Summer 2015

Michigan Soybean News©

Volume 7 - Issue 3

Do You Need to SCN Type Test?

Michigan Soybean Association, PO Box 287, Frankenmuth, MI 48734

NON-PROFIT
US POSTAGE
PAID
PERMIT 244
MIDLAND, MI 48640

A publication of the Michigan Soybean Association

Michigan Soybean News

Summer 2015
Volume 7 - Issue 3

Editorial Staff

Gail Frahm
Editor
Executive Director
gfrahm@michigansoybean.org

Kathy Maurer
Financial and International
Marketing Director
kmaurer@michigansoybean.org

Keith Reinholt
Special Projects Coordinator
reinholt@michigansoybean.org

Noelle Byerley
Executive Assistant
nbyerley@michigansoybean.org

Mark Seamon
Research Coordinator
mseamon@michigansoybean.org

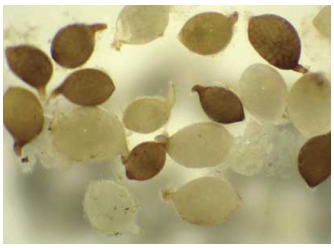
Brian Stiles
Research Technician
bstiles@michigansoybean.org

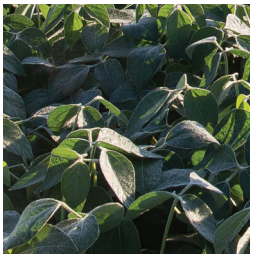
Michigan Soybean Association
PO Box 287
Frankenmuth, MI 48734
Phone: 989.652.3294
Fax: 989.652.3296
soyinfo@michigansoybean.org

Sales

Tim Rogers - Regional
Phone: 517.323.6543
trogers@michfb.com

J.L. Farmakis Inc. - National
Phone: 203.834.8832
bill@jlfarmakis.com





Circulation: 14,500
Michigan Soybean News is published quarterly.

Comments and suggestions can be submitted to:
Michigan Soybean Association
PO Box 287
Frankenmuth, MI 48734
soyinfo@michigansoybean.org

Michigan Soybean Association's Mission Statement
To improve and advocate for the Michigan soybean industry.

From the MSA Secretary...

Dan Keenan

On March 17, I participated in the ASA Hill Visits in Washington, D.C. I teamed up with fellow MSA director and our ASA director, Matt Stutzman, to speak with Michigan's legislative leaders about current issues that impact our soybean industry.

While we were able to speak with a few members of Congress, a lot of our meetings were held with their legislative staff. By the end of the day, both Matt and I left feeling our talks went very well and were quite productive.

Some key issues that we spoke about included current biotech and GMO labeling requirements and how the ASA supports a federal labeling standard to prevent a patchwork of state standards. We emphasized the importance of trade expansion, in particular the importance of passing Trade Promotion Authority along with the Trans-Pacific Partnership. We stressed the importance of the Renewable Fuel Standard which includes biodiesel and the impact it has on rural economies and agriculture as a whole. We spoke about the importance of tax issues like Section 179, bonus depreciation and cash-based accounting. Transportation and infrastructure were important topics, including a continuation of the hours of service exemption for agriculture, increased weight limits and an increase in funding for the Inland Waterways Trust Fund.

Representatives and their staff we spoke to about these issues included: Nick Bush from Rep. Fred Upton's office, Rep. Tim Walberg and his Legislative Director Jonathan Hirte, Grant Colvin from Sen. Stabenow's office, Andrew Block from Rep. Michael Bishop's office, Lindsay Esson from Rep. Candice Miller's office, Ryan Tarrant and Katelyn Wilcox from Rep. John Moolenaar's office, Jordan Dickinson from Rep. Dan Kildee's office, Michelle Lane from Rep. Dan Benishek's office, Kevin Rambosk from Rep. Debbie Dingell's office, and Rep. Dave Trott and his Legislative Assistant Bridget Sobek. I took particular pleasure speaking with the offices of Representatives Moolenaar, Kildee and Miller as they represent the districts that I represent in the Michigan Soybean Association: Saginaw, Bay, Arenac and Tuscola counties.

During my journey home, I realized two things. First, a short layover in Detroit and a flight delay made me realize while running across the entire airport that I am out of shape. I may have to stop using our elliptical as a hat rack and actually run on it. Second, although these trips can be an inconvenience this time of year with planting quickly approaching, they are very beneficial and very much needed. These visits are exactly what a membership in the MSA is all about. Making sure the Michigan soybean farmer, along with the American soybean farmer, has a voice at the table when it comes to policy that directly impacts our way of life.

Matt and I plan to return to D.C. in July. If you have any issues or topics to pass along please feel free to get in touch with either one of us. I hope everyone has a safe and successful year.

Regards,

Dan Keenan, MSA secretary

Michigan Soybean Association Board of Directors

District 1
Brian McKenzie
17645 McKenzie St.
Cassopolis, MI 49031
(C) 269.587.0062

District 2
Gary Parr
4949 Wheaton Rd.
Charlotte, MI 48813
(C) 517.231.1987

District 3
Matt Stutzman, *ASA Director*
4211 Treat Hwy.
Adrian, MI 49221
(P) 517.260.1720

District 4
Jay Ferguson, *Vice President*
2505 Wellman Line Rd.
Brown City, MI 48416
(P) 810.346.3050

District 5
Dan Keenan, *Secretary*
19240 Ederer Rd.
Merrill, MI 48637
(P) 989.643.7019

District 6
David Williams, *President*
8604 W. Allan Rd.
Elsie, MI 48831
(P) 989.847.6044

District 7
Earl Collier
2574 — 127th Ave.
Allegan, MI 49010
(P) 269.793.7340

At-Large
Bill Spike, *Treasurer*
8295 Seymour Rd.
Owosso, MI 48867
(C) 989.277.3167

Heather Feuerstein
524 Beresford St.
Ionia, MI 48846
(C) 616.808.1095

SCN (HG) Type Testing: What's the Deal?

By: Fred Warner and Angela Tenney, with Dr. George Bird, Diagnostic Services, Michigan State University

The soybean cyst nematode (SCN), *Heterodera glycines* (HG), is a major limiting factor in soybean production worldwide. Growers can typically expect to lose at least half of their yield potential if they plant SCN-susceptible soybean varieties in fields where SCN exits. In Michigan, SCN was first detected in Gratiot County in 1987. It is now documented to exist in 40 counties.

A recent survey conducted by Michigan State University nematologists and results from the Michigan Soybean Promotion Committee-sponsored SCN sampling program indicate about half of the fields used for soybean production in the state are infested with SCN. Estimates from the MSU Diagnostic Lab reveal that growers who use the sampling program and follow the recommendations provided with their results may receive $1,400,000 to $5,800,000 in extra revenue statewide.

SCN was first found in the U.S. about 65 years ago. Not long after it was discovered, it became apparent that populations of the nematode differed in their ability to attack resistant varieties. As a way to categorize or classify differences in these populations, "races" of SCN were identified. The race concept was used by nematologists and plant breeders for roughly 30 years until it was replaced by HG type testing ("HG" for *Heterodera glycines*, the scientific name for SCN). The major advantage of type testing over the race concept is that type testing includes all commercially available sources of SCN resistance whereas the race test did not.

HG type testing is done by comparing the development of a population of SCN on seven indicator lines with resistance to the nematode and a susceptible variety. Some sources of resistance used in HG type testing are virtually impossible to find. About 98 percent of all commercially available SCN-resistant varieties in maturity groups 0–3 have one source of resistance, PI 88788. For that reason, many labs that conduct HG type testing have modified the tests to include only three indicator lines: PI 548402 (Peking), PI 88788 and PI 437654, as well as a susceptible variety. MSU has given this smaller or mini-test the title "SCN type testing."

HG or SCN type testing should aid growers in variety selection. If a grower has a population of SCN that develops well on soybeans with PI 88788 resistance, yields will eventually be compromised as nematode population densities increase. Because so many SCN-resistant soybean varieties have this source of resistance, having a type 2 population (one that develops on the PI 88788 indicator line) is potentially very undesirable. Varieties with PI 88788 resistance are highly variable in their abilities to limit SCN development. So if a population of SCN develops well in the lab test where the pure line is used, chances are it will develop even better on commercial varieties. In cases like these, where growers have type 2 SCN

populations, they should seek out varieties with Peking or PI 437654 resistance because they are better choices for managing this SCN type.

The switch from races to SCN types has resulted in some confusion and possible frustration for growers. Breeders and seed dealers have been slow or reluctant to adopt the type testing system and still often publish their varieties with resistance to certain races in their seed catalogs with no mention of the sources of resistance. Growers must become familiar with and attempt to learn the sources of resistance when choosing SCN-resistant varieties. Chances are that any SCN-resistant variety used in Michigan has the PI 88788 source of resistance.

Where We Were

In Michigan, we have never conducted a large race or HG (SCN) type survey. But in 1992 and 1993, we did two fairly large surveys for SCN in an attempt to better understand its distribution in Michigan at that time. As part of the survey in 1992, we did race tests for 20 fields.

We learned that races 1, 3, 5, 6 and 14 existed in Michigan. Race 3 was dominant; 60 percent (n = 12) of the populations tested were this race. Race 3 was regarded as an avirulent race because it did not develop on any of the resistant differential lines used in the race tests. Therefore, growers with race 3 populations could choose any SCN-resistant varieties and expect them to minimize SCN development and provide good yields.

Race 1 was second most dominant at 15 percent. Races 5 and 6 came in at 10 percent and race 14 at 5 percent (n = 1). We tested populations from Gratiot, Monroe, Saginaw, Shiawassee and Van Buren counties at that time. SCN was known to occur in fewer than ten Michigan counties in 1992. Races 5 and 14 were identified only in Monroe County. SCN probably followed different pathways into Michigan, but this suggested some of the Monroe populations were unlike the others found in the state. We also found races 3 and 6 in Monroe County.

Where We Are

In 2014, MSPC agreed to pay for SCN type testing using checkoff funds. This was the first year the test was made available free of charge to growers. As a result, 33 SCN type tests were performed, as well as 4 HG type tests. The conclusions drawn, although still based on small sample sizes, indicate that SCN populations have changed dramatically over the past 20 years.

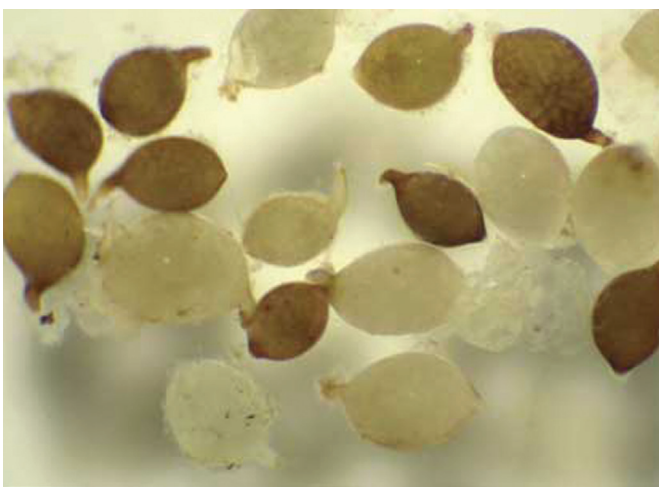
Seven indicator lines and one susceptible variety are used when conducting HG type tests. For SCN type testing, only three of the lines are used. The lines are shown in the table below.

Indicator Lines	HG Type Test	SCN Type Test
(1) PI 548402 (Peking)	*	*
(2) PI 88788	*	*
(3) PI 90763	*	
(4) PI 437654	*	*
(5) PI 209332	*	
(6) PI 89722	*	
(7) PI 548316 (Cloud)	*	

The average number of SCN females that develop on each of these indicator lines (three plants of each are used) are compared to the number found on the susceptible check variety to generate Female Indices (F.I.). For example, if 10 SCN females are found on average on the Peking plants and 200 on average are recovered from the susceptible plants, the Female Index is 5 percent (10/200 X 100). When the F.I. is less than 10 percent, that line is considered resistant to the population of SCN tested. If the F.I. exceeds 10 percent for any of these lines, the type is designated by the number of the line. Thus, an SCN population typed as 2.5.7 had Female Indices greater than 10 percent on PI 88788 (2), PI 209332 (5) and PI 548316 (7). The F.I.s for the other four indicator lines were less than 10 percent.

The quantitative information provided by type tests is important. Below are results of two type tests performed in 2014 where both populations tested as type 1.2. They were given these designations because the Female Indices exceeded 10 percent for the both the Peking (1) and PI 88788 (2) lines.

Photo Credit: Iowa State University



SCN Type 1.2, Test 1

Mean numbers of SCN females and cysts per line and female indices

	X	Female Index*
Archer (susceptible)	162.00	
(1) PI 548402 (Peking)	16.33	10.1% (+)
(2) PI 88788	42.00	25.9% (+)
(4) PI 437654	0.00	0.0% (-)

SCN Type 1.2, Test 2

Mean numbers of SCN females and cysts per line and female indices

	X	Female Index*
Archer (susceptible)	402.00	
(1) PI 548402 (Peking)	44.00	10.9% (+)
(2) PI 88788	270.00	67.1% (+)
(4) PI 437654	1.00	0.0% (-)

* The Female Index (F.I.) is calculated by comparing the number of females and cysts produced on each resistant line to the number produced on Lee, expressed as a percentage. A + rating is given if the F.I. is 10 percent or more; whereas a – is given if the F.I. is less than 10 percent. The F.I. is used to determine the HG type.

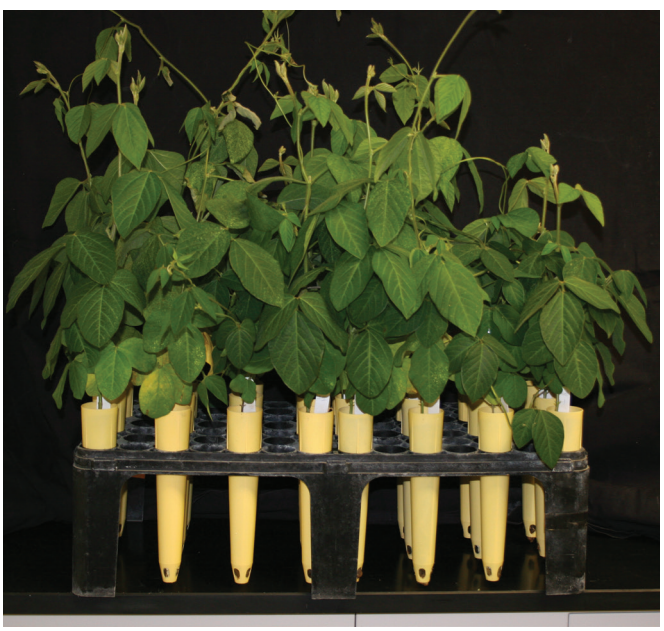


Photo Credit: Michigan State University

There is one major difference between these two populations, the female indices for the PI 88788 lines. For test 1, the F.I. is 25.9 percent for 88788, indicating this source is still moderately resistant to this SCN population. However, the F.I. for 88788 in test 2 is 67.1 percent, indicating this source is susceptible to this population of SCN. When a population of SCN occurs that develops as well on the PI 88788 line as the susceptible check, this is a major concern since nearly all SCN-resistant soybean varieties have this source of resistance.

