

# Research Highlights

## LATE-SEASON WARMTH HELPS WITH CORN MATURITY

The 2018 spring planting season was marked by lengthy delays due to persistent periods of wet weather. While the moisture received in the spring was very beneficial, as the weather turned dry across most of Michigan in July, planting delays caused headaches for producers that spent most of the season playing catch up with crops in very different stages of growth.

As the calendar switched from May to June, many planned corn fields were still left unplanted. Soon after, the switch was on from planting corn to soybeans. While most of the area’s fields were planted by June 15, there were still surprising numbers of acres that had not been planted until conditions dried out in the third week of June.

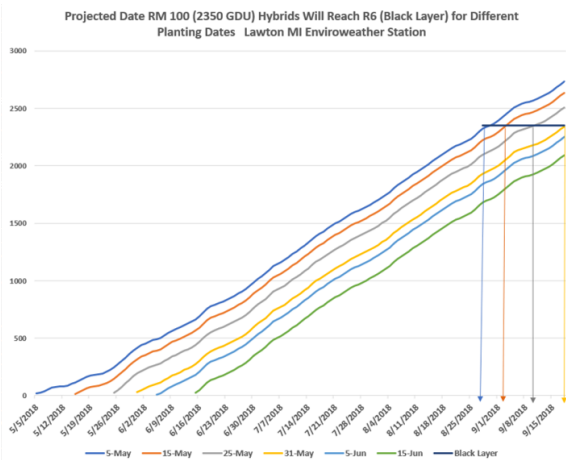
While it is unclear when the first killing frost will occur in southwest Michigan this year, it is a sure bet that the much warmer than normal temperatures we have seen in September, along with a return to favorable rainfall, have helped the crops greatly. The chart to the right shows when 100-day RM corn should have or potentially will reach physiological maturity for various planting dates in the Lawton area of Van Buren County.

The chart to the lower right reflects the Baskerville-Emin 86-50 cutoff method for calculating growing-degree-days (GDDs). The BE GDD system does not count temperatures above 86 degrees Fahrenheit as providing additional corn growth potential. This suggests that 100 RM corn planted by May 31 should be at or close to black layer by Sept. 18, 2018. Corn planted in June may still have a ways to go to reach physiological maturity. The current 6-10 and 8-14 day outlooks are calling for a return to more normal to cooler than normal weather for the period.

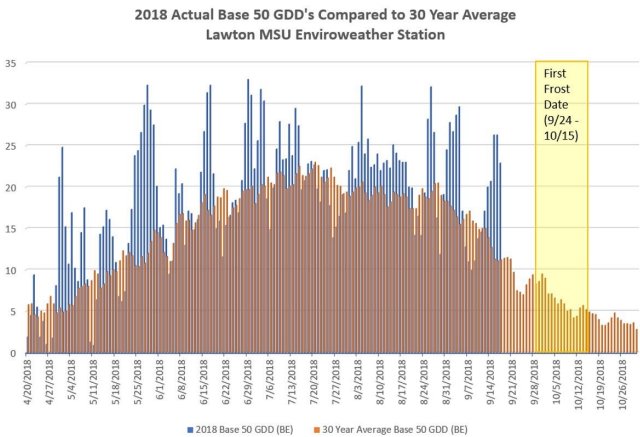
Corn at physiological maturity can be anywhere from 28-35 percent moisture, depending on a combination of factors, including hybrid characteristics such as husk leaf number and tightness, relative humidity, temperature and wind. Drying of corn grain occurs much faster during extended periods of hot and dry conditions. It takes approximately 30 GDDs to remove 1 percent of moisture in corn grain. Early planted corn had the opportunity to be exposed to 10 days of 25 GDD or warmer temperatures since reaching physiological maturity. Robert Nielsen, Purdue University corn agronomist, has written an excellent resource, “[Field Drydown of Mature Corn Grain](#),” which discusses this process more fully.



Corn in early grain fill on Aug. 7, 2018, near Lawrence, Michigan.



Projected date RM 100 (2350 GDU) hybrids will reach R6 (black layer) for different planting dates. Source: MSU Lawton Enviroweather Station.



