAGEMENT ZONES**

Researcher: B & M Crop Consulting, Inc.

Grant amount: \$21,740

Description: Sulfur content in soil and in the atmosphere are both decreasing over time. This project will evaluate the soybean response to three sources of sulfur (dry ammonium sulfate, dry Kmag, liquid ammonium thiosulfate). Both plant tissue analysis and yields will be compared to measure effectiveness of sulfur fertilizers.

## SOYBEAN CYST NEMATODE

### **MANAGEMENT OF SOYBEAN CYST NEMATODE THROUGH THE USE OF COMPOST AND SCN RESISTANT SOYBEAN VARIETIES**

Researcher: Dr. Marisol Quintanilla Tornel, MSU

Grant amount: \$5,200

Description: Some composts and manures have shown interesting initial results of effects on SCN populations. Compost and manure products, application rates and timing are some of the practical management factors that will be considered.

### **EVALUATION OF THE EFFECTIVENESS OF SOYBEAN SEED TREATMENTS NEMASTRIKE, ILEVO AND BIOSt NEMATICIDE 100 TO PROTECT SOYBEAN YIELDS IN SOYBEAN CYST NEMATODE INFESTED FIELDS**

Researcher: Dr. Marisol Quintanilla Tornel, MSU

Grant amount: \$7,950

Description: Several nematicide seed treatments have been developed recently and are being marketed to soybean growers with various claims. An unbiased evaluation of these products will help to quantify their benefits in Michigan.

### **MANAGEMENT OF SOYBEAN CYST NEMATODE THROUGH ROTATION OF SCN RESISTANT VARIETIES AND OTHER MANAGEMENT PRACTICES**

Researcher: Dr. Marisol Quintanilla Tornel, MSU

Grant amount: \$15,200

Description: Genetic resistance has protected millions of bushels of yield potential over the past two decades, but the effectiveness of the most common resistance source is failing. Other sources of resistance exist and show promise to protect yield and reduce SCN population increases. Strategies of rotating resistance sources and effectiveness will be evaluated at a multi-year research site.

## MISCELLANEOUS PROJECTS

### **CONTROLLED DRAINAGE: A DRAINAGE CONSERVATION PRACTICE TO REDUCE PHOSPHORUS LOSS FROM SUBSURFACE-DRAINED FIELDS**

Researcher: Dr. Ehsan Ghane, MSU

Grant amount: \$15,000

Description: Controlled drainage structures are expected to decrease nutrients leaving fields through tile outlets. This project will quantify the reduction in nitrate and phosphorus loss by measuring tile flow and testing nutrient content in tile water. An additional objective is to determine the fate of nutrients in both drainage systems.

### **2019 MICHIGAN SOYBEAN YIELD CONTEST**

Researcher: Ned Birkey, Spartan Ag Consulting

Grant amount: \$7,600

Description: This project will verify many high soybean yields across the state. This formal system allows growers to see the yield potential that has been achieved by their peers. The format is not considered research but has value in collecting data from successful high yield producers which may be considered by others to improve yields.

### **CASS COUNTY ASSESSMENT PILOT PROJECT**

Researcher: Tritium, Inc.

Grant amount: \$50,000

Description: The Southwest Michigan Farmers for Responsible Water Use is the champion for this project which includes hydrogeologic and surface water data collection. The intent is to inform the decision of permitting the addition of irrigation water withdrawals.



# 2019 Michigan Environmental Hall of Fame Inductee

*By: Noelle Byerley, Executive Assistant*

**C**hris Case, a National Park Service retiree, has been inducted into the 2019 Michigan Environmental Hall of Fame. The Michigan Soybean Promotion Committee (MSPC) nominated Chris for this honor based on decades-long efforts which focused national environmental attention on Michigan.

Chris retired from the National Park Service as the facility manager for the Pictured Rocks National Lakeshore in Munising after 38 years of service. Under Case's leadership, the Lakeshore received the 2001 National Park Service Director's Award for Excellence in Resources and the 2002 White House Closing the Circle Award. The Department of the Interior recognized Case's individual efforts with the 2005 Department of the Interior Environmental Achievement Award for his Environmental Leadership "Road Show" efforts.