In 2014, MSPC paid for 33 SCN type tests. Of those, one SCN population was type 0 (race 3), one population was type 1 (possibly race 14), 10 populations were type 1.2 (possibly race 4) and the remaining 21 were type 2 (most likely race 1). The HG type tests revealed three type 2.5.7 populations and one type 2.7 population.

Of the 33 SCN populations tested, 31 developed well enough on the PI 88788 line (Female Index greater than 10 percent) to indicate this source was not as resistant to these populations as desired. Under the race concept, these populations might be considered race 1. The race tests done in the '90s revealed race 1 was the second most dominant race in Michigan but only 15 percent of the SCN populations were deemed this race. Now, it appears race 1 is dominant and possibly up to 90 percent of our SCN populations (at least of the ones we tested) are type 2 (race 1) and type 1.2 (possibly race 4). The same phenomenon has been observed in other states in the North Central region of the United States.

Implications

A soybean variety trial was conducted at the Southwest Michigan Disease Research Center in Decatur in 2014. This site is infested with SCN as well as the sudden death syndrome pathogen, *Fusarium virguliforme*. Previous SCN type testing has revealed type 2 exists at this location.

In 2014, 29 Roundup Ready SCN resistant varieties were grown. Of those, 22 had PI 88788 resistance, three had both Peking and PI 88788 resistance and only four had just the Peking source of resistance. The varieties with 88788 resistance collectively averaged 43.1 bu/acre, the ones with both sources 48.6 bu/acre and the Peking cultivars produced an average of 53.3 bu/acre. SCN numbers increased 485 percent from planting to harvest over all 22 PI 88788 varieties, 444 percent on the three varieties with both Peking and PI 88788 resistance, but only 170 percent on the four Peking cultivars. Actually, the SCN numbers at harvest were lower than at planting under two of the Peking

varieties; that result indicates solid resistance. No SCN-susceptible varieties of soybeans were included in the trial.

Yields ranged from 13.5 to 75.0 bu/acre over the 116 plots (29 varieties X 4 replications). Yields exceeded 50 bu/acre for 50 percent of the Peking plots, 50 percent of the Peking/PI 88788 plots, but only 18 percent of the plots where PI 88788 cultivars were grown. No plots where these 88788 varieties were planted yielded better than 50 bu/acre if at-plant SCN counts exceeded 1680 SCN eggs and juveniles. It is fairly obvious that the yield potentials of many of these varieties with PI 88788 resistance were not met due to the fact roughly 40 percent of the plots had at-plant population densities of SCN above 1680. These results were somewhat expected because of the presence of a type 2 SCN population.

Very few varieties with Peking resistance are commercially available. These varieties often do not yield well in the absence of SCN compared to other varieties. However, they are not recommended for sites not infested with SCN. The data for the 2014 variety trial clearly indicate this source of resistance is highly effective in situations where a type 2 SCN population exists. The SCN population did not increase as much on the Peking varieties as on the 88788 cultivars and the Peking beans averaged 10 bu/acre more soybeans. In any arguments about their benefits, these data suggest game, set, match, advantage Peking.

All of this seems to suggest that growers must assume they have type 2 SCN populations in their fields. If so, varieties with PI 88788 resistance may not provide yield boosts for as long as they may have 20 or so years ago. Closely monitoring yields and SCN population densities are probably more important than ever to avoid serious problems.

Requirements for SCN Type Testing

To conduct an SCN type test, 24,000 SCN eggs (12 plants x 2,000 eggs each) are required. If the lab recovers 2,500 eggs in the initial soil test when processing 100 cm³ (1/5 pint) of soil, they need two pints to obtain the 24,000 eggs necessary for type testing. Many bags used for soil nutrient tests do not hold two pints of soil. If you suspect an SCN problem and want a type test done, please submit soil in one-quart bags to ensure a large enough quantity to obtain the required number of SCN eggs. The bags shown below are usually inadequate if SCN type testing is desired because they do not hold enough soil.

Photo Credit: Michigan State University

Fred Warner and Angela Tenney at the MSU Plant Soils and Microbial Sciences Department Agronomy Farm

Equipping and Operating Sprayers to Control Insects and Diseases in Soybeans

By: Mike Staton, MSU Extension Soybean Educator

To maximize insect and disease control in soybeans, insecticide and fungicide droplets need to penetrate large and dense soybean canopies and thoroughly cover the leaves and stems. This article outlines how to achieve those goals.

Spray volume has the greatest impact on canopy penetration and leaf coverage. Spray volumes of 15 gallons per acre are required when applying insecticides and fungicides to soybeans through growth stage R3 (pod development). After R3, applying 20 gallons per acre will improve coverage.

Droplet size is the second most important factor affecting canopy penetration and leaf coverage. Research has shown that fine to medium droplets having volume median diameters (VMDs) ranging from 200 to 350 microns will provide optimal canopy penetration and leaf coverage.

All nozzle manufacturers use a common spray-quality classification system that divides droplets into eight droplet size categories. The colors listed in Table 1 should not to be confused with the color of the nozzle itself. The colors listed in the table refer to the droplet size range. The color of a nozzle refers to its capacity.

Table 1: American Society of Agricultural and Biological Engineers (ASABE) standard 572.1 (spray quality categories)

Droplet Category	Symbol	Color
Extremely Fine	XF	Purple
Very Fine	VF	Red
Fine	F	Orange
Medium	M	Yellow
Coarse	C	Blue
Very Coarse	VC	Green
Extremely Coarse	XC	White
Ultra Coarse	UC	Black

The source of Table 1 was Droplet Chart/Selection Guide, Virginia Tech, Publication 442-031, P. Hipkins and R. Grisso, https://pubs.ext.vt.edu/442/442-031/442-031_pdf.pdf.

Ground speed is important because it affects spray volume and vertical droplet velocity. Ground speeds of less than 10 mph are recommended.

Photo Credit: United Soybean Board

Nozzle pressure affects droplet size, spray volume and droplet velocity. In general, nozzle pressures of 40 psi are recommended. Higher pressures are okay as long as the optimal droplet size spectra is produced.

Nozzle pattern is an important factor. Research conducted by Erdal Ozkan, Ph.D., at the Ohio State University showed that nozzles producing a single flat-fan pattern provided better canopy penetration than nozzles or combinations of nozzles producing a twin-fan pattern when used in large and dense soybean canopies. Venturi or air-induction nozzles should not be used for insecticide and fungicide applications.

Consider spray volume, droplet size, ground speed and operating pressure when selecting spray nozzles.

Select nozzles that produce droplet sizes near the fine end of the medium (yellow) category and deliver 15 gallons per acre at your desired ground speed and operating pressure.

Table 2 shows that a sprayer traveling at 10 mph equipped with XR11005 nozzles and operated at 40 psi will deliver 14.9 gallons per acre while producing fine to medium droplets. All nozzle manufacturers provide similar information for each of their nozzles. Note that the color of the XR11005 nozzle is brown and it produces droplets in the medium (yellow) to fine (orange) categories depending on the operating pressure.

The source of Table 2 was TeeJet Technologies Catalog 51, Spraying Systems Co., http://www.teejet.com/media/408987/cat51-us_lores_all.pdf.

Boom height controls spray pattern uniformity and droplet velocity. Operating the spray boom at the correct height is essential. Ozkan recommends setting the target area midway between the lowest leaves on the plant and the top of the canopy when spraying large, dense soybean plants.

Follow the manufacturer's recommendations for your nozzle spacing and nozzle spray angle to determine how high to set your boom above the target area.

Table 2: Relationship between spray volume, ground speed, pressure and droplet size for Teejet XR8005 and XR11005 nozzles

				Speed		
		Droplet Size*		6 MPH	8 MPH	10 MPH
Tip	PSI	80°	110°	Gallons/Acre		
XR8005 and XR11005	15	C	M	15.3	11.5	9.2
	20	C	M	17.3	13.0	10.4
	30	C	M	21.0	16.0	12.8
	40	M	**M**	25.0	18.6	**14.9**
	50	M	M	28.0	21.0	16.6
	60	M	F	30.0	23.0	18.1

*C=coarse, M=medium, F=fine

For example, a boom equipped with 110° flat-fan nozzles spaced 20 inches apart should be operated 16 to 18 inches above the target area. This would be 7 to 9 inches above the top of the canopy in 24-inch tall soybeans, assuming the lowest true leaves are 6 inches above the ground.

Taking the time to equip and operate your sprayer properly will improve insect and disease control in large and dense soybean canopies. Follow these tips to help maximize your soybean profits.

Center for Excellence (CfE)

August 19, 2015
Lenawee County

More information at Lenawee Conservation District 517.263.7400, ext 3

2015 plots and field day tours include:

- Observe plots and projects
- Observe a 2-stage ditch in final construction stages
- Information from *CfE on the Road* will be presented at one of the sessions
- Zone drainage demonstration
- Quick roots in corn
- Highboy application of cover crop demonstration
- RUP and CCA credits

Lenawee Conservation District Center for Excellence annual field day is scheduled for Wednesday, August 19, 2015. This year will begin with registration at 8 a.m. at the Bakerlads Farm on Cadmus Rd. near Clayton. Lunch will be at the Raymond and Stutzman Farms on Seneca Hwy. near Morenci.

Michigan Soybean Promotion Committee
www.michigansoybean.org

Improve Soybean Profits: Make Timely Postemergence Herbicide Applications and Scout for Weeds

By: Christy Sprague, Professor and Weed Extension Specialist, Michigan State University

Timing is Everything

Early season weed competition may be one of the biggest contributors to unseen yield losses in soybeans. Appropriately timing postemergence herbicide applications is critical to preserving crop yields.

Several studies have shown that delaying postemergence weed-control strategies can substantially reduce yield. In addition to reducing yields, delaying postemergence applications can lead to larger weeds that are more difficult to control.

This is especially important as herbicide-resistant, including glyphosate-resistant, weeds are showing up on more and more Michigan fields. Many of these fields may require applying postemergence herbicide tank mixtures to effectively control certain weed species. It is important to avoid exceeding the maximum weed heights or stages for the herbicides being used to control a certain species.

For example, if a herbicide like Flexstar is used to control common ragweed, the maximum height for effective control is the four-leaf stage. Maximum weed heights for individual postemergence herbicides for use in soybeans can be found on the herbicide label or in Table 2H of the 2015 MSU Field Guide for Field Crops found at http://www.msuweeds.com/publications/weed-control-guide.

While some herbicides may control larger weeds, remember that even if these larger weeds are controlled, early season weed competition and soybean yield loss has already occurred and cannot be reversed. Delaying postemergence herbicide applications robs soybeans of maximum yield potential, resulting in reduced profits.

Research conducted in Ontario has shown that delaying postemergence herbicide applications more than 4 weeks after soybean emergence can reduce yield about 0.75 bu/acre/day. In research conducted by MSU, if weeds were allowed to reach 6 inches before control, yield was reduced in narrow-row soybeans. Depending on when the yield loss occurred, soybean yield was reduced between 2.5 and 5.5 bu/acre/day. The economics of this adds up quickly.

Considering these crop-loss estimates, delaying herbicide applications 3 days would cost $71.25 to $156.75/acre at a soybean price of $9.50/bu. Waiting to make postemergence herbicide applications can cost you money. Therefore, it's important to follow the recommendations for controlling weeds before they exceed 4 inches tall in narrow (7.5- and 15-inch) row and 6 inches tall in 30-inch row soybeans to avoid yield losses from early season weed competition.

While some herbicides may control larger weeds, remember that even if these larger weeds are controlled, early season weed competition and soybean yield loss has already occurred and cannot be reversed.
—Christy Sprague

Scouting for Weed Escapes

The era of glyphosate-resistant and multiple-resistant weeds in Michigan makes scouting for weed escapes after postemergence herbicide applications a priority for all growers. Although not all weed escapes are herbicide-resistant, scouting for weed-control failures and escapes provides an opportunity to manage weeds before they are too large for additional control options.

1. Scouting for weed escapes should be done within two weeks after each postemergence herbicide application. If you find weed escapes, ask yourself the following questions. Was the weed present at the time of the postemergence herbicide application?
2. Was there only one weed species that escaped control?
3. Was the herbicide used labeled for the weed species?
4. At the time of application, was the weed within the size listed on the label for effective control?

If the answer to all of the above questions is yes, you may be dealing with a herbicide-resistant weed.

What can you do if you think you have a herbicide-resistant weed? First, decide whether you can implement other management strategies to remove the weed from the field. In some cases, you can use another effective herbicide with a different site of action to control the suspected-resistant weed. This is another reason postemergence herbicides should be applied early and to smaller weeds. But effective herbicides are not always available to control some of Michigan's resistant weed populations.

For example, throughout Michigan we have multiple- (glyphosate- and ALS-) resistant horseweed (marestail). In both Roundup Ready and non-GMO soybeans, no effective postemergence herbicide options are available to control multiple-resistant horseweed. With some resistant weeds, if no effective control options are available, consider removing the weeds from the field before they can set seed.

Often herbicide-resistant weed populations start with just a few plants. Allowing just one herbicide-resistant weed, such as Palmer amaranth (which can produce an average of 400,000 seeds per plant), to remain in the field can cause serious management problems for years to come. Identifying herbicide-resistant weeds early makes it easier to manage the expansion and spread of these weeds.

It is important that all growers address herbicide resistance with a weed-management plan. It's never too late to create a diversified strategy. Even if you don't find herbicide-resistant weeds in your fields this year, you should still be looking for strategies to prevent the buildup of resistance problems later. Finding, identifying and removing weeds from fields before they can set seed is vitally important.

After identifying weeds, be sure to use multiple effective herbicides that do not allow weeds to escape control. Consider nonchemical cultural practices, such as tillage, to prevent herbicide resistance. Careful management and planning now will help prevent the spread of herbicide-resistant weeds in the future.

For more information on weed-control options and herbicide-resistant weeds, visit www.MSUweeds.com.

Photo Credit: United Soybean Board

Hess Appointed by Governor Snyder to Soybean Board

By: Gail Frahm, Executive Director

Thomas "Tom" Hess of Vassar has joined the board of directors of the Michigan Soybean Promotion Committee.

The committee, organized in 1976, was created by farmers to operate under state and national law to research, promote, educate and communicate information about soybeans to farmers, consumers, health professionals, researchers and more. The mission is to manage checkoff resources to increase return on investment for Michigan soybean farmers while enhancing sustainable soybean production. The MSPC is led by a group of seven governor-appointed farmers representing geographic districts based on soybean acreage.

Hess was appointed earlier this year by Governor Snyder to fill the remainder of a vacated three-year term expiring September 23, 2015. He represents soybean farmers in District 5 from Arenac, Bay, Lapeer, Saginaw and Tuscola counties.

The owner-operator of Hess Farms in Vassar has actively farmed for 40 years. He raises corn, soybeans, wheat, rye and dry beans, with 95 acres under irrigation. The fourth-generation family farm focuses on no-till ecological farming. Soybean production has been an important part of the farm since the early '80s.

Hess is also involved with custom farming operations on a nearby 2,000-acre dairy farm and partners with several neighbors during busy planting and harvest seasons to better use available equipment and labor.

"My own on-farm research has been a big part of what we do," Hess says. "We planted field plots comparing no-till practices and equipment many years ago. We research soil and crop amendments like fertilizer types and application techniques. Nearly every year we have showcased multiple crop variety trials."