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# Cass County

## 2017–2018 ANNUAL REPORT

### BY THE NUMBERS

- 100+ years of serving Cass County
- 12 MSU Extension professionals provided programs in Cass County
- 6 food establishment managers received ServSafe training
- 860 youth participated in 27 4-H clubs run by 213 adult volunteers
- Over 900 youth and adults were reached through health, nutrition and physical activity programs
- More than 225 Cass County residents participated in Ag programs
- MSU Extension conducted 19 Pork Quality Assurance Site Assessments

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### MESSAGE FROM THE DISTRICT COORDINATOR

Over the past year, Michigan State University (MSU) Extension partnered with Cass County to continue strengthening youth, families, businesses and communities. MSU Extension staff are grounded in local relationships and serve by bringing the university’s research and resources to provide outreach and education in the areas Cass residents need it most.



A great example of how the investment Cass County makes in MSU Extension comes to life was the **Imagine Cass!** community visioning project that started this year. With the county administrator as the champion, community leaders united with an application to MSU’s Sustainable Built Environment Initiative. Cassopolis was chosen as one of the select projects in the state for this urban design and renewal program. Three meetings were held with over 200 community members involved to develop a renewed downtown Cassopolis vision. Support for this effort was provided by MSU Professors, graduate students, MSU Extension educators, specialists and the Cass county community. This initiative set the tone for future partnerships and improved relationships in the county. Not only did Cassopolis get renderings for a newly envisioned downtown corridor, but this project fostered a renewed sense of community from which to grow.

MSU Extension is passionate about serving Cass County, and we are proud of the impacts we have made over this last year. Thank you for your continued support and for partnering with us to make a difference.

Julie Pioch, District 13 Coordinator

### STAFF HOUSED IN CASS COUNTY 2017-18

- Hailey Harmon—4-H Program Coordinator
- Jon Laporte—Farm Financial Management Educator
- Nora Lee—Community Nutrition Instructor
- Patty Dohm—Office Manager
- Erin Young —Secretary
- Wendy Walker—Public Policy Educator
- Beth Ferry—Pork Educator
- Stephanie Consford—4-H Program Coordinator



# Program Highlights



*Graduates of “Eat Healthy, Be Active” series held in Dowagiac at the Pokagon Band commodities kitchen.*



*Cass nutrition programming receives media coverage at a food give away event at First Christian Church in Dowagiac.*



*Volunteer firefighters use a pedal tractor to show youth at 4-H Farm Safety program how they would stabilize someone for safe removal after a rollover.*

## EATING HEALTHY & CHANGING HABITS

When it comes to eating and drinking, making the healthier choice means choosing food and drinks from a range of food groups that are full of nutrients. Making healthy food choices also includes planning ahead, cooking, budgeting and food safety. MSU Extension brings healthy eating education to those who need it most in Cass County, specifically students, adults receiving supplemental nutrition assistance and seniors. In 2018, 61 adults and 231 students completed a series of programs designed to help participants change habits and eat healthy. A total of 332 adults and 276 youth were present for one-time presentations where physical activity and nutrition lessons were provided.

## CHANGING ENVIRONMENTS FOR GOOD NUTRITION DECISIONS

It isn't enough to work only on changing individual behavior for health living, it is also important to work on changing the policies, systems and environments within which we live, work and play. In 2018, MSU Extension offered coaching and technical assistance, encouraging strategic changes to promote healthy decision making in the Cassopolis schools with the Smarter Lunchroom initiative. Technical assessment and advice was provided to food service managers who implemented easy, no-cost and low-cost changes to encourage students to select, eat, and enjoy

## 4H IN CASS COUNTY

The Cass County 4-H Program Coordinator provides management to 213 adult volunteers who mentor and lead 27 clubs and 860 youth enrolled in the 4-H program. One Cass youth attended the Citizen Washington Focus trip and 45 attended Exploration Days at Michigan State University in June, 2018.

A strong partnership with the Cass County Youth Fair provides 4-H youth with an opportunity to showcase 4-H projects worked on throughout the year. Projects range from large livestock, to pets, to crafts and cooking. Each project comes with a story and an experience of hands-on learning, building responsibility, discipline and pride along the way.