During his tenure at Pictured Rocks from 1989-2012, Chris implemented a multi-faceted Environmental Leadership Program. The six components of that program included photovoltaics, green purchasing, recycling, reduced toxins, bio-fluids substitution and environmental practices. These initiatives helped the national lakeshore shrink its environmental footprint, protect natural resources for generations to come and improve worker health and safety.

Chris developed this portion of the lakeshore's Environmental Leadership Program into a model for other parks in Michigan and across the country to help them reduce the environmental impact of their facilities and fleets. Chris took his program "on the road" to promote the Environmental Leadership Program and to educate, advise, assist and encourage other parks, communities, government agencies, businesses, educational institutions and individuals to institute a program of their own.

While at Pictured Rocks, Case led the transition to biodiesel fuel and biobased products, which reduced the lakeshore's use of petroleum. He developed a comprehensive Bio-Lubricants/Fluids Program which included substituting fuels, fluids and lubricants in the fleet operation and maintenance activities with as many vegetable oil based products as possible. The park transitioned all diesel equipment to a B20 blend of biodiesel. Soy-based hydraulic and transmission fluids replaced regular hydraulic oil in the shop vehicle lifts and hydraulic and trans-hydraulic systems in heavy equipment. They switched all two-cycle grounds equipment, pre-mix outboard motor patrol boats and cross-country ski trail groomers to soy-based two-cycle oil. Finally, they changed to soy-based penetrating fluid, parts washing fluids and chassis grease in shop operations, and stocked soy-based hand cleaners and protective barrier creams used by employees.

Chris realized the importance of getting biobased products into users' hands. He acquired funding through the Green Energy Parks Program to purchase biodiesel and biofluids/lubricants that he provided to interested National Parks to encourage and help them get their programs started. To extend this effort to the private sector, Chris partnered with MSPC and acquired soy-based lubricants and biodiesel that he distributed to non-federal agencies, groups and individuals.

Now in retirement, Case continues his passion for educating others about the benefits of environmental best practices and biobased products by working with the United Soybean Board as a "Biobased Coach". "Being included in the company of such dedicated and accomplished environmental champions is indeed a humbling and great honor. Most advances in environmental performance require significant team effort," stated Chris. "I would like to particularly

acknowledge and thank the folks at the Michigan Soybean Promotion Committee for their invaluable assistance in accomplishing many of our successes.”

Case has continued to work with parks, government agencies and others to educate them about the benefits of biobased products and advise them on making the transition in their operations.

Chris Case is in good company at the Michigan Environmental Hall of Fame. To view past inductees, visit <http://www.muskegonlakenaturepreserve.org/hall-of-fame/>.



*Biobased lubricant and soy crank case oil are just a couple biobased products Case introduced to the Michigan park system.*



## Center for Excellence (CfE)

**August 14, 2018**

Lenawee County

Call Lenawee Conservation District

at 517.263.7400, Extension 3

for more information or visit

[www.lenaweeconservationdistrict.org](http://www.lenaweeconservationdistrict.org).



Center for Excellence annual field day is scheduled for Wednesday, August 4, 2019. Registration at 8 a.m. at Bakerlads Farm on Cadmus Road near Clayton. Lunch served at Raymond and Stutzman Farms on Seneca Highway near Morenci.

### 2019 plots and field day tours include:

- 23 years of tillage plots
- Soybean population trials
- Soil health maps and seeding rates
- Nutrient management in survival mode
- 2019 SMaRT on-farm research plots
- Tile outlet phosphorus filters
- Field edge water quality data



**Michigan Soybean Promotion Committee**

*The Soybean Checkoff*  
[michigansoybean.org](http://michigansoybean.org)



# White Mold Control

*By: Mark Seamon, Research Coordinator*

The battle against white mold in Michigan soybeans continues as growers face yield losses that impact some of the highest yielding soybeans each year. This problem often isn't visible until your nice-looking field with prospects of high yields starts to show infected dead stems or whole plants, which stick out against the lush green sea of healthy plants.