The farm is MAEAP verified in Cropping Systems and is in the process of becoming Farmstead verified. Hess is a former Certified Crop Advisor and current Certified Pesticide Applicator. He worked as an MSUE field technician in Caro and for Crop Production Services in Fairgrove.

The MSPC holds regular meetings, typically at the MSU Crops Teaching and Research Farms in East Lansing. For more information about becoming a director on the board, visit www.michigansoybean.org or call 989.652.3294.

Longtime Soybean Leader Earns Master Farmer Award

By: Gail Frahm, Executive Director

When Robert "Alan" Moore began his journey with the Michigan Soybean Promotion Committee (MSPC) in 1992, little did he know how long that journey would be, let alone his countless areas of involvement with not only the soybean industry, but all of agriculture.

Located near Elsie in Clinton County, Moore's farm has been in his family for six generations. He has been involved in the farm, and agriculture overall, most of his life. His family began raising crops to sell as seed (corn, soybeans and rye), a business Alan and his wife Phyllis and their son, Ben, continue to this day.

Keith Reinholt, MSPC's special projects coordinator, says when he asked Moore to consider serving on the MSPC many years ago, "It was because of Alan's seed production business, which includes soybeans, that he felt a commitment to be part of this industry." Moore was appointed a district MSPC director by the governor and served three 3-year terms. His fellow directors elected him president of the board his final year.

The real reason I continue farming and support this industry by dedicating my time is that I love the industry.

—Alan Moore

Moore became the first representative from Michigan to the North Central Soybean Research Program (NCSRP) in 1994, a position he says he thoroughly enjoyed for 10 years. He offered invaluable input on behalf of all soybean farmers.

As Moore's third term on the MSPC came to a close, U.S. Secretary of Agriculture Mike Johanns appointed him to the United Soybean Board (USB), on which he served three 3-year terms. He served on numerous committees, and felt he especially thrived in the meal and oil committee.

Throughout this time, Moore never lost his commitment to numerous local community organizations and church activities. On his retirement from USB, he indicated he would be interested in serving again on the NCSRP.

Like many farmers, Moore was determined to overcome numerous challenges, the latest of which were the loss of his farm's grain dryer and nearly losing his own life in 2013. According to Moore, "You never know when your time's up, so it's important to plan for the future sooner rather than later. Always be thinking long-term on the direction you want your farm to take. Include your farm partners in the planning process. If you don't have a goal, how are you going to know when you get there?"

Moore and his family farm more than 2,000 acres of corn, soybeans and rye, all for their seed business. They're excited for the next generation to enter the business.

For these and many other reasons, *Michigan Farmer* magazine named Moore a 2015 Michigan Master Farmer, a well-deserved honor.

Moore says, "While the recognition is appreciated, the real reason I continue farming and supporting this industry by dedicating my time is that I love the industry. I want to build a better future in agriculture for not only my family but for my fellow farmers. I encourage others to consider dedicating some time to serve on a commodity board such as the MSPC. You won't be disappointed," Moore concluded.

Michigan Researchers Continue Contributing to NCSRP

By: Allie Arp, Research Communications Specialist, Iowa Soybean Association

Research has always been an important part of checkoff work. Farmer-leaders continue focusing on furthering soybean research in efficient and non-duplicative ways to increase return on investment.

The North Central Soybean Research Program (NCSRP) was created by 12 state soybean checkoff programs in 1992 shortly after the national soybean checkoff began in 1991. The program aims to maximize producer returns by coordinating regional research efforts, minimizing duplication of research, and assuring that regional research projects are targeted at problems of the North Central soybean producer. Not only does the research affect Michigan growers, some is done within the state's borders.

Of the 20 projects the NCSRP is involved with, Michigan researchers are contributing to seven. The projects cover a variety of soybean topics that include improving disease management and understanding, specifically sudden death syndrome (SDS), soybean cyst nematode (SCN) and charcoal rot.

"Michigan farmers and Michigan State University researchers and Extension staff are committed to the coordinated and collaborative research efforts supported by the NCSRP as they focus on common issues and opportunities that benefit the soybean industry," said Ed Anderson, Ph.D., NCSRP executive director.

One of the studies with Michigan contributions is "Exploiting Potential Biocontrol Agents to Manage Seedling Diseases of Soybean." Martin Chilvers, Ph.D., of Michigan State University is working with scientists at Southern Illinois University (SIU), the University of Illinois (U of I) and Iowa State University on the research project. The study is designed to analyze recently identified biocontrol agents and the role they could play in improving soybean plant defenses against soilborne pathogens and how the agents interact with fungicidal seed treatments.

Another study with a Michigan influence is "Increasing Profits Through Genetic Resistance of SDS." MSU's Dechun Wang, Ph.D., is teaming up with scientists at the U of I and SIU. This study aims to better understand the complex genetics of resistance to SDS and identify genes related to SDS resistance by profiling soybean roots and leaves. Once identified, the genes will be mapped and used in elite breeding lines.

Wang is also collaborating with investigators for the project "Breeding to Improve Resistance to SDS in Soybean as a Means to Protect Yield: Delivering Resistant Varieties and Lines."

Chilvers is contributing to the project "Disease Study Group: Focus on New and Emerging Soybean Diseases."

"Soybean research supported by the NCSRP and undertaken by MSU researchers and their colleagues across the region range from the very basic to the very applied and thus provide short- and long-term solutions to our production challenges," Anderson said.

Other projects MSU is involved in are:

- Developing an Integrated Management and Communication Plan for Soybean SDS
- Understanding the Role of Fungicide Programs on Soybean Health and Charcoal Rot Development
- Soybean Aphid Management Resistance and Outreach in the North Central Region

Preliminary results of some of the studies were presented at the NCSRP board meeting in February.

MSPC and NCSRP

Ed Cagney of Scotts has represented Michigan on the NCSRP board for eight years. Cagney says he got involved because he believed farmers in Michigan could grow a better crop.

"Michigan benefits (from NCSRP involvement) because we're a smaller state production-wise compared to others in the Midwest, so we benefit more because our research dollars can be leveraged on a grander scale," Cagney said. "We have a lot of the same issues other states have and I would like to see a continued cooperative effort in production research."

For more information about the research being done by NCSRP, visit the Soybean Research and Information Initiative at http://www.soybeanresearchinfo.com.

MSPC NCSRP Representative, Ed Cagney and NCSRP field visits in Michigan.

Soybeans Helping Fairs Go Green in 2015

By: Kathy Maurer, Financial and International Marketing Director

More than 1.8 million visitors at 32 Michigan fairs will have the opportunity to see "green" soy products in use at the fair this summer and fall. *Go Green in 2015* marks the fifth year the Michigan Soybean Promotion Committee (MSPC) has been helping fairs use environmentally friendly soy products through its Green Fair Project.

The Green Fair Project is a grant program in which MSPC reimburses fairs 50% of the cost of using industrial soy products, granting up to $5,000 per fair. Soy-based fuel, printing ink, dust suppressant, cleaning products and building materials are among the soy products that fairs can choose.

According to MSPC staff member Kathy Maurer, soy ink will be used in printing programs and flyers. Along with soy building materials and carpet backing, soy-based paints will be used to spruce up buildings. A variety of soy cleaning products, as well as dust-control products, will be used. Biodiesel will be used to power generators and transportation at the fairgrounds.

"What better way to go green than to use soy-based products?" Maurer asked. "Helping fairs go green is a win-win for everyone." She adds, "This is an important consumer awareness project which is very cost effective."

The soybean organization has named the following fairs as grant recipients for 2015. Fairs marked with an asterisk are receiving a green grant for the first time.

"Renewable by nature, U.S. soy is used as an ingredient in a diverse group of biobased products including more than 800 industrial products," according to Herb Miller of Niles, one of three Michigan representatives to the United Soybean Board.

"Through the national farmer-funded soybean checkoff program," Miller says, "soybean farmers have helped fund the development of many successful new uses for soybeans, including biodiesel, soy plastics and foams, soy methyl esters and soy ink."

"Soybeans are environmentally friendly," says Maurer. As soybeans grow, they remove greenhouse gases from the atmosphere. Soybean production increased more than 70% in the past 20 years. In the same period, soybean farmers used farming practices that are more sustainable by reducing fuel use, which reduces carbon emissions. Using soybean-derived feedstocks in manufacturing industrial products has environmental and energy benefits as well.

The Green Fair Project project is funded by the soybean checkoff. For more information on soy-based products, visit www.soybiobased.org.

*Alcona County Fair	Lincoln	August 18-22
Barry County Fair	Hastings	July 20-25
Bay County Fair and Youth Exposition	Bay City	August 4-8
Berlin Fair	Marne	June 8-13
Berrien County Youth Fair	Berrien Springs	August 17-22
*Calhoun County Fair	Marshall	August 16-22
Chippewa County Fair	Kinross	August 30-September 7
Emmet-Charlevoix County Fair	Petoskey	August 22-30
Fifth Third Bank Michigan State Fair	Novi	September 4-7
Genesee County Fair	Mt. Morris	August 24-30
*Gogebic County Fair	Ironwood	August 13-16
Gratiot County Fair for Youth	Alma	July 25-August 1
Hillsdale County Fair	Hillsdale	September 27-October 3
Houghton County Fair	Hancock	August 27-30
*Huron Community Fair	Bad Axe	July 26-August 1
Ingham County Fair	Mason	August 3-8
Kent County Youth Fair	Lowell	August 10-15
*Lake Odessa Fair	Lake Odessa	June 24-28
Manchester Community Fair	Manchester	June 23-27
Midland County Fair	Midland	August 16-22
Montmorency County Fair	Atlanta	July 28-August 1
*Newaygo County Fair	Fremont	August 1-8
Oakland County Fair Association	Davisburg	July 3-12
Ogemaw County Fair	West Branch	August 4-8
Saginaw County Fair	Chesaning	August 4-8
Saline Community Fair	Ann Arbor	September 2-6
*Schoolcraft County Fair	Manistique	July 24-26
*Shiawassee County Fair	Corunna	August 9-15
Upper Peninsula State Fair	Escanaba	August 17-23
Wayne County Fair	Belleville	August 3-8
*Western Michigan Fair	Ludington	August 11-15
*Year Round Agricultural Education Center	Milford	April-September

The Soybean Livestock Nexus

By: Bill Knudson, MSU Product Center

One of the projects funded by the Michigan Department of Agriculture and Rural Development's Strategic Growth Initiative assesses the potential for an additional soybean processing plant in the state. The primary finding of the study is that in order to justify additional soybean processing in the state more animals need to be raised. In order to justify higher livestock numbers additional livestock processing capacity needs to be created. It appears that the dairy, eggs and perhaps the turkey and broiler industries are willing to expand their production and processing capacity.

Hog production is likely to increase, but whether or not it will increase enough to justify a processing plant is a critical consideration. The recent agreement with Clemens Food Group to open a 10,000 head a day processing facility in Coldwater dramatically improves the likelihood that a soybean processing plant would be successful. Hogs are the dominant species with respect to soybean meal consumption in Michigan, and an increase in their numbers will drive soybean meal demand more than other animal species.

Opportunities

Current conditions are well suited to expanded livestock production. Meat prices remain relatively high and feed prices are declining. Livestock production appears to be moving back to the Midwest from the Southeast and the West. Water issues and transportation costs appear to favor the Midwest over other parts of the country. Increased production in Michigan reflects this. Egg production in Michigan has increased at a faster rate than any other state. Despite the increase in livestock numbers soybean production has increased even faster. The substantial increases in soybean production have driven the interest in increased soybean processing.

Another market fundamental that supports the growth of the livestock industry is the growth of the global middle class, particularly in China. As incomes increase in developing countries, the demand for animal protein will increase at a faster rate than the demand for other types of food. The U.S. food supply is considered safer than the food supply in many other countries which also bodes well for future exports.

The study analyzed current consumption of soybean meal and looked at three scenarios involved with increased animal production. Current consumption would make a soybean processing plant problematic; however, a 30 percent increase in livestock numbers and a 50 percent increase in the number of hogs (see Scenario 3) would make a small scale, but still commercial-sized, soybean processing plant feasible. Scenarios 1 and 2 show the needed production of soybean meal if the number of animals increased by less than 30 percent, with a 50 percent increase in the number of hogs. The relevant size of the soybean processing plant based on the different scenarios is shown in the following table.

Table 1 shows the current level of production in the state, the level of demand both currently and under the different scenarios, the difference between demand and supply – the gap – and the difference per day. Given the current state, building an additional soybean crushing plant is marginal at best; the 722 tons of soybean meal per day converts to 912 tons of soybeans. This translates to 30,400 bushels of soybeans per day or 10.9 million bushels of soybeans per year. In Scenarios 1 and 2 a soybean crushing plant is still problematic, but if it is located in the right place it could be profitable. In Scenario 1 the 1,228 tons of soybean meal processed per day translates to 1,551 tons of soybeans processed per day or 51,705 bushels per day or 18.6 million bushels per year. The 1,275 tons of soybean meal processed needed per day in

Table 1: Soybean Meal Demand and Production Under Different Scenarios				
Scenario	**Production (tons)**	**Demand (tons)**	**Gap (tons)**	**Gap per Day (tons)**
Current	240,000	500,000	260,000	722
Scenario 1: 10% increase in dairy, 50% increase in hogs and 20% increase in layers and broilers	240,000	682,000	442,000	1,228
Scenario 2: 20% increase in dairy, 50% increase in hogs, 25% increase in layers and broilers and 20% increase in turkeys	240,000	699,000	459,000	1,275
Scenario 3: 50% increase in hogs, 30% increase in dairy, 30% increase in layers and broilers and 30% increase in turkeys	240,000	713,500	473,500	1,315

Scenario 2 corresponds to 1,610 tons of soybeans or 53,684 bushels per day or 19.3 million bushels per year. In Scenario 3 a small scale commercial plant is feasible, the 1,315 tons of soybean meal needed per day corresponds to 1,661 tons of soybeans processed or 55,367 bushels per day or 19.9 million bushels per year.

In order to increase the probability of success, a soybean processing plant should be located near the center of the Lower Peninsula or in the Saginaw Bay area. This is near major areas of soybean production and the region is becoming increasingly important in livestock production – especially dairy. This location would also be far enough away from existing soybean processing plants to minimize competition from those plants.

While the focus on much of this study is on the demand for soybean meal, soybean processing also generates soybean oil. A firm that has experience in both processing and marketing soybean oil as well as meal is more likely to be successful than a new entrant into this industry. Soybean processing is a low-margin industry and the ability to control costs is extremely important, which is another reason why an experienced firm is more likely to be successful.

Barriers

Despite the positive trends in livestock production, there are several barriers to increased livestock production and livestock processing which is a necessary precondition for additional soybean processing. It is important to determine which communities are interested in increased animal processing. Community support is important to overcome whatever opposition to a processing plant may exist. Also, developing new labor saving technologies would improve the acceptance of animal processing. The perceived problems of animal processing are greatest for pork processing and to a lesser extent turkey and broiler processing. It is less of an issue for egg and dairy processing.

Employment opportunities for agri-food firms are not well advertised, which is a barrier to the growth of the entire agri-food system. Despite the state's relatively high unemployment rate there does not appear to be a strong interest in agri-food jobs among potential employees. Finding qualified workers that are interested is a particular barrier to the dairy industry.