With the help of a fun and engaging learning activity called the *Commodity Carnival*, 155 adults and children at the Cass County Fair's Kiddie's Day were exposed to the real-world challenges farmers face in order to successfully bring commodities, such as hogs or a bushel of corn, to market. Through fun and interactive games, the *Commodity Carnival* helped young people look at agriculture as a business and better understand the risks farmers and ranchers in Michigan face in bringing our food to market.

# Research Highlights



*Adult beetles congregating around marestail plant to lay eggs in a soybean field in SW Michigan*



*Yield impact from AGB white grub feeding in fall of 2017. Ears in center of picture are smaller and developmentally behind non-impacted plants.*



*Yellow spots and areas with brown necrosis in leaves are telltale symptoms of soybean sudden death syndrome.*



*Torrent of water flowing through a “dry” culvert in central Cass County, June 9, 2018.*

## FIELD RESEARCH TO STUDY CONTROL MEASURES FOR ASIATIC GARDEN BEETLES IN 2017-18

Last year, it was reported that MSU Extension had seen a resurgence of a field corn pest known as Asiatic Garden Beetles. The damaging life cycle stage of this pest is the larvae, which are white grubs. They feed on corn roots, causing stunted plants, population and yield loss. The adults of this pest seemed to be particularly attracted to marestail, a weed species that has become very widespread and problematic in our area because of its resistance to glyphosate (Roundup), one of the most commonly used herbicides in soybean production. It is thought that marestail is particularly useful to the pest because the plant can germinate in either the spring or the fall, it's roots providing a food source for the larvae into late fall, before it migrates below the frost line to overwinter in the soil. Soybean fields with high levels of marestail that are rotated to corn are particularly prone to damage from this pest. In 2018, MSU Field Crops Entomologist Dr. Chris DiFonzo, with funding provided by the Michigan Corn Growers, established several research plots across Michigan to study the best ways to avoid damage from the pest. Soil insecticides were applied in combination with seed treatments to evaluate effectiveness of control. This research is on-going, and yield data will be collected in late fall 2018.

## SOYBEAN SUDDEN DEATH SYNDROME (SDS)

Symptoms of SDS became visible in southwest Michigan fields in Spring 2018. Wet feet in soybean plants in early spring often increase the chance for root rots. This spring's prolonged wet conditions in May and June set the stage for SDS infection. Up until recently, MSU Extension has not seen substantial visual symptoms of the disease. However, the telltale yellow spots and yellowed areas with brown necrosis in soybean leaves were visible in infected areas in fields this year. There is no rescue treatment for the disease, only the opportunity to keep good field notes so that growers can select partially resistant varieties in future years when soybeans are being raised on the field again. It is also important to note that the disease can be spread by movement of soil from infected fields through tillage equipment, or other means. Farmers should power wash equipment as it comes out of fields to reduce the potential spread.



# Local partnerships help MSUE make impacts in Cass



During the first day of Entrepreneurship Camp, participants created collages to represent their perceptions of an entrepreneur.

A three-day entrepreneurship camp held in July was part of a new partnership with Educational Talent Search (ETS) at Southwestern Michigan College (SMC) in Dowagiac. The camp offered five high school youth a chance to explore entrepreneurship as a career.

From a motivational discussion with Dowagiac Mayor Don Lyons, to vendors at the Dowagiac Farm and Artisan Market, local entrepreneurs shared their stories and words of wisdom. A panel of three local entrepreneurs helped wrap up the experience and provide feedback to the kids based on participants’ “business in a bag” concepts.

One participant shared that she will be able to create, plan and develop a business. She learned ways to be successful as an entrepreneur and was reassured that it's okay to take risks and make mistakes. “I had a lot of sharing opportunities that will hopefully help me with breaking out of my shell. I had a first-hand opportunity talking to real life entrepreneurs and hearing their stories,” said the Cass county youth. All the girls agreed to continue to develop their workforce readiness skills and to use the new skills they learned at camp as they looked for educational and career opportunities.