Decades of white mold management research have helped us understand that some tools to minimize yield loss are more effective than others. The complexity and variability of this problem has become clearer recently. A system that includes many tools to reduce white mold is the best defense. This system should include variety selection, tillage choices, row spacing, seeding rates, fungicide use, methods to control the growth of the plant and plant defense stimulus.

Missy Bauer of B&M Crop Consulting conducted MSPC sponsored research on this topic at multiple sites in both 2017 and 2018. Her project was set up to evaluate the effect of managing white mold with variable rate seeding (reducing rates in areas that produce larger plants with higher and earlier canopy density and increasing rates in less productive areas), foliar fungicide use and a combination of a foliar fungicide with Cobra herbicide.

The on-farm research was hosted at both irrigated and dryland sites at three farms for two years. Variable rate application (VRA) prescriptions varied between 100,000 and 165,000 seeds per acre in four to six increments, depending on field characteristics. These variable rates were compared to a straight rate population of 150,000 seeds per acre, planted in 15-inch rows. Both of these seeding rate systems were overlaid with treatments of a foliar fungicide (Endura) as well as a herbicide (Cobra) followed by a foliar fungicide.

Treatments:

1. 150,000 seeding rate
2. Variable rate seeding
3. 150,000 seeding rate with 6 oz Endura at R2
4. Variable rate seeding with 6 oz Endura at R2
5. 150,000 seeding rate with 8 oz Cobra at V5 followed by 6 oz Endura at R2
6. Variable rate seeding with 8 oz Cobra at V5 followed by 6 oz Endura at R2

Data collection and analysis for multiple yield impacting factors for each of the treatments included stand counts, white mold incidence, pods per plant, seeds per plant, seed size, nodes per plant, nodes with pods, 1st node with pods from bottom of plant and pods on branches. One interesting effect was found in seed size where the Endura application increased seed size. (Figure 1) Missy Bauer stated, "The seed size increase seems to be the result of the stay-green-effect caused by the fungicide, which extends the time for seed to fill."