A factor that hurts Michigan's competitiveness is the poor state of its infrastructure. Roads are in poor shape. Additional funding, most likely in some type of tax or registration fees, will be necessary to improve the state of the roads. Improved access to Canada through the construction of a second bridge in the Detroit/Windsor region would improve access to the Canadian market. The state has good rail service connecting the larger cities, but short line service on rural routes heading north and south is generally not considered as good. This is not likely to change as long as demand on the short lines is high in the fall and early winter and tapers off during the rest of the year. Improved internet access would improve the economic performance of rural areas.

The state also needs a natural gas policy. Michigan has a great deal of natural gas and large storage facilities for storing natural gas, but pipelines to rural areas are lacking. The lack of access to natural gas increases the cost of handling grain and maintaining grain quality.

Regulation is a consistent point of contention between members of the agri-food system and the general

public. The reality is that regulation will continue to be an issue. Consumers, retailers and others are becoming more demanding with respect to how food is produced throughout the supply chain. Farmers and processors will need to be more responsive to these demands.

Environmental sustainability will be of increasing importance for farmers and processors as retailers and other firms institute their sustainability policies. Animal welfare will be another concern that will need to be addressed in order to meet the demands of retailers and consumers. Increasingly, these issues will be determined by economic agents other than government agencies. Research and Extension will need to play a role in aiding the affected industries in developing policies to address these regulatory issues.

Determining the impact of a soybean plant on soybean prices is difficult to determine. A conservative estimate is that the price would rise 5 to 10 cents a bushel in the area that is serviced by the plant. While there is some variability in price from year to year it should be noted that soybean prices in Ohio and Indiana tend to be around 30 cents a bushel higher than the price in Michigan. In addition to these states having closer access to major markets, they are also home to several large soybean processing plants. The most likely scenario is that soybean prices will increase about 20 to 30 cents in Michigan if there were another soybean processing plant in the state. Increased soybean processing in Michigan would increase the profitability of soybean farming and has the potential to reduce the feed cost of some livestock producers in the state.

Still Time to Participate in SMaRT On-farm Research Trials

By: Mike Staton, MSU Extension Soybean Educator

The SMaRT (Soybean Management and Research Technology) program provides Michigan soybean producers with a statistically valid method for evaluating the yield and income benefits of new products, equipment and management practices. Producers across the state have identified new products, equipment or practices of interest and are evaluating them in field-scale research trials using a common research protocol.

The data from these trials will be collected, subjected to statistical scrutiny, summarized across locations and years and shared with soybean producers. Results of 2011 through 2014 SMaRT research are available at http://www.michigansoybean.org/for-farmers/smart/research-results.

The products and production practices being evaluated in 2015 are:

- Potassium thiosulfate starter fertilizer (2x2) vs. an untreated control
- Immediate and long-term effects of gypsum applications on crop yields
- Planting rate/population comparison (80,000, 100,000, 130,000 and 160,000 seeds/acre)
- Foliar fungicide (Priaxor applied at R3 vs. an untreated control)
- Endura white mold foliar fungicide (a single application of Endura at R1 vs. an untreated control)
- White mold foliar fungicide program comparison (Endura followed by Priaxor vs. Aproach followed by Aproach vs. an untreated control)
- Three-way foliar tank mixture (a prophylactic foliar application at R3 made up of a fungicide, an insecticide and a fertilizer vs. an untreated control)
- Clariva Complete Beans seed treatment
- Blackmax 22 (a commercially available liquid potassium fertilizer and humic acid product vs. an untreated control)
- Multistate row spacing trial (15-inch rows vs. 30-inch rows using the same planting equipment and planting rates)

The treatments in many of these trials have already been implemented. But there is still time to participate in the foliar fungicide trial, the white mold fungicide trials, the Blackmax 22 trial and the three-way foliar tank mixture trial. Please consider conducting one of the above trials. We will assist you in evaluating the practice on your farm, provide data from similar trials on other farms and share with other producers to help them make soybean production decisions. When trial results are published and presented, the identities of the cooperating farmers are always kept confidential.

If you would like to conduct one of these replicated trials on your farm, please contact a SMaRT coordinator soon:

- Ned Birkey, Southeast Michigan, 734.260.3442
- Dan Rajzer, Southwest Michigan, 269.876.6343
- Mike Staton, statewide, 269.673.0370, extension 2562
- Michigan Soybean Promotion Committee, 989.652.3294

SMaRT
Soybean Management and Research Technology

ASA DuPont Young Leaders Explore Issues and Advocating During Final Phase of Training

The 31st class of ASA DuPont Young Leaders completed their training February 24-28 in Phoenix, Arizona, in conjunction with the annual Commodity Classic Convention and Trade Show. Michigan's own Matthew Doss and Stephanie Francis were among the class of 41 leaders, 11 individuals and 15 couples, from throughout the U.S. and even one from Canada.

"The DuPont Young Leader Program fills a critical role in the soybean industry by identifying new and emerging leaders and then training them to be strong voices and advocates for agriculture," said Wade Cowan, American Soybean Association (ASA) president. "We're grateful to DuPont Pioneer and DuPont for their commitment to this program and for helping secure the future of the soybean industry. After spending time with this year's class, I can assure you the soybean industry is in good hands."

While in Phoenix, the Young Leaders participated in leadership and marketing training, issues updates and discussion. The entire class was recognized at ASA's annual awards banquet.

"Commodity Classic provided an ideal venue for the ASA DuPont Young Leaders to continue to strengthen their leadership skills and learn more about the policies that impact agriculture," said DuPont Pioneer Sr. Industry Relations Manager Randy Wanke. "We have been very impressed with the caliber of this class of Young Leaders and greatly appreciate ASA's commitment to leadership development."

Photo Credit: ASA
2014-2015 ASA DuPont Young Leaders

Photo Credit: ASA
Left to Right: Wade Cowan, ASA President; Matthew Doss and Stephanie Francis; Russ Sanders, Director of Food and Industry Markets

From Michigan's Young Leader Representative, Matt Doss:

When I first heard Stephanie and I were chosen to represent Michigan in the DuPont Young Leader Program we were honored and very excited. We are a young couple taking on management roles in our growing family farm and are looking towards the future. Being involved in this program gave us an opportunity to get involved and have our voice heard. Agriculture is a way of life for us. Both Stephanie and I are highly involved in agriculture with our jobs off farm and our farm operation itself. The agriculture industry is a fast-paced, ever-changing environment. Many people are not involved in farm operations or educated in production agriculture who are making decisions relating to how farms operate day-to-day. With this in mind, it is important for every producer to get out there and tell their stories to educate misinformed citizens to prevent them from making decisions that will affect our way of life.

Throughout both phases of the DuPont Young Leader program, one lesson that really stood out is for all producers to get out and inform people on agriculture. However, most importantly we need to build relationships with our politician's both in our districts and in urban districts to ensure government policy allows U.S. agriculture to grow and maintain a competitive advantage in the world economy. The DuPont Young Leader Program has made me realize that as a soybean producer I need to look at the whole picture and not just what is going on at our farming operation. The market for our soybeans is not just the local elevator anymore; it may be a crush plant in China as well. Throughout the Young Leader program, we have had the privilege of meeting many new friends in the same industry throughout the entire U.S. and we now share information between each other in regards to our farming operations. Learning from fellow producers has allowed us to bring new production ideas to our farm along with neighbors' operations, while passing on our local production practices to other states. The wealth of knowledge and skills we have learned throughout the Young Leader Program are indescribable. Stephanie and I would highly recommend the DuPont Young Leader Program to anyone who wants to help carve the future of agriculture. With the skills and training we have learned from the Young Leader Program, both Stephanie and I will continue to be involved by taking on more roles and ensuring our story is heard to help ensure agriculture has a bright future for generations to come.

For more information about the ASA DuPont Young Leader Program, visit https://soygrowers.com/learn/young-leader-program/. Watch for the 2016 ASA DuPont Young Leader Program application in the fall.

DuPont YOUNG LEADER PROGRAM
American Soybean Association

2015 Soybean Yield Contest

By: Ned Birkey, Spartan Agricultural Consulting

In 2015, the Michigan Soybean Promotion Committee and Spartan Agricultural Consulting will sponsor the tenth annual soybean yield contest. In the past nine years, 347 farmers have entered the contest, with a total of 502 entries.

The average yield of contest entries has increased from 15 bushels above the state average yield to 21 bushels over the state average. The contest average yield has increased as farmers have paid more attention to and done a more effective job of managing the agronomics of their soybean crop.

Despite a wet year in 2014, with a lot of *Sclerotinia* white mold throughout the state, Michigan had its second winner breaking the 100 bushels per acre barrier. The average yield of the winners in all classes was 83 bushels per acre. Clearly, some farmers are making decisions to change seed, planting and other agronomic practices to increase yields and profits.

The contest brochure, including the entry form, is available at www.michigansoybean.org/for-farmers/yield-contest/how-to-participate. Farmers have until August to make a decision about which field to enter.

One major change this year is the inclusion of a non-GMO category. This variety can be of any maturity and can be either irrigated or nonirrigated.

Although the contest is not a research-based checkoff project, it is something any Michigan soybean farmer can enter, have some fun and see if they can increase their yields. Past contests have shown that even simple things can make a difference in yields. These practices have included:

- More of the higher-yielding entries have come from tilled fields than from no-till fields.
- More of the higher-yielding entries were planted in wider rows than in narrower rows. No entrant in the top ten had a row width of less than 15 inches, while 40 percent of the ten lowest-yielding entries planted with a drill in 7.5-inch rows.
- Fully 90 percent of the ten lowest-yielding entries did *not* know whether their contest field had a history of soybean cyst nematodes. 80 percent of the ten top-yielding entries *did* know this.
- 83 percent of the top group had tested their soil recently, while 60 percent of the bottom group had not.

A major change made last year will be continued this year: more prizes to all farmers who complete the contest. MSPC thanks the eight seed companies represented by entries last year who donated prizes: Asgrow, Center Seeds, Channel Seeds, Dairyland Seeds, Pioneer, Renk Seeds, Stine Seeds and Syngenta.

We also thank Helena Chemical Company for sponsoring the entries of 22 farmers and Heasley Seeds for sponsoring five entries.

For 2015, the entry fee remains at $25, with a limit of two entries. For more information about the contest, contact Ned Birkey, birkey@msu.edu, 734.260.3442.

Overall Top Yield Michigan Soybean Yield Contest		
2014	102.12 bu	Group II Irrigated
2013	97.57 bu	Group II Nonirrigated
2012	100.3 bu	Group II Irrigated
2011	85.1 bu	Group II Nonirrigated
2010	96.2 bu	Group II Nonirrigated
2009	75.8 bu	Group II Irrigated
2008	85.0 bu	Group II Irrigated
2007	69.2 bu	Group III Nonirrigated
2006	71.1 bu	Group III Irrigated

Research Could Change Nutrient Recommendations

By: Brian Stiles, Research Technician

A multistate research project could change the nutrient recommendations you get for growing soybeans after submitting soil samples for testing. The Michigan Soybean Promotion Committee is entering its second year of conducting a nutrient uptake study at three locations in the southern, central and Thumb regions of the state.

The nutrient uptake and partitioning study originated last year at the University of Wisconsin–Madison by Shawn Conley, Ph.D., and Adam Gaspar, graduate student. Michigan joins Wisconsin and Minnesota in working alongside Conley and Gaspar on the project designed to determine when during their development soybean plants use each nutrient.

The current soybean nutrient uptake curves, on which today's recommendations are based, were developed in the early 1960s, according to Conley. That was before the major changes in seed technology and agricultural practices of today.

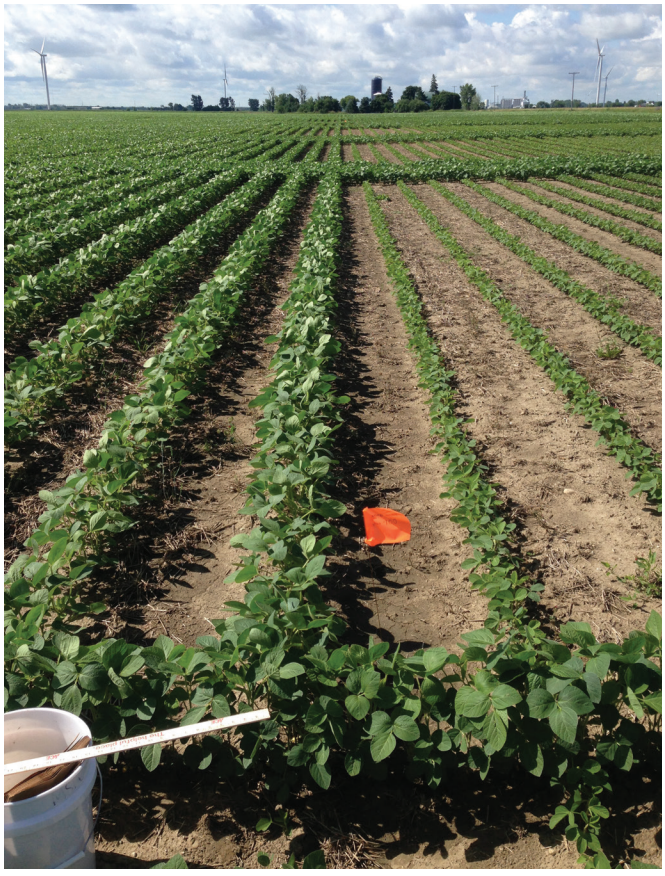
Last year I joined the Michigan Soybean Promotion Committee after graduating from Michigan State University and hit the ground running with this very labor-intensive project. A large number of samples need to be collected and analyzed, so two student employees assisted.

Last year, after all of the plots were planted, we visited each site once or twice a week. We took notes, recorded the growth stage of the crop, and collected plant samples from each plot during the V4, R1, R4, R5.5, R6.5 and R8 growth stages.

After collecting whole plant samples from the field, we partitioned the plants. Partitioning involves separating the leaves, petioles and pods from the stem and running the pods through a thresher to extract the seeds.

Next year will be the third and final year of the study. All of Michigan's nutrient analysis results will be sent to the University of Wisconsin–Madison, where Conley and Gaspar will analyze the data from the three participating states and publish the results.

This project could result in the revision of nutrient recommendations for soybean production. Crop fertility experts and soybean growers have established nutrient management practices based on previous research and their own experience. This project may support those practices or it may offer new information to help fine-tune nutrient management practices to optimize soybean production.