The entrepreneur program, as well as “Golead Camp,” a three-day leadership activity (involving 13 youth from Cass) were taught by MSU Extension Educators and funded in part by SMC’s Educational Talent Search program in 2018. MSU Extension has embarked on a multi-year relationship with SMC to provide training for the students eligible for the program. This collaboration leverages resources from both to enhance the academic and personal success of young people. The ETS advocates for the successful completion of high school and for youth to advance on to college or training after high school. The aim of ETS is to provide opportunities for students to reach their maximum potential—a natural fit for MSU Extension’s 4-H youth development curricula.

**More with Southwestern Michigan College:** SMC hosted an Agriculture Awareness day for local high school FFA Chapters and ag programs. MSU Extension Educators were there to inform 60 youth from Cass, 40 from Berrien and 20 adults about career opportunities in agriculture—specifically as it relates to technology, marketing and production. Family farming and women in agriculture were highlighted as a way to make the information personal and interesting to the young people.

**Speaking of partnerships and ag awareness:** A huge thank you to Midwest Energy and Communications (MEC) for housing and supporting Farm Safety Camp 2018. This successful program was attended by 40 youth who learned about safety issues related to grain bins, pesticides, propane, lawnmowers, tractors, ATV and animals. All the youth said they learned something new and how to prevent and handle dangerous farm situations. “I am confident every youth that attended this camp went home knowing how to keep themselves safe on a farm, whether it’s their own or a relative’s farm, or in a future agriculture job,” said the Cass County 4-H Program Coordinator. “The youth will take this knowledge they gained and share it with others. Cass 4-H is looking forward to a continued partnership with MEC as well as holding this program again, to lower the cases of farm related accidents in the Southwest Michigan area.”



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# SUPPORT TO THE PORK INDUSTRY Program Highlights

Cass County is home to almost 400,000 pigs, making a significant contribution to the U.S. food supply. Pork production in Cass is uniquely diverse in the species raised and types of farms - including traditional commercial production, direct farm and specialty sales, and a large number of youth pork producers. The MSU Extension Pork Team is continuously assessing the needs of each of these groups and is the principal provider of quality assurance programming (QAP) for this diverse group of producers. Quality assurance verification is a requirement for marketing pigs to most processing companies. Producers must have documentation of completion of education and on-farm site assessments provide by MSU Extension.

In 2017-18, the team completed studies and provided education to ‘move the needle’ on consumer acceptance and attitudes towards pork production, giving participating farmers a better understanding of what is driving the market for the 90,000+ pigs per year they are selling.

With the onset of new Veterinary Feed Directive (VFD) rules in the past year, MSU Extension has assisted farmers and food-animal veterinarians gain a better understanding of the new regulations, how to best adapt to this new system, and build methods in their production to meet these new parameters. This work has helped farms follow the new VFD rules, while being able to provide adequate care to the animals and address health concerns. As the pork industry in Cass County continues to grow and flourish, MSU Extension will continue to work hand-in-hand with farmers to address needs, implement new technology and troubleshoot issues that may arise.



Pork Quality Assurance advisor training hosted by MSU Extension in late 2017



MSU Extension Field Crops Educators and Specialists work in SW Michigan during the growing season to identify and help solve production issues. See RESEARCH insert.

## SHINING A LIGHT ON AG SOLAR

In December 2017, policy changes by the Michigan Public Service Commission made utility-scale solar projects more profitable. This triggered aggressive solicitation by solar developers to lease or buy land owned by farmers for solar projects. In response, a multidisciplinary team of MSU Extension Educators provided training to 452 participants, including six from Cass County, during seven workshops held around the state. The program focused on policy, community planning and zoning, legal contract land leasing, tax issues, and the integration of solar with existing agricultural systems using evidenced based practices. In addition to the positive outcomes of knowledge and confidence, the program series resulted in new partnerships with agencies and associations involved in the solar industry. Overall, the program series provided Michigan residents and leaders with a unique opportunity to better understand the solar industry, its impact on local landscapes, personal finances, and the economy, as well as the role of local policy development in helping shape the state’s energy future while balancing competing interests.



Utility grade solar projects are being sited throughout Michigan.