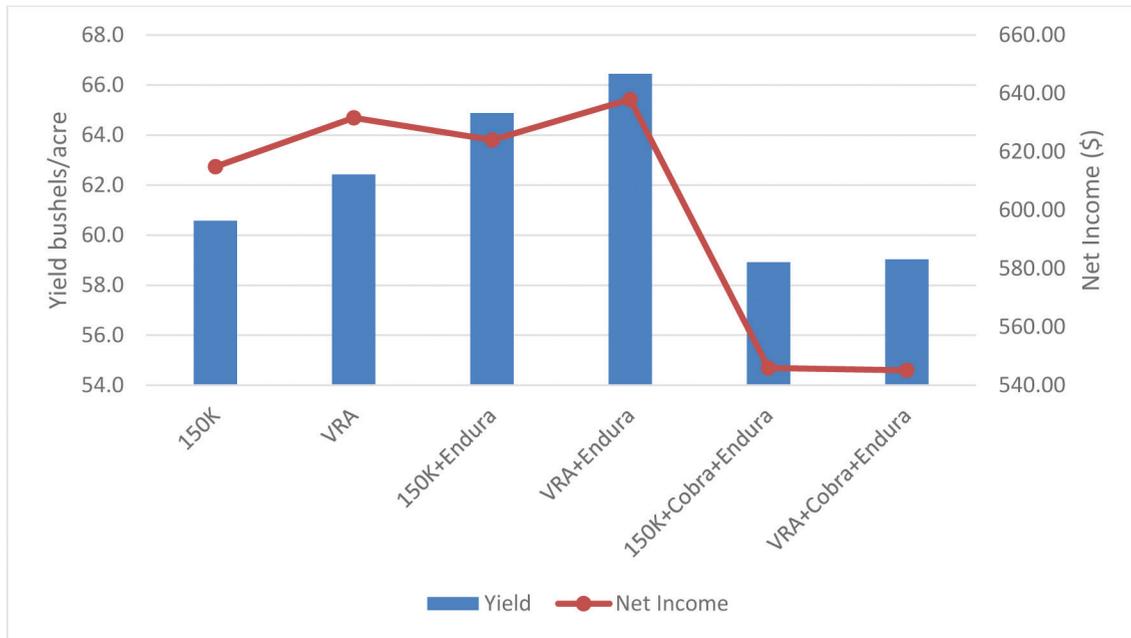
Figure 1

Treatment	Seeds per pound	Comments
Seeding rate	2702	base seed size
Endura	2589	improved plant health from fungicide during seed fill
Cobra fb Endura	2795	plant stress response

This change in seed size appears to be the most significant factor that affected soybean yield and net income. The incidence of white mold was reduced with both the Endura and Cobra followed by Endura treatments, as compared to no chemical white mold treatment. The white mold pressure in the six trials was relatively low, which likely affected the response to the treatments. The tools of reducing seeding rates and Endura applications resulted in increased yields and net income when all trials were averaged. While there was a modest yield increase in 2017, these treatments did not increase yield enough to pay for the treatments in that year.

The average data across both years and all sites indicates the variable rate seeding with a fungicide application was the highest yielding and resulted in the highest net income across all treatments. The treatments which included Cobra showed a slight yield loss and, more significantly, net income loss due to product and application costs. The Cobra averages were influenced by a 2018 site that had significant crop injury and yield reductions. This response was not consistent but does indicate a risk with this product.

Figure 2. Yield and net income effect of white mold treatments



This series of trials is indicative of the complexity of managing white mold in soybeans. The disease pressure within fields can be estimated based on history and other management tools being used but the environment each year holds a trump card. This research is consistent with other research in that it shows the opportunity to get economic returns in some situations but not consistently. The strategy of using multiple defenses (reduced populations in productive areas, use of fungicides, increased crop residue on soil surface, increased row spacing and variety selection) against white mold remains a prudent plan. In cases where disease pressure is higher, more intensive tools such as Cobra may be warranted but the risk of a negative crop response must be considered. Missy Bauer commented, "In our experience, white mold pressure is highly influenced by soybean populations. Therefore, implementing variable rate technology is a great low risk way, with proven economics, to manage white mold."

Additional resources from MSPC funded white mold research can be found online:

Video: <https://www.youtube.com/watch?v=UupXXZ4kVfA>

On-farm research report: <http://michigansoybean.org/wp-content/uploads/2018/12/2017-and-2018-White-Mold-Foliar-Fungicide-Comparison-Trial.pdf>

*Cobra application on V5 soybeans.*



# New Herbicide-Resistance Technologies Increase Weed Control Options in Soybean

By: Christy Sprague, Professor and Weed Extension Specialist, MSU

**W**eed control continues to be a challenge as glyphosate-resistant weeds spread throughout Michigan. In addition to glyphosate-resistance, several weed species are also resistant to other soybean herbicides leaving very few, if any options for weed control in Roundup Ready and non-GMO soybean. Planting soybeans with different herbicide-resistance traits provides farmers with additional and/or alternative herbicide options for control of glyphosate-resistant weeds. LibertyLink and Roundup Ready 2 Xtend soybeans are two of the technologies that Michigan farmers have used for alternative weed management options. However, as the 2019 season approaches there are two new soybean technologies available to Michigan farmers, LibertyLink GT27 (full commercial launch) and Enlist E3 (limited seed availability) soybean.