Size difference between early and late planted soybeans.
July 2014 - Huron County

Michigan Soybean Association New and Renewing Members

NEW:
Brian Boge, Shepherd
Greg Dreves, Buckley
Jeremy Kiger, Milan
John McManus, Charlotte
Ricardo Miller, Constantine
Keith Pohl Sr., Coldwater
Reid Dairy Farm LLC, Jeddo
David Revels, Monroe

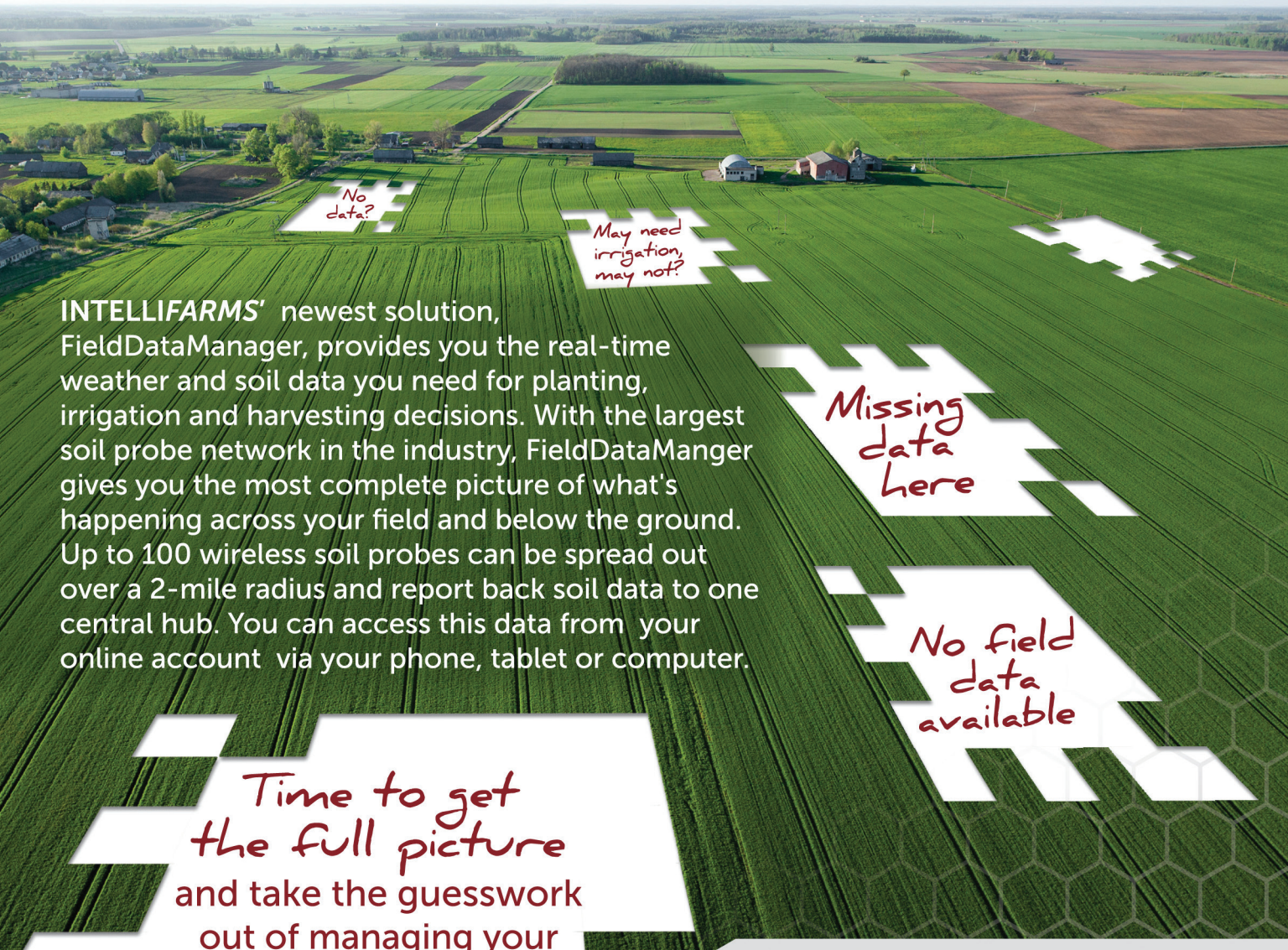
RENEWING:
John Arver, Bronson
Dale Benore, Erie
Duane Beuerle, Manchester
Ned Bever, Reading
Larry Beyersdorf, Hemlock
William Bierman, Riga
Ned Birkey, Ida
Timothy Bleisner, Oakley
James Bolday, Emmett
David Brink, Holland
Gerry Burgess, Yale
Citizens Elevator Co. Inc., Vermontville
Ronald Coltson, Marlette
Community Mills Inc., Cassopolis
David Conklin, Dewitt
Richard Cousino, Erie
Richard Cox, Britton
Art Cuthbertson, Birch Run
Richard D'Arcy, Kingston
Mike Dick, Ida
Charles Dietz, Williamston
William Dodds, Boca Raton, FL
Larry Dolegowski, Dorr
Gary Drodt, Ida
Marc Ebenhoeh, Chesaning
Richard Ekins, Rives Junction
Robert Elston, Melvin
Jack Enderle, Dewitt
Jack Frank, Bay City
Jerry Gallagher, Belding
Bobbie Garnant, Eaton Rapids
Don Girdham, Hillsdale
Larry Gould, Morenci
Robert Graichen, Ypsilanti
Jim Guse, Cassopolis
Dennis Hadeway, Fairgrove
Richard Hart, Wales
William Hayward, Hillsdale
Vaughn Hoffman, Marshall
Paul Hutchins, Mt. Pleasant
Ittner Bean & Grain, Auburn
Mark Ivan, Freeland
David Jacobs, New Lothrop
Dale Janson, Reese
Steve Jennings, Swartz Creek
Ernest Karnatz, Ypsilanti
Dan Keenan, Merrill
Barbara Knust, Almont
Joe Kwiatkowski, Dorr
Larry LaPointe, Temperance
Paul & Brad Lubbers, Hamilton
Wayne Lubeski, Bad Axe
Curtis Mans, Zeeland
Donald Maurer, Saginaw
Scott Miller, Elsie
Carl Moore, Cedar Springs
Donald Morse, Birch Run
Jim Murphy, Hemlock
Ralph Nartker Jr., Erie
Bruce Noel, Leslie
Jeff Oesterreicher, Chesaning
John O'Hair, Croswell
Roy Paturalski, Buchanan
Lee Phelps, Schoolcraft
Ed and Jerry Poortenga, Hudsonville
Esther Reinbold, Saginaw
Ernest Richardson, Owosso
Rob Richardson, Vicksburg
Robert Robson, Romulus
Gordon Rogers, Chatham ON
Donald Sahloff, Ottawa Lake
Michael Sahr, Saginaw
Jim Schaendorf, Dorr
Harold Scharrer, Birch Run
John Schian, Reese
Steven Schlagel, Turner
George Schnierle, Ann Arbor
Kenneth Schramke, Saginaw
Stephen Seamon, Saginaw
David Seeger, Bath
Roy Simpson, Charlotte
Don Sisung, St. Johns
Jerry Skuta, Pinconning
Jim Sparks, Saranac
John Stasa, Owosso
Dennis Steinbauer, Standish
Brian Stutzman, Jasper
Sulkowski & Sons Farms LLC, Goodells
Nick Suwyn, Wayland
Don Terwillegar, Freeland
Curtis Thayer, Freeland
Troy Vandenbusche, Jasper
Joe Walker, Stockbridge
Rollin Webb, Newport
Louis Wehrman, Reese
Ronald Weisenberger, New Lothrop
Stuart Welden, Jonesville
James White, Petersburg
Gary Wilcox, Dansville
Michael Wildner, Unionville
Douglass Wilkin, Britton
Brent Wilson, Carson City
Kendall Wood, Ithaca
Marvin Yaek, Richmond
Herb Zahm, Marne

MSA Membership Application is on page 43

Thank You to MSA's February Board Meeting Sponsor

BROWNFIELD
AG NEWS FOR AMERICA

YOU'RE NOT GETTING
THE FULL PICTURE
WITH YOUR EXISTING FIELD MONITOR



INTELLI*FARMS*' newest solution, FieldDataManager, provides you the real-time weather and soil data you need for planting, irrigation and harvesting decisions. With the largest soil probe network in the industry, FieldDataManger gives you the most complete picture of what's happening across your field and below the ground. Up to 100 wireless soil probes can be spread out over a 2-mile radius and report back soil data to one central hub. You can access this data from your online account via your phone, tablet or computer.

FIELDDATAMANAGER™

To learn more, visit FieldDataManager.com

or contact IntelliFarms at 855.206.5612.

INTELLI*FARMS*™ by INTELLI*AIR*™

Intelligent solutions for today's farmers

www.intellifarms.com

FieldDataManager is a 2015 recipient of an AE50 Outstanding Innovation Award

ASABE AE50 outstanding innovations AWARD 2015

2015 Commodity Classic

Dave Williams, MSA President

From Dave:

What is Commodity Classic? You've probably been hearing about it for years. If you've never attended, you're missing a great event.

In a nutshell, Commodity Classic is the annual membership meeting of soybean, corn, wheat and sorghum growers. It's the time when delegates to the resolution session sit down and decide organizational policy for the coming year. If you've ever attended a Farm Bureau annual meeting, it's very similar to that.

The number of delegates from each state varies with the number of American Soybean Association (ASA) members in that state. Michigan gets three delegates to Commodity Classic. State presidents meet Wednesday afternoon and discuss current ASA Policy and proposed Policy changes. On Thursday morning, all states caucus. Michigan, Indiana and Ohio meet and review proposed Policy changes. Once the states have reviewed the entire Policy document, there is an open session where caucus chairs recap what was discussed in each caucus. This also provides any member with the opportunity to propose any additional changes from the floor.

On Saturday afternoon, ASA's president, this year Wade Cowan of Texas, calls the delegate session to order and we proceed to review all proposed changes and vote for or against them with discussion on certain issues as needed. At the end of the afternoon, we're done with the Delegate Session and Commodity Classic is almost complete for another year.

While delegates are performing their duties, there's a lot more going on. Early Riser Sessions (7:00 a.m.) cover a number of topics including a taping of U.S. Farm Report Marketing Session. Mini WIN (What Is New) sessions are scheduled throughout the day – these are five minute presentations in a fast-paced 90 minute window on everything from "Preventing Grain Spoilage" to "Subsurface Irrigation."

There's a trade show that opens on Thursday and runs through Saturday. This show features over 400 equipment manufacturers, suppliers, marketing firms, and just about anything else you can imagine agriculture uses. Think of it as a mini Louisville Farm Show.

Friday morning brings the General Session where each commodity organization highlights what they've been doing and what they see for the future. Since I've been attending Commodity Classic, Tom Vilsack, U.S. Secretary of Agriculture, has taken time from his schedule to address attendees.

Saturday evening ends Commodity Classic with the "Evening of Entertainment" which is included as part of your registration.

There's more to see and do than time allows in the three days of the Classic. It's educational, exciting and fun! You can also just do what you want including networking with farmers and friends from across the nation and around the world.

The 2016 Commodity Classic will be held in New Orleans, Louisiana, March 3-5. The 2016 Classic promises to be bigger and better. The Association of Equipment Manufacturers will be joining with the four commodity organizations to present what I would guess will be the biggest Commodity Classic ever. Hope to see you there.

I found this year's Classic very exciting. First, it was nice to escape Michigan's cold winter and go to Phoenix where it was really warm – short sleeves felt good. The Delegate Session went relatively smooth – I guess nothing was too controversial this year which made it nice. There were a number of leadership educational sessions that I found very beneficial. I also enjoy the trade show. It's an opportunity to visit with different companies and learn about new products and innovations. I always come away from the Classic with new information. The best part is renewing old friendships and finding out what my colleagues have been up to.

Mark Your Calendar Now!

Recap from Your Directors

Dan Keenan, MSA Secretary

From Dan:

From February 25-March 1, 2015, I had the privilege of being a voting delegate representing Michigan's soybean growers at this year's Commodity Classic in Phoenix, Arizona. Every year at the Classic, the American Soybean Association (ASA) updates and makes changes and/or revisions to its policies. These resolutions will be ASA's stance on key issues that have direct impact on America's soybean industry. The adoption of these new resolutions on an annual basis is of great importance. Our industry must be able to address issues and policy that seem to change with the tide these days whether those issues are in regards to technological advancements in agriculture, current or potential trade issues, domestic market environment or infrastructure. It is the purpose of the Delegate Session at Commodity Classic to decide how ASA's policies need to be revised, changed or removed to best represent the American soybean farmer for the upcoming year.

In between ASA business, the Classic provides a very large trade show along with educational sessions throughout the three day event. Sessions include everything from new technologies and agronomic techniques, to grain marketing, to succession planning and more. The closing ceremony this year included a concert from country music star Craig Morgan.

Along with enjoying the sun and warm temperatures Phoenix had to offer, I also had the opportunity to visit and network with farmers and industry experts and representatives from all over the country. It really is exciting to visit with so many different farmers from all over. With 7,936 attendees this year, I left Phoenix with a good mental picture of how different parts of the country fared last year and how they do things in different areas. If you never have attended a Commodity Classic, I would recommend going. The trade show and educational sessions alone are worth the trip, not to mention the weather tends to be quite a bit nicer than Michigan in late February/early March. I contemplated packing my shorts but decided against it thinking since it had been about six months since my legs saw sunlight, I didn't want to scare the locals. Other advantages to attending Classic are the networking and potential friendships to be made while there. Seeing that there was just shy of 8,000 farmers packed into a convention center, it's safe to say a whole lotta fat got chewed in those three days. And finally, Classic gives you a chance to see all of the commodity groups under the same roof and how they work to speak up for the American farmer. So if you can swing it, next year's Classic is in New Orleans – so don't forget to bring your beads!

COMMODITY Classic
Where America's farmers meet with success.

March 3-5, 2016 in New Orleans

Checkoff Funds Critical Research Projects

By: Mark Seamon, Research Coordinator

The largest single budget line item in the Michigan Soybean Promotion Committee's (MSPC) production research area is the annual competitive research funding program. This program provides funding to those professionals who are best at conducting meaningful research into Michigan soybean production. In 2015, the MSPC board of directors voted to fund 20 projects totaling more than $600,000. The funding decisions follow a strategic plan to allocate funds to the most critical needs of Michigan soybean growers.

Some projects build on previous funding and contribute to multi-year projects while others are for a one-year period. Following is a synopsis of the 20 projects funded for 2015.

Map SDS Resistance Genes in Early Maturing Soybean Germplasm

Researcher: Dechun Wang, Ph.D.
Michigan State University
Funding amount approved: **$10,000**
This checkoff project funds mapping soybean genes that cause resistance to sudden death syndrome with the goal of introduction into high-yielding, early-maturing soybeans.

Pyramid Yield-Increasing Genes in Elite Soybean Germplasm

Researcher: Dechun Wang, Ph.D.
Michigan State University
Funding amount approved: **$64,500**
The investigator will combine multiple genes that have led to high yields in elite soybean germplasm. The pyramid effect should accelerate the development of high-yielding varieties for Michigan.

Identify DNA Markers Closely Linked to Aphid Resistance Genes From Wild Soybean

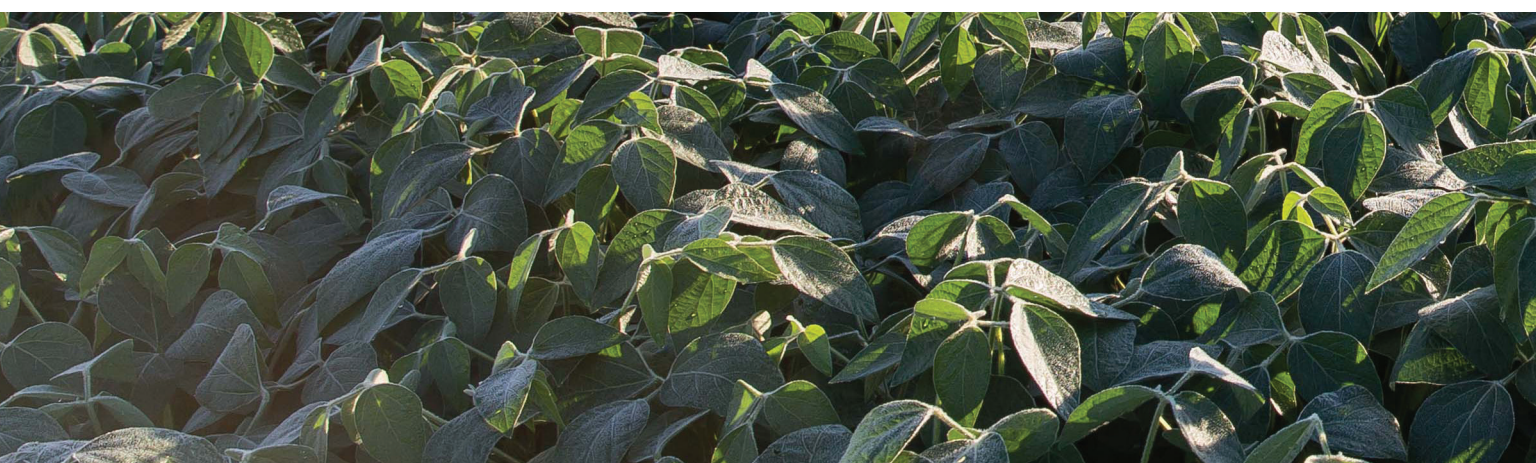
Researcher: Dechun Wang, Ph.D.
Michigan State University
Funding amount approved: **$47,700**
This project is to identify MSU-developed germplasm genetic markers that cause soybean aphid resistance for integration into high-yielding soybean lines.

Continuation of Sudden Death Syndrome and Soybean Cyst Nematode Research at the Soybean Disease Research Center in Decatur

Researcher: Dechun Wang, Ph.D.
Michigan State University
Funding amount approved: **$16,800**
This project continues the support of a unique research site in Southwest Michigan that has conditions favoring high levels of soybean cyst nematode populations and sudden death syndrome disease pathogens. Researchers will evaluate resistant genetics, seed treatments and other management practices to reduce the impact of these two yield robbers.

Enhance Research in Michigan Soybean Field Evaluations

Researcher: Dechun Wang, Ph.D.
Michigan State University
Funding amount approved: **$36,900**
Researchers will enhance the capacity to perform soybean field research, especially in soybean breeding and variety development.



Soybean Breeding and Genetic Improvement for Michigan Environments

Researcher: Dechun Wang, Ph.D.
Michigan State University
Funding amount approved: **$131,100**

This research was funded to develop new soybean varieties with high yield and resistance to white mold, soybean cyst nematode, sudden death syndrome and soybean aphids. Investigators aim to develop desirable seed composition traits including high oleic acid, low linolenic acid, low saturated fatty acids, high protein content and high oil content. This effort has the goal of leading to increased profit through higher soybean yield and value-added traits that could offer a premium price.

Using Cover Crops with Wheat to Improve Rotational Profitability, Year 2

Researcher: Dean Baas, Ph.D.
Michigan State University
Funding amount approved: **$14,800**

Researchers will evaluate the inclusion of wheat and cover crops into a conventional corn-soybean rotation. The funding of this project is shared among the soybean, corn and wheat checkoff programs.

Continued Support for Weed-Management Research in Non-GMO Soybean

Researcher: Christy Sprague, Ph.D.
Michigan State University
Funding amount approved: **$7,400**

This checkoff investment is for field research to evaluate herbicide effectiveness and economics of these systems for use in non-GMO soybeans. It includes support of growers who are producing soybeans for premium markets and providing information for other growers who are looking for options to control herbicide-resistant weeds or delay their arrival.

Integrating a Rye Cover Crop as an Additional Tool to Manage Glyphosate-Resistant Palmer Amaranth

Researcher: Christy Sprague, Ph.D.
Michigan State University
Funding amount approved: **$26,400**

This project will build on previous MSPC-funded research in the management of herbicide-resistant Palmer amaranth. Novel control methods such as cover crops may contribute to improving systems that reduce the effect of this aggressive weed.

MSU Extension On-Farm Research, Education and Communication Projects

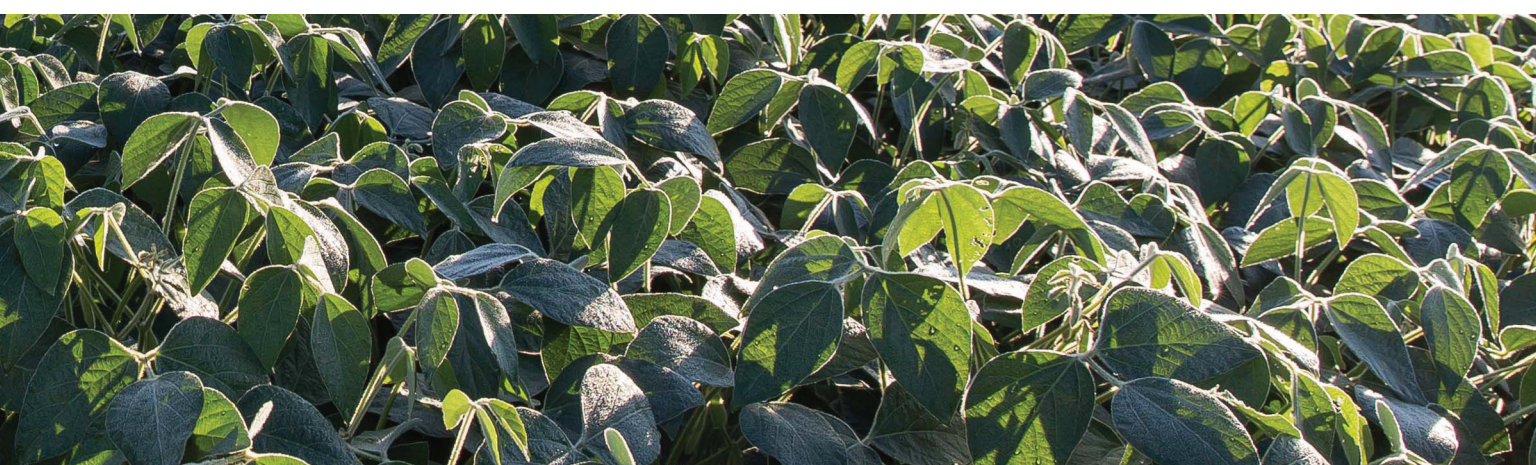
Researcher: Mike Staton
Michigan State University Extension
Funding amount approved: **$28,000**

Included here are several projects coordinated by MSU Extension educators throughout the state. The projects include a soybean harvest equipment field day, Thumb Ag Research and Education (TARE) variety evaluation and agronomic studies, soybean variety effects on soybean cyst nematode populations, use of cover crops to manage soil health and soybean cyst nematodes, use of foliar nutrients and fungicides and a Northeast Michigan deer exclusion study.

Indiana and Michigan Irrigated Soybean Production Program

Researcher: Mike Staton
Michigan State University Extension
Funding amount approved: **$4,375**

The acreage of soybeans grown under irrigation continues to expand in Michigan. But management recommendations for irrigation timing and rates to optimize yield and minimize the potential negative impacts (white mold) to soybeans is not well developed. The goal is to support the production of soybeans in intensive systems that demand improved yields to contribute to the increased cost of production.



Improving Soybean Irrigation Scheduling Methods

Researcher: Jeff Andresen, Ph.D.
Michigan State University
Funding amount approved: **$12,036**

Tools to aid in scheduling irrigation application to soybeans are available, but need improvement. A computerized spreadsheet program will be revised to improve ease of use, including the integration of MSU weather station data.

Improving White Mold Management; Fungicide Timing and Plant Resistance

Researcher: Martin Chilvers, Ph.D.
Michigan State University
Funding amount approved: **$45,000**

This project will study white mold biology to improve timing of foliar fungicide applications and management decisions and evaluate foliar fungicide products for improved control of white mold. Researchers will investigate the profitability of applying foliar fungicides in the absence of disease, and will screen promising soybean germplasm for resistance to white mold.

Evaluating the Efficacy and Profitability of Seed Treatments

Researcher: Martin Chilvers, Ph.D.
Michigan State University
Funding amount approved: **$56,000**

This is the second year of this study to determine the profitability of soybean seed treatments containing fungicides, insecticides and nematicides and their combinations.

Improving Management of SDS Through Detection, Germplasm and Fungicides

Researcher: Martin Chilvers, Ph.D.
Michigan State University
Funding amount approved: **$45,000**

Investigators will evaluate new seed-treatment products that may reduce sudden death syndrome (SDS) infection and interactions with soybean cyst nematodes. The researcher will partner with the MSU breeding program to field test new breeding lines of soybeans for SDS resistance. The project will also explore the use of drones to assess SDS management tactics.

Understanding Biotic and Abiotic Interactions on Soybean Soil Health and Nutrient Utilization

Researcher: Kurt Steinke, Ph.D.
Michigan State University
Funding amount approved: **$39,500**

Researchers will evaluate the impact of soil health factors on soybean yield. They will determine the effects of planting date, starter fertilizer and maturity group on soybean yield. They'll also evaluate the impact of timing spring potash applications.

Center for Excellence on the Road

Researcher: Kathlene Kurowicki
Lenawee Conservation District
Funding amount approved: **$18,300**

This project will evaluate agronomic products and practices utilizing strip trials in Southeast Michigan. These will include tillage systems, nutrient management, and soil health effects from multiple crop rotations including cover crops. An innovative soil drainage system will be installed and evaluated. Two educational events for growers will also be conducted.

Evaluating the Effect of Cover Crops on Soybean Cyst Nematode Populations

Researcher: George Bird, Ph.D.
Michigan State University
Funding amount approved: **$17,000**

This project will evaluate the effect of multiple species and cultivars of cover crops on soybean cyst nematode populations. Some cover crops have the potential to serve as trap crops for specific soilborne pests. Others improve general soil health through the addition of carbon, while others may aggravate soilborne pest problems. This project will provide an initial analysis of opportunities to use cover crops to battle soybean cyst nematodes.

Soybean Plant Type and Population Interactions for Variable Rate Seeding Across Management Zones

Researcher: Missy Bauer
B&M Crop Consulting
Funding amount approved: **$21,000**

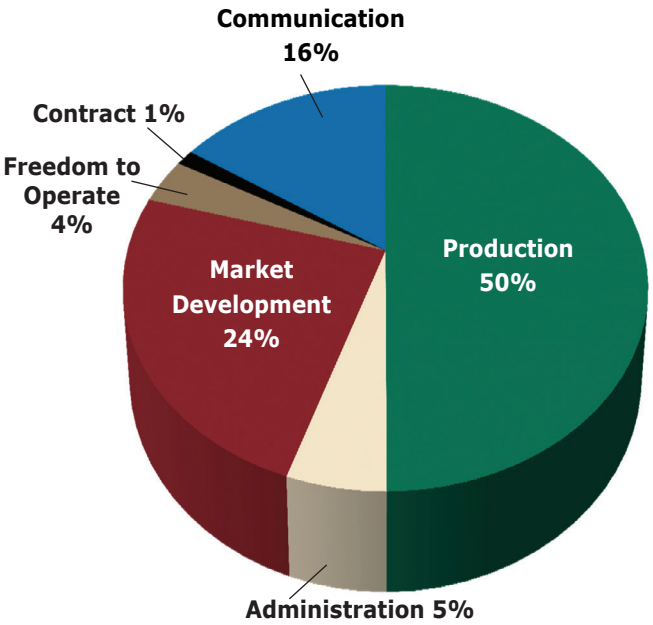
This project builds on the success of a previous project that showed an advantage to using variable planting populations in soybeans. Further detail in evaluating plant architecture characteristics (bush-type vs. in-line) may help further refine optimal planting populations.

Managing Soybean Growth with a Field Roller During Vegetative Growth Stages

Researcher: Missy Bauer
B&M Crop Consulting
Funding amount approved: **$11,100**

This project will evaluate the effect of using a field roller on soybean yield. Three timings of rolling will be evaluated: post planting, first trifoliate and third trifoliate stage. An application of Cobra will be added at the third trifoliate stage. The postemergence treatments are intended to introduce crop stress that may induce a response in increasing nodes per plant, pods per plant or both. Harvestability will be evaluated through collecting data at harvest.

MSPC's Percent Expended in FY14 by Program Area



Mission Statement

Manage checkoff resources to increase return on investment for Michigan soybean farmers while enhancing sustainable soybean production.

Soybean Workshops Cover White Mold, Irrigation in Soybeans

Two checkoff-sponsored workshops for soybean farmers in March addressed some of the major challenges to high yields: white mold disease and irrigation water management. More than 270 participants attended a one-day seminar March 5 in Shipshewana, Indiana. Nearly 100 attended a similar meeting at the Saginaw Valley Research and Extension Center near Frankenmuth March 6.

Michigan State University Extension and Purdue University Extension teamed with the Michigan Soybean Promotion Committee and Indiana Soybean Alliance to bring the latest recommendations for managing soybean diseases and irrigation to farmers who attended the program in Shipshewana.

Michael Wunsch, Ph.D., plant pathologist at North Dakota State University, discussed the life cycle of white mold or sclerotinia, which persists in the soil for years. The cool, wet summer that most of Michigan experienced in 2014 created ideal conditions for the development of the disease.

"When soil temperature and moisture favor apothecia production," Wunsch said, "sclerotia – the black fruiting bodies – are developed within the host soybean plant and then deposited in the soil. Apothecia, the mushroom-like bodies that emerge from the soil, are a result of germination of the sclerotia, which have been waiting for conditions that favor germination. They release spores into the canopy, where they colonize dead blossoms on the soybean plant, causing the initial infection." The infection spreads between plants that are in direct contact. The secondary plant-to-plant spread of white mold is underappreciated, according to Wunsch.

"The timing of moisture is more important than the amount," he said. Wunsch explained that apothecia produce spores that thrive in constant-moisture environments, but moisture fluctuations sharply reduce the production of apothecia. Irrigating often with small amounts of water favors the spread of white mold. Wunsch said his research showed that reducing irrigation frequency sharply reduced the development of white mold disease, even when the total irrigation amount remained unchanged.

"Although you can't control weather," Wunsch said, "you can regulate irrigation." He recommended that farmers reduce the frequency of irrigation and increase the amount of water applied at any one time to decrease the spread of white mold.

"Under most circumstances, apothecia are likely to be present under the canopy during bloom when high soil moisture has been sustained for seven to ten days," according to Wunsch. Apothecia production is favored by soils that retain water, but sandy soils can be favorable for apothecia when high soil moisture is sustained.

"Cool temperatures favor the development of apothecia, when less moisture is lost to evaporation," he said. When temperatures are low, less moisture is needed for white mold infection. Apothecia will continue to produce and release spores as long as the

All white mold photos courtesy of Michael Wunsch, Ph.D., and North Dakota State University

soil stays moist. They die when they dry out.

"Reducing plant populations may be a better tool for managing white mold than wide row spacing," Wunsch said. Moderately reducing plant populations is expected to reduce sclerotinia regardless of row spacing by reducing plant-to-plant spread of disease.

Planting 30-inch rows has been used as a tool to control white mold. According to Wunsch, increasing row width might decrease the incidence of white mold, but does not always increase yield. Wide row spacing is most likely to optimize yields when white mold pressure is high early in the bloom stage and canopy closure occurs late. "If those conditions occur later in the growing season, however, yield reduction is likely in wide rows," Wunsch said.

Late cultivation should help dry the soil and reduce the active apothecia in the soil. "Cultivation disrupts the four-week incubation period of the apothecia," he explained.