## **ALTERNATIVE SOYBEAN TECHNOLOGIES AND THE HERBICIDES THAT THEY ARE RESISTANT TO:**

- LibertyLink soybean: glufosinate (i.e., Liberty)
- Roundup Ready 2 Xtend soybean: dicamba (XtendiMax, Engenia, FeXapan) and glyphosate
- LibertyLink GT27 soybean: glufosinate and glyphosate
- Enlist E3 soybean: glufosinate, glyphosate and 2,4-D choline (Enlist One)

What is unique about the LibertyLink GT27 and Enlist E3 soybean technologies is that they will be the first commercialized soybean varieties with both glufosinate (i.e., Liberty) and glyphosate resistance. This leads to many questions on how farmers should use glufosinate and/or glyphosate for weed control with these new traits. Since there will only be limited availability of Enlist E3 soybean, I will mostly be addressing how glufosinate and glyphosate can be used in LibertyLink GT27 soybean. One thing to remember is that glufosinate and glyphosate are two very different herbicides and there are several keys to making each one of these herbicides work to their greatest potential. It is important to review what these keys are prior to using glufosinate and/or glyphosate.

## **QUESTIONS ABOUT GLUFOSINATE AND GLYPHOSATE USE IN LIBERTYLINK GT27 SOYBEAN:**

- **Can I tank-mix Liberty (glufosinate) with glyphosate and apply it postemergence for weed control?** Research on tank-mixtures of Liberty (glufosinate) and glyphosate have provided mixed results. In some cases, these combinations have resulted in slight antagonisms of certain weed species, especially weeds that are harder to control with glufosinate (grasses and perennial weeds). However, in the case of controlling glyphosate-resistant species, in particular glyphosate-resistant Palmer amaranth and waterhemp, the addition of glyphosate does not appear to antagonize glufosinate's effectiveness on these species.
- **What are the most effective weed control strategies when planting LibertyLink GT27 soybean?** What we do know for sure is that one application of Liberty (glufosinate) or glyphosate alone will not consistently provide season-long weed control. It is important to use a systems approach for weed management, regardless of the herbicide-resistant soybean technology.

**WEED MANAGEMENT STEPS RECOMMENDED IN LIBERTYLINK GT27 SOYBEAN:**

1. Consider planting soybean in narrow rows. Early canopy closure from planting soybean in narrow rows will help improve season-long weed control.
2. Control emerged weeds prior to planting. This can be done either with tillage or an effective preplant burndown herbicide program in no-till soybean.
3. Use of an effective soil-applied (preemergence) herbicide is critical. Product choices should be based on the weeds that need to be controlled, as well as soil and rotation restrictions. For a complete listing of soybean herbicides with residual weed control, consult Table 2A in the MSU Extension publication E-434 "Weed Control Guide for Field Crops".
4. Choice of postemergence herbicide should be based on what weeds you are trying to manage.
  - a) If using Liberty (glufosinate) postemergence, apply when weeds are 2-3 inches tall. We recommend adding ammonium sulfate (AMS) at 8.5 lb/100 gal or the equivalent of a liquid AMS product.
  - b) If using glyphosate postemergence, apply when weeds are less than 4 inches tall. The addition of AMS at 17 lb/100 gal is also recommended. It is also important to consult the glyphosate product label and make sure it can be used in either glyphosate-resistant or glyphosate-tolerant soybean. Remember glyphosate will not control glyphosate (Group 9)-resistant weeds.
  - c) Remember combinations of Liberty (glufosinate) and glyphosate may be antagonistic on certain species.
5. Tank-mixtures with postemergence Liberty (glufosinate) or glyphosate. While this is not always needed, several soil-applied residual herbicides (i.e., Dual II Magnum, Warrant, Zidua or Outlook) can be tank-mixed with either Liberty (glufosinate) or glyphosate and applied postemergence for extended residual control.
6. Follow up with an additional application of Liberty (glufosinate) or glyphosate if needed. It is important not to exceed the maximum yearly amounts or maximum application timings for each herbicide.

For more information on weed control in soybean consult the *2019 MSU Weed Control Guide for Field Crops* and visit [www.MSUweeds.com](http://www.MSUweeds.com). Remember to always read the herbicide label.

Control of glyphosate-resistant waterhemp in LibertyLink GT27 soybean. This figure shows the importance of using an effective soil-applied (PRE) herbicide at planting prior to a postemergence Liberty (glufosinate) application for season-long waterhemp control.