"When crop management techniques aren't enough to reduce the threat of yield loss from white mold, fungicide use may be warranted," Wunsch said. Research trials in North Dakota have shown Endura to be one of the most effective fungicides in controlling white mold. Additionally, when good fungicide coverage to blossoms is achieved, Proline is very effective against sclerotinia, according to Wunsch. "When achieving good fungicide coverage to blossoms is difficult, effectiveness of Proline against sclerotinia is reduced," he said.

"Applied at early bloom or earlier," Wunsch said, "Cobra herbicide (lactofen) reduces sclerotinia but does not always increase soybean yields. It's best used at higher rates of white mold infection."

Foliar fungicides and partially resistant varieties are useful tools for managing white mold, but Wunsch cautioned participants that neither provides complete disease control. Fungicides for white mold control differ in effectiveness and should be selected carefully. Timing is critical for application because the fungicide must be deposited within the leaf canopy. If weather conditions are favorable for white mold at early bloom, Wunsch explained that the best time for applying fungicide should be before canopy closure at early R2 stage. "Coverage of blossoms is critical," he emphasized.

Field pathologists Martin Chilvers, Ph.D., of Michigan State University and Kierstan Wise, Ph.D., of Purdue University described their research into fungicide effectiveness on white mold and sudden death syndrome (SDS). Cool, wet weather produced significant white mold, especially in the Thumb area of Michigan and some pockets of northern Indiana.

According to Chilvers and Wise, new products are available to treat these diseases with greater success than past products. But they said rescue fungicide applications are not cost-effective. When the mold is visible on the soybean plant, it is too late to expect control from fungicides.

Chilvers said Endura and Approach provided the most consistent control in 2013 tests of more than 20 fungicides. Cautioning that the canopy has to be well covered, he said control depends on the type of coverage you can get with your sprayer.

"Uniform seeding rates and seed emergence, seed depth and timely planting all affect the timing of canopy closure," explained Shaun Casteel, Ph.D., Purdue soybean specialist.

"I want them green to the eye by the Fourth of July," Casteel said. "I want the canopy closed by the time the plants are flowering to get the most benefit of the sunlight and for moisture conservation."

Pale green soybean plants were seen in many fields last June because of conditions that were cooler

Soybean Growth Stages		
R1	Beginning Bloom	An open flower at any node on the main stem
R2	Full Bloom	An open flower on either of the two uppermost nodes on the main stem
R3	Beginning Pod	A 3/16 inch pod at one of the four uppermost nodes on the main stem
R4	Full Pod	A 3/4 inch pod at one of the four uppermost nodes on the main stem
R5	Beginning Seed	A seed is 1/8 inch long in a pod at one of the four uppermost nodes on the main stem
R6	Full Seed	A pod containing a green seed that fills the pod cavity is at one of the four uppermost main stem nodes
R7	Beginning Maturity	Any one pod is a mature color
R8	Full Maturity	95% of pods have reached mature color

and wetter than normal. Plants lacked nitrogen, and Casteel recommended applying nitrogen at a rate of 30 to 60 pounds per acre in that situation.

Casteel said, "Uniform seed depth can improve nodulation, and shallow seeding can reduce nodulation because root hairs are close to the surface where it can be too hot. Available soil nitrate inhibits nodulation, while other forms of nitrogen are ok."

"Cooler temperatures cause fewer nodes to develop," Casteel said. "Low temperatures in August and September slow plant development, and plants don't get back to normal," he added.

Casteel stressed that farmers should manage planting for maximum emergence. "Variety is the biggest driver of yield," he said, "and the number of pods and seed size are the biggest predictors of yield."

Mike Staton, Michigan's state soybean extension specialist, talked about growth stages of soybeans from the standpoint of managing white mold. "Most critical are R1 up to R3. Stage R3 is the end of the window for glyphosate application," he said, "and R4.5–5.5 is the most critical period for yield loss."

Staton also instructed participants in how to change sprayer setup and nozzles to optimize them for disease control (see related article on pages 8-9, "Equipping and Operating Sprayers to Control Insects and Diseases in Soybeans" by Mike Staton).

Lyndon Kelley, irrigation management educator with both Michigan State and Purdue, pointed to a need to be careful about managing water. He said, "While farmers should start irrigating at the R2 to R3 stage, the biggest response to irrigation comes at stage R3. You don't want to create consistently high moisture in the canopy."

Echoing Wunsch, Kelley said less frequent irrigation with more water not only slows the development of white mold, but also requires less water in total. "Irrigating more frequently with less water actually uses more water over the long run," he said.

Looking to the future, Kelley told farmers to be prepared for regulatory oversight of water use unless they do a better job of conserving and managing water resources voluntarily.

Bruce MacKellar, MSU Extension educator, discussed Irrigation Scheduler, a Microsoft Excel-based program that helps growers time irrigation applications based on a field's water-holding capacity of the soil, stage of crop growth, rainfall and irrigation water. He said this recently updated program will automatically obtain weather data from the nearest Enviro-weather station as long as the user has Internet access. The stations use wind speed, relative humidity and net solar radiation, in addition to temperature, to estimate crop evapotranspiration demands.

"Although growers still need to add their irrigation and local rainfall measurements into the program," MacKellar said, "the update should greatly reduce the workload of obtaining and entering data. It bases crop development for soybeans and corn on growth models instead of calendar date, which should improve accuracy in estimating crop development and associated water needs." The program produces a report for the field that can be used for reporting water use to MDARD.

A Microsoft Excel version of Irrigation Scheduler was developed as a spreadsheet alternative to the web-based scheduler, which faced challenges in consistently interfacing with growers' computers, according to MacKellar. The Michigan Soybean Promotion Committee provided funding for updating the tool to automatically download weather data from MSU Enviro-weather stations for the 2015 growing season. MacKellar said the updated MSU Irrigation Scheduler Spreadsheet should be available from http://msue.anr.msu.edu/resources/irrigation by the time of this publication.

Don Stall, two-time overall winner of the Michigan Soybean Yield Contest, shared his experience with raising high-yielding irrigated soybeans. Stall, of Charlotte in Eaton County, topped 102 bushels in his 2014 winning entry. He said growers should use their own experience to make decisions for their farms. He knows his land and incorporates his experience, rather than simply following recommendations that worked on other producers' farms. As an example, the field that yielded his award has only one tile line and the sandy soil has a low cation exchange capacity (CEC).

The workshops were part of the Soybean Management and Research Technology project, a partnership between Michigan State University Extension and the Michigan Soybean Promotion Committee. The project helps Michigan producers increase soybean yields and farm profitability.

Online Leadership Training Modules Available

State soybean organizations recognize the critical role farmers and board members play in their organization's success and the success of the entire industry. They also recognize that in today's challenging environment it is vitally important to identify and develop current and future farmer leaders.

To fill this need, United Soybean Board, along with several state soybean checkoff organizations including the Michigan Soybean Promotion Committee, funded and developed a national online training website called Ag Leader Source.

Any soybean farmer can gain access to the site's training modules, which include "Good Governance: Roles and Responsibilities of a Board Member," "Parliamentary Procedures," "Financial Oversight," "Strategic Agendas," "Team Effectiveness" and "Strategic and Performance Management."

While many of the online modules are geared toward developing existing soybean board members, any soybean farmer can head online to learn more and use the modules.

Training sessions are available under the "New Board Member," "Current Board Member" and "Recruiting Board Member" sections of the site.

Coming webinars include "Interpersonal Intelligence" on June 22, "Critical Thinking" on July 1 and "Strategic Thinking" on July 21.

Soybean farmers not on a state soybean checkoff board can register for the training sessions and webinars by visiting www.agleadersource.com. For more information about the site, contact Linda Snell at lsnell@lblstrategies.com or 847.274.3061.

Science Denial and Today's Consumer

By: The Center for Food Integrity

Overwhelming scientific consensus tells us many things about the world around us. For instance, science says genetically modified foods are safe to eat, yet consumer skepticism is still widespread. Those dedicated to improving lives through science-based technology and innovation are left asking, "Science says it's so, so why is there still debate?"

It's clear that simply having science on your side is not enough to encourage and support informed decision-making. New research conducted by The Center for Food Integrity (CFI), partially funded by the Michigan Soybean Promotion Committee, sought to better understand how to introduce science and technical information into the public discussion so it is at least considered in the consumer's decision-making process.

"Even though humans are not soy's largest consumer – that title goes to livestock – 91 percent of our Michigan-grown soybeans are genetically modified, and consumers are asking us about safety," said Gail Frahm, executive director of the MSPC. "By supporting research through a credible, unbiased organization such as The Center for Food Integrity, MSPC helps soybean promoters and others within our industry craft messages to use when visiting with consumers."

In the research, early adopter moms in Michigan – those who actively seek information and are looked to as thought leaders – expressed greater concern than their peers nationally toward a variety of food issues, including the nutrition of processed foods, chemical additives, hormones in food from animals, the nutritional value of frozen and canned vegetables, genetically modified ingredients and food from animals treated with antibiotics.

The research found that Michigan foodies often share information about cooking, nutrition and recipes with others, while seeking information on food ingredients at a much higher rate than the nation's population. Further, while they were more likely to support farmers in their community by buying local, they were also more likely to believe local foods are more nutritious and less processed, therefore healthier.

When asked about their support for increasing soybean and animal processing capacity by adding facilities in Michigan, more than half of the consumers surveyed believed there would be a strong benefit to the state. Specifically, consumers were most supportive of the additional jobs that would be created and contributions that soybean-processing facilities would make to Michigan's tax base and to the economic health of the state. Foodies were most supportive of the benefits the facilities would provide.

Because topics related to food are meaningful and relevant to Michigan consumers, the way we introduce technical and scientific information to them is crucial. The research shows that to effectively reach these audiences, we must first establish a relationship by demonstrating that we understand, appreciate and share their values.

Simply having science on your side is not enough to encourage and support informed decision-making.

In addition to using shared values, other findings from the research provide guidance for creating and sharing information that supports informed decision-making:

- Make sure it's believable. When people are introduced to information about technologies perceived as being new and controversial, especially in light of hearing conflicting claims by those attempting to gain favor for their side, they'll first attempt to determine whether the new information is believable.
- Identify the groups to engage. Who are the opinion leaders within those groups? What are their values and concerns? Who are the likely sources they view as credible? Listen to their

concerns and understand their values before reaching out to them.

- Meet the audience where they are. Select the communities important to you in the digital and physical spaces where conversations about food and agriculture are taking place. Be a good neighbor when you "move in" to the community and remember that the way you choose to engage will determine how your new neighbors respond.
- Commit to engaging over time. Building trust is a process, not an event. Authentic transparency and continued engagement will encourage objective evaluation of information that supports informed decision-making.

Increased interest in how food is produced should be embraced by consumers, farmers and others across the food system. But with that interest comes an obligation to actively and beneficially engage consumers so they can objectively examine and make informed decisions based on the best available information.

Visit www.foodintegrity.org/research/2014-research to download the results of CFI's new consumer trust research, "Cracking the Code on Food Issues: Insights from Moms, Millennials and Foodies." Click the New Webinars tab to register for CFI's free research webinar series.

Education Days to Replace Ag Expo

When Michigan State University officials decided to transition Michigan Ag Expo to a series of educational events, they wasted no time working toward the goal of serving Michigan agriculture producers by honing in on the specific needs of the diverse commodities, crops and livestock grown in Michigan.

A newly formed steering committee will play an instrumental role in establishing a series of agriculture education days hosted by Michigan State University beginning in 2016. "The committee is looking for your input," says Mike Kovacic, director of MSU College of Agriculture and Natural Resources Stakeholder Relations.

Kovacic says the days will be designed to offer specialized educational events held throughout the year for those in Michigan's food and agriculture industry. The agriculture education days will replace Ag Expo, held annually in mid-July for 35 years.

"This change was not an easy decision and was made after consultation with many industry groups, commodity leaders and vendors," said College of Agriculture and Natural Resources Dean Fred Poston. "This gives us an opportunity to hone in on the specific needs of the vastly different types of commodities, crops and livestock grown in Michigan and provide that information in a way that producers have told us they want it."

The steering committee, comprising commodity and industry representatives, will work to ensure the needs of the industry are met, leveraging the university's resources, as they determine what these agriculture education days should look like.

The committee will work throughout this year so a high-value experience can be offered in 2016 and beyond. One of the first steps in the process is to survey producers and industry representatives to determine topics, locations and program formats.

Questions? Contact Mike Kovacic at 517.355.8469.

Government Affairs News

By: The Frederick Group

There is an old adage, "Never watch law or sausage being made. If you have to choose, choose sausage." What you end with is often very different from what you started with.

The Michigan Agriculture Environmental Assurance Program, or MAEAP, will likely see changes this year. The Groundwater Protection Fee is scheduled to sunset at the end of the year. Farmers pay into this fund through the fee on nitrogen fertilizer.

First, let's review the MAEAP program. Since its inception, MAEAP has certified more than 2,500 Michigan farms and the Michigan Department of Agriculture and Rural Development has a goal of increasing the number of certifications to more than 5,000 farms. Since 2011 alone MAEAP verified farms have:

- Prevented approximately 109,000 dump trucks full of sediment from entering waterways;
- Prevented enough nitrogen from entering groundwater to contaminate 83,000 Olympic-sized swimming pools;
- Prevented enough nutrients from entering waterways to cover nearly all of Houghton Lake in algae;
- Implemented nearly 17,000 acres of buffer and filter strips;
- Placed more than 800,000 acres of land under nutrient management plans.

Furthermore, more than 10,000 additional farms have begun working on MAEAP and implementing conservation practices. The benefits of MAEAP are legal liability protection, Right to Farm protection, and it demonstrates that voluntary programs can be successful without the need for burdensome regulations.

Recall last summer's Lake Erie algae bloom that caused water quality problems. The state of Ohio is faced with a choice of onerous U.S. EPA regulations or imposing substantial state regulations on the agriculture industry to control runoff.

To preserve Michigan's program, Governor Snyder is proposing fee increases. Moreover, several stakeholders are proposing program changes. All in all, we should anticipate changes in fees and quite possibly the program itself.

Representative Dan Lauwers and Senator Mike Green have spearheaded a legislative workgroup and assembled the various stakeholders to discuss changes to the program. Several workgroup meetings have been held to discuss fee changes and review the MAEAP program.

Although, the Governor has proposed several fee increases to MAEAP, some stakeholders proposed changing the fee structure to broaden the fee and lower the rates.

Stakeholders have also proposed changes to the way MAEAP operates and how it collects fees. Here are a few highlights of the numerous proposals:

- Require a sales reporting audit of the program;
- Retain and extend the sunset of the program to ensure legislative review and oversight;
- Broaden the base of fees to include nitrogen, phosphorus and potassium fertilizers;
- Provide funding for assessing new technologies for farm practices and environmental protection.

With the current fee structure set to expire at the end of the year, an agreement will need to be forged to continue the program. It is anticipated that the legislature ultimately develop an appropriate fee structure and other programmatic reforms.

If you feel passionate about the MAEAP program we encourage you to get engaged and let your legislators know what the MAEAP program means to you. MAEAP is an important program for the agricultural industry because it strengthens environmental protections and encourages best practices.