# MSA and MSPC Testify Before the

*By: Kathy Maurer, Financial and International Marketing Director*

February and March were busy months for the Michigan soybean office and included opportunities to testify before both the Michigan House and Senate Ag Committees on behalf of the soybean industry. There are over 50 new legislators following last November's election and having the opportunity to introduce our industry to those who will put policy in place is important. Being able to voice our concerns is imperative as the soybean industry and agriculture move forward. People are getting farther and farther removed from the farm. Putting a face to farming will continue to give a voice to farmers across Michigan. Brian McKenzie, Laurie Isley and Matt Stutzman all testified on behalf of the Michigan Soybean Association (MSA) and the Michigan Soybean Promotion Committee (MSPC).

"Finding talented help is a challenge. A young person doesn't need a four-year degree to make a good living. Many trades are well-paying and well-respected such as HVAC, welding, CNC, diesel mechanics, etc. and now 12 community colleges across Michigan offer certificates in ag through Michigan State University. We need skilled workers on the farm. Agriculture

today is not your father's ag," said Brian McKenzie, MSA president. He asked the committee how we could encourage young people to be involved in these trades. Brian continued, "The short line railroads are important to all industries in Michigan. They are in need of support to maintain or expand the rail lines. They are a vital link to the main railroads and provide a competitive edge in transportation, taking pressure off the roads."

Brian's final thoughts included concerns related to reliable infrastructure including roads, bridges, availability of internet and natural gas access in rural communities. Brian is a farmer in Cassopolis where he raises hogs, soybeans and corn.

"My farm is located in the Lake Erie watershed. We have been dealing with the challenges of the algal bloom for years," said Laurie Isley, MSPC president. "It's important to use science in our decisions and not blame the farmers for all the challenges. We all want clean water but there is more going on here."

Laurie continued, "Additionally, fair trade agreements are important for the future of our industry. Before the tariffs were implemented, China



*Left: Brian McKenzie, MSA president, testifying before the House Ag Committee. Below: Matt Stutzman, MSA treasurer and ASA representative, testifying before the Senate Ag Committee.*



# House and Senate Ag Committees

purchased one out of every three rows of soybeans grown in the United States. The lack of trade with China has devastated the pricing structure.”

Laurie’s final thoughts were on the importance of keeping her farm sustainable. Many farms are multi-generational. How can we make sure farms are viable for future generations? Laurie is a farmer in Palmyra where she raises soybeans, corn and wheat with her husband Jim and son Jake.

“Supporting biodiesel is important to reduce our dependence on foreign oil and support our farmers,” said Matt Stutzman, National Biodiesel Board representative and MSA treasurer. “We care about the environment and protecting our farms for the future.”

Matt is a farmer from Adrian where he raises corn, soybeans and red winter wheat with his cousin Brian, father Bill and two uncles Jim and Ed.

As a whole, we wanted the House and Senate Ag Committees to know that farmers care and are problem solvers. Farmers invest their checkoff dollars in research so they can continue to improve upon agronomy, farm management, water quality and being good neighbors. We also shared that the

Michigan soybean office is available a resource as the committees move forward with their recommendations for policy.

In addition, MSA asked both committees to sign a letter to the Administration highlighting the urgency needed to come to an agreement with our trade partners. We need agreements in place with China, Mexico and Canada as the largest customers of U.S. soy. Secured agreements will help remove barriers for new markets as well.

It’s important to take the time to build a relationship with our legislators. They are making policies which will affect how farmers operate. Invite your legislators to your operation and explain the challenges you and other Michigan farmers are facing. Education and advocacy are important to the future of farming, now more than ever.

We also want to thank Justin Clement from The Frederick Group for facilitating our time with both committees.

Call your representatives today and get involved – for your future.

*Right: Laurie Isley, MSPC president, testifying before the House Ag Committee.  
Below: Kathy Maurer testifying before the House Ag Committee.*





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**ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS.** Soybeans with Roundup Ready 2 Xtend® technology contain genes that confer tolerance to glyphosate and dicamba. Glyphosate herbicides will kill crops that are not tolerant to glyphosate. Dicamba will kill crops that are not tolerant to dicamba.

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