Please feel free to contact us if you have any questions or if we can be of service:

216 N. Chestnut St.
Lansing, MI 48933
517.853.0413

Michael Frederick is part of your Frederick Group team which advocates for MSA members, including Mike Krcmarik of Owosso and Dick Stuckey of Alma, and promotes the Michigan soybean industry in the halls of state government.

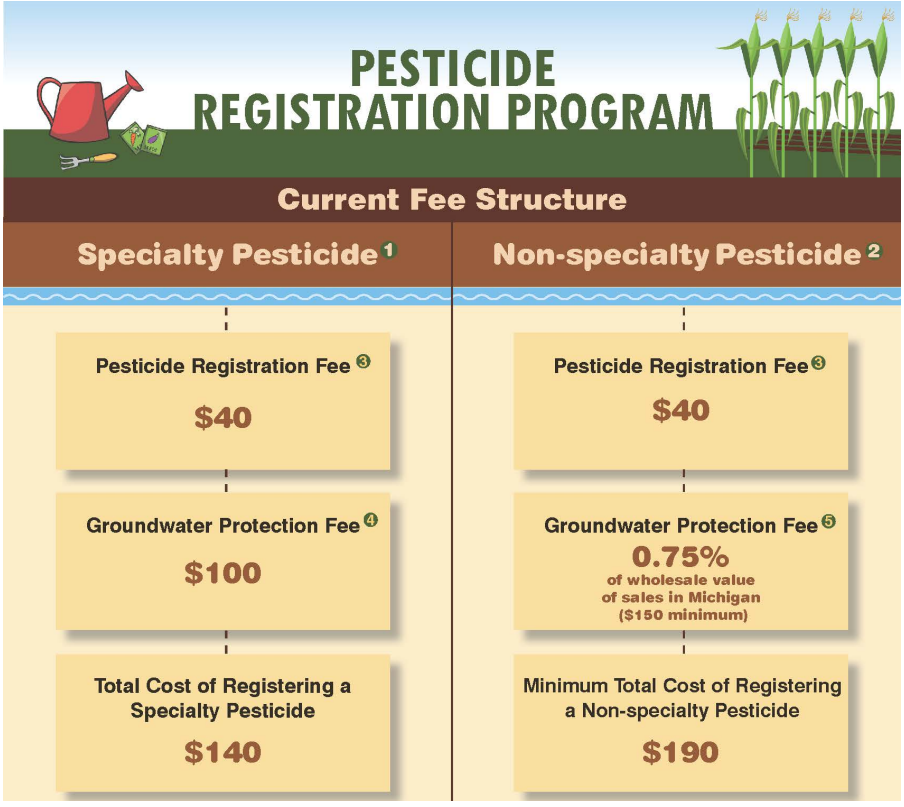
Michigan Department of Agriculture and Rural Development registers approximately 5,500 specialty (non-farm) use fertilizers and soil conditioners for sale and use in Michigan. Approximately 650 fertilizer facilities obtain a license to manufacture/distribute agricultural farm use fertilizers.

The Pesticide and Plant Pest Management Division (PPPMD) administers the fertilizer regulatory program and collects the fees. Registration, licensing and tonnage fees go to PPPMD for regulatory activities. The groundwater fees go to the Environmental Stewardship Division (ESD) to administer the Michigan Agriculture Environmental Assurance Program (MAEAP) and related groundwater programs.

❶Specialty (non-farm) means any fertilizer distributed primarily for non-farm use, such as use in home, garden and turf products. For purposes of this document, it also includes soil conditioners.

❷Tonnage fees are reported semi-annually. The January-June period is due July 31; and the July – December period is due January 31. Specialty packages under 10 lbs. are exempt from tonnage fees.

❸For example, 1 ton of 28% nitrogen fertilizer would pay $0.42 in groundwater fees and $0.10 in tonnage regulatory fees for a total of $0.52.



❶ Specialty pesticide means a disinfectant, sanitizer, or other home, yard, or garden pesticide.

❷Non-specialty pesticide is any pesticide that isn't a specialty product. Non-specialty products generally have wide-area, outdoor use typical in agriculture and turfgrass.

❸All pesticides pay a $40 per year registration fee. The registration year runs from July 1st – June 30th. The registration fee is used by the Pesticide and Plant Pest Management (PPPM) Division to enforce rules associated with safe and effective use of pesticides. Michigan registers approximately 15,500 pesticides a year.

❹Each specialty pesticide is assessed a $100 groundwater protection fee (GWPF). The GWPF is collected by PPPM but transfered to the Environmental Stewardship Division to support the Michigan Agriculture Environmental Stewardship Program (ESD).

❺Each non-specialty pesticide is assessed a 0.75% GWPF on the wholesale value of the product sales for use in Michigan. The minimum GWPF for non-specialty pesticides is $150 and that amount is due at the time of registration.

Michigan Department of Agriculture & Rural Development

Belong Soybean Voice
Membership Michigan
Lansing Seed Action Policy
REPRESENTATION Federal
Training Benefits

"I've met several legislators that have never set foot on a farm. We as farmers need to be visiting with members of the Capital and represent our land."
Jay Ferguson,
MSA Director

People making decisions in Washington, D.C. and Lansing 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 from the farm.

With college students making comments such as, "We don't need farmers because the grocery stores do a good job of putting food on the shelves," or "I'm a vegetarian and I can eat chicken wings because they grow back," there is a lot of education that needs to occur to our politicians and the public.

Protect your farm and way of life, join the Michigan Soybean Association today!

Are These Issues Important To You?

- Protecting your right to farm.
- Supporting farmers' freedom to operate without oppressive regulations.
- Supporting the use of soy biobased products.
- Keeping Michigan as a livestock production friendly state.

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

Membership Benefits:

- 5% member discount purchase incentive on all IntelliFarms equipment and free admission to grain school and workshops
- Monsanto BioAg is offering three options for use on your soybeans: 50 units of QuickRoots, 100 units of soybean seed with Optimize or 100 units of TagTeam LCO for all new or renewing 3-year or Lifetime memberships
- 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
- 10% multi-life discount for long-term care insurance with New York Life Insurance Company and an additional 15% marital discount
- Discounted registration to the Commodity Classic
- A 20% discount on an annual subscription to eLegacyConnect
- For 3-year and Lifetime memberships, a $50 certificate good for either Great Lakes Hybrids Roundup Ready or Genuity Roundup Ready 2 Yield soybean seed **AND** a $50 soybean seed certificate good for Renk Seed

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

Testify MICHIGAN CONSERVATION Discounts
Membership
Scholarships Advocate
Believe
Lansing Involvement Leadership

By joining the Michigan Soybean Association, you also become a member of the American Soybean Association. Membership in these organizations allows you to have a greater impact on the soybean industry at a state and national level. Make a decision to help influence the success of soybean farmers by joining today!

MSA 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.

*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 (circle 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:_____

FoodPlay Comes to Michigan Elementary Schools

By: Gail Frahm, Executive Director

The Michigan Soybean Promotion Committee is making a difference in the health and wellness of children in communities throughout Michigan. MSPC has partnered with FoodPlay Productions to bring FoodPlay, a national award-winning theater show that inspires and empowers children to make healthy choices, to Michigan schools.

Thanks to Michigan's soybean farmers through the MSPC, FoodPlay brought its cast of colorful performers, amazing feats of juggling, motivating messages, music, magic and audience participation to celebrate soy in April and May to ten elementary schools in the state. Elementary schools in Allendale, Alto, Custer, Flushing, Garden City, Hillsdale, Le Roy and Swartz Creek were included in this year's performances.

In response to the nation's alarming childhood obesity epidemic and the need for accessible nutrition education, the Celebrating Soy! FoodPlay tour reached up to 16,000 children and their family members. The FoodPlay program, which follows the Dietary Guidelines for Americans along with an interactive MyPlate scene, makes nutrition come alive for students, families and communities.

"Our partnership with FoodPlay is helping get a great message out to thousands of students throughout Michigan," said Laurie Isley, soybean farmer from Palmyra in Lenawee County, who is the outreach program area director on the MSPC board. "FoodPlay is effective in reaching children with important nutrition information, including the importance of healthy proteins like the ones found in the soybeans growing throughout Michigan."

FoodPlay makes good eating great fun, but its messages are serious. In the past 25 years, FoodPlay officials say, childhood obesity rates have doubled among elementary school children and tripled among teenagers. One in three children is overweight, and fewer than two percent of the nation's youth are meeting their daily requirements for good nutrition.

FoodPlay officials say that kids, on average, are drinking more than 600 cans of soda and consuming more than 150 pounds of sugars a year, missing out on recommended levels of fruits, vegetables and whole grains needed for optimal health. According to the Centers for Disease Control and Prevention, more than one-third of the nation's youth will develop diabetes if their eating and exercise habits don't improve.

During the fun-filled performance, children follow the antics of Johnny the Juggler, who dreams of becoming a juggling star but keeps dropping the balls. The problem? His unhealthy diet. With the help of "Coach" and children in the audience, Johnny learns how to juggle the foods he eats to wind up with a balanced diet. The performances also stressed a diet can include soyfoods such as soy smoothies, soynuts, soy yogurt, soynut butter, edamame, tofu and soymilk.

Connecting with Consumers

As part of the Celebrating Soy! FoodPlay tour, FoodPlay's live theater assembly was presented to children in grades P-8, and the ten schools were given follow-up materials to keep the nutrition and health messages alive at home and in school all year long. Follow-up materials were provided for teachers, students, parents, school foodservice personnel and health staff to help everyone work together to create healthy schools and healthy communities. According to USDA-sponsored evaluations, FoodPlay programs produce dramatic improvements in students' eating and exercise habits and trigger community-wide interest in building healthy environments.

Founded in 1982 by Emmy Award-winning nutritionist Barbara Storper, MS, RD, a leader in the field of children's nutrition, FoodPlay Productions has spread its message of good health to more than four million schoolchildren across the country.

With its traveling theater shows and media campaigns, FoodPlay Productions has been using the power of live theater to promote healthy eating and exercise habits to the nation's youth for over 25 years. For fun food tips, activities and free nutrition handouts, visit www.foodplay.com.

Connecting with Consumers Around the Dinner Table

By: Gail Frahm, Executive Director

Have you considered what consumers think about the food they eat and the role you play in providing that food? At the 2015 North American Leaders Session on Animal Agriculture, Elaine Bristol, Mary Kelpinski and myself met with other leaders nationwide to talk about the importance of engaging consumers in the discussion of food.

"I often blame disconnections of food topics on consumers being removed from agriculture, not farmers being disconnected from consumers," says Elaine Bristol, program coordinator for the Michigan Ag Council. "But communication is a two-way street, and by working for the Michigan Ag Council, I'm trying to do a better job of listening to consumers and having open-minded conversations about food."

It's obvious there's a disconnect between farmers and consumers when it comes to food and the commodities we raise – from soybeans and corn to swine, poultry, dairy and aquaculture. Numerous ideas were shared at the conference to connect consumers with modern agriculture.

Elaine Bristol

First and foremost, it's vital to create a relationship with consumers. Until we connect on issues that matter to them – such as their family, friends, hobbies, career, school – it's unlikely they'll trust what we have to say. We must learn to listen first and then ask questions. Only after engaging this way should we venture into sharing our thoughts on issues centering on food and modern farming practices.

At the conference, a consumer panel of Orlando-area millennials (the last generation born in the 20th century) shared its perspective on food topics. When asked how they seek information about food, panelists said they used Google searches and websites (regardless of credibility), and trusted friends and family to share knowledge and opinions about food.

When pressed, the collective panel told the audience they hadn't considered looking to farmers for food information and wouldn't know how or where to access

them. If panelists had the opportunity, they would ask farmers about food labels (including what qualifies a product as organic or free-range), whether farmers feel pressured by companies to use pesticides, food safety implications of using pesticides, and other general questions about food safety.


Mary Kelpinski

Other hot topics included the relevance of food labels (hormone-free, grass-fed, produced without antibiotics, humanely raised and more) and ingredient lists. Each panelist gave his or her personal definition of food transparency, as well as what they see as small farms and large farms. They discussed the challenges of cooking and the guilt related to buying and eating certain products.

Many of the topics and themes covered by the consumer panel are addressed at the Best Food Facts website, but we can start with having direct conversations about food and agriculture with our friends, family and neighbors.

Are you interested in telling your story before someone else does it for you? Consider becoming a guest blogger or posting recipes on Michigan Ag Council's website. You can also follow the council on social media or contact Elaine Bristol about opportunities for farm tours, spokesperson training and other events.

Mary Kelpinski, president of the Michigan Ag Council, explained an event idea shared by the Wisconsin Soybean Marketing Board. "They hosted three separate progressive dinners at three downtown Madison restaurants. During the events, attendees had the opportunity to share a table with a farmer to learn about how the food was raised. Among the people invited were dietitians, health professionals and culinary students. This is something we could do in Michigan."

Overall, the resounding message from consumers is clear. They want farmers to be transparent about the process of producing their food, all the way from the farm, to processors, through retail suppliers and finally to consumers.

Become involved today! Contact Elaine Bristol at 517.679.5573 or elaine@miagcouncil.org to discuss opportunities to listen to consumers and connect with them around the dinner table.

Resources for Talking with Consumers:

Best Food Facts	***www.BestFoodFacts.org***
Center for Food Integrity	***www.foodintegrity.org***
Michigan Ag Council	***www.michiganagriculture.com***

Take a Consumer to Breakfast on the Farm

By: Noelle Byerley, Executive Assistant

Just knowing a farmer makes consumers more positive toward agriculture. At Breakfast on the Farm (BOTF), Michigan farmers open their doors so consumers can see how farmers care for animals, protect the environment and produce safe, nutritious food. Visitors meet the families behind the food they eat and learn about agriculture from those who know it best – the farmers themselves. Thousands of families attend these events for a free breakfast and to learn firsthand how modern farms operate.

Sponsored by Michigan State University, Breakfast on the Farm builds trust between consumers and farmers. Evaluations of previous BOTF events show a marked increase in consumers' trust toward farmers after attending one. Plan to take some non-farm friends to one of five events scheduled for 2015:

- July 11, hosted by Stakenas Farms in Free Soil, Mason County
- July 25, hosted by Roto-Z Dairy Farm in Snover, Sanilac County
- August 8, hosted by Hood Farms Family Dairy in Paw Paw, Van Buren County
- August 15, hosted by Wheeler Dairy in Breckenridge, Gratiot County
- August 29, hosted by Pleasant View Dairy in Jonesville, Hillsdale County

The Michigan Soybean Promotion Committee will sponsor and attend each BOTF event to provide information on the health benefits of cooking with soy, the importance of livestock as soybean's largest customer and the environmental benefits of soy-based products.

All events begin at 9 a.m. and end at 1 p.m. There is no cost to attend or take the tour, but tickets are required for the free breakfast. For more information about BOTF and a list of ticket locations, visit www.breakfastonthefarm.com.

Pioneer® brand T Series Soybeans are built to produce and protect yield.

The traits and technologies in T Series Soybeans can help break your yield records with top performers that fit your ground to a 'T.' For more info talk to your Pioneer sales professional. **Pioneer.com/Tseries**

T Series Soybeans

PIONEER PREMIUM SEED TREATMENT®

Pioneer Premium Seed Treatment for soybeans is applied at a DuPont Pioneer production facility or by an independent sales representative of Pioneer. Not all sales representatives offer treatment services, and costs and other charges may vary. See your Pioneer sales representative for details. Seed treatment offering exclusive to DuPont Pioneer and its affiliates.