



Kalamazoo County 2015 ANNUAL REPORT

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MISSION:

Michigan State University Extension helps people improve their lives through an educational process that applies knowledge to critical issues, needs and opportunities.

MESSAGE FROM THE DISTRICT COORDINATOR

MSU Extension in Kalamazoo County continues to contribute to the quality of life of the residents of Kalamazoo county. With the help of 112 dedicated adult volunteers, the 4-H program, under the coordination of Veronica Bolhuis and Evan Granito, had another successful year! There were 407 youth enrolled in the 4-H program with another 3,000 young people engaged in other 4-H educational activities. Many of these programs in the urban areas of the county. Speaking of volunteers, Kalamazoo County has one of the strongest Master Gardener volunteer programs in the state. Vision and dedication to the program come from Linda Whitlock. Leatta Byrd continues to provide leadership to the nutrition and physical activity program, and serves as team leader for long time program assistants Cathy Drew and Stonia Hunter. Kailee Smith, our nutrition program instructor, continues to build new partnerships. New comer Krystal Avila brings much need bi-lingual expertise to the nutrition program. Heidi Wollaeger is making a name for herself in the greenhouse industry in only the couple years she has been with MSUE. Her scientific approach and delightful demeanor enable her to reach both the consumer and the grower with useful information. Jane Herbert has had a notable career with MSUE and will be missed as she begins her new life in retirement. She has left her legacy with her work and research in protection of Michigan's surface water resources. Community food systems educator Mariel Borgman, housed at KVCC's Healthy Living Campus, has nurtured new partnerships in Kalamazoo county and brings enthusiasm and intellect to her work in community food systems. We are all so grateful to the county for continuing to provide the MSUE office with two exceptional support staff. Karen Carvell and Kris Maddox provide support to all educators serving Kalamazoo and are critical in helping connect county residents to MSUE programs and resources. They keep our ship sailing smoothly.



An MSUE highlight for me to share with you this year is the MSU Extension website. It provides quality researched based timely information, content experts, webinars, and bulletins to all Kalamazoo residents at the touch of a button (or screen). As revealed in this report, I have tried to convey the message that each dollar that Kalamazoo invests locally leverages MSUE resources to extend our coverage much farther than just that provided to those housed in the county. This partnership is critical to accomplishing the mission of Extension in Michigan.

Thank you Kalamazoo County Board of Commissioners for your continued support. I look forward to working with you in ensuring Kalamazoo is getting the best from Michigan State University Extension.

Julie Pioch, District 13 Coordinator

Kalamazoo County/MSUE MOA Funding

Budget year	2015	2016
MSU County Assessment	110,343	113,654
General Fund Support	190,200	179,600
Zoetis Grant & MG Support	39,500	39,500

District 13 Digital Reach—www.msue.msu.edu

From July 1, 2014 to June 30, 2015, approximately 35,301 visitors from our seven county district viewed more than 60,000 pages of rich, science-based content on the MSU Extension website. Of those, 52% were first-time visitors. Since launching in April 2012, the MSU Extension website has been visited by more than 75,000 people in District 13, more than 1,000,000 people from Michigan, and more than 5,000,000 people world-wide. Search engine rankings make msue.msu.edu one of the most visited Cooperative Extension Systems education sites in the country.

Some of our Community Partners in Kalamazoo Include:

City of Kalamazoo • City of Portage • Kalamazoo County Land Bank • Kalamazoo Nature Center • Kalamazoo River Watershed Council • Kalamazoo in Bloom • Kellogg Biological Station • WMU • Pfizer • Humphrey Products • Kendall Electric • Common Ground Network • Zoetis • Kalamazoo County Parks • Department of Health and Human Services • Area Agency on Aging • WIC • Kalamazoo Public Schools • Kalamazoo Loaves & Fishes • Kalamazoo Project Connect • Senior Services, Inc. • Galesburg-Augusta Schools • Kalamazoo Valley Community College

DEVELOPING YOUTH AND COMMUNITIES

-407 Kalamazoo County youth are currently enrolled in the 4-H program.

-3,000 additional Kalamazoo County youth participated in MSUE programs in 2015.

-112 Kalamazoo County adults provide leadership and guidance of the program.



When you support MSU Extension 4-H programs, youth participants learn life skills that prepare them for the workforce – especially for highly sought after jobs in science, technology, engineering and mathematics (STEM). Children learn leadership and decision-making skills in 4-H that increase their likelihood of becoming civically active. 4-H'ers demonstrate reduced high-risk behaviors such as drug use. They learn to complete tasks, solve problems, and seek any help they might need from peers and adults. 4-H involvement also helps participants avoid or reduce involvement with the court system. This helps ensure more young people succeed in school, attend college, and contribute to their communities. Communities with more successful young people have greater tax revenues, consumer spending, and increased likelihood that young people will stay in, or return to, their communities.

» In the 2014-2015 program year, 407 youth and 112 committed adult volunteers were enrolled in 23 clubs in the Kalamazoo County 4-H program. A total of 3,000 Kalamazoo County youth participated in MSUE 4-H outreach programs in 2015.

Michigan 4-H makes a difference in post-secondary education enrollment

Studies show individuals with college degrees earn more over the course of their lifetimes and enjoy lower unemployment rates than those without post-secondary degrees. With more college graduates, Michigan benefits greatly – through higher taxable earnings, more disposable income, and lower rates of unemployment – and produces a more skilled and educated workforce. Michigan 4-H is helping to prepare the next generation of college graduates in Michigan. Through its wide range of programs, Michigan 4-H promotes personal growth, career exploration, and goal-setting. Its designated pre-college programs, including 4-H Exploration Days (37 Kalamazoo County Youth attended in 2015), prepare youth for post-secondary education by helping build important life skills, increase college aspirations and improve college readiness. As a result:

- » 61% of 2014 Michigan 4-H seniors enrolled in post-secondary education, compared to 45% of their same-age peers.
- » 4-H alumni are more likely to go to college than their same-age peers in 90% of Michigan counties.
- » College enrollment rates of youth in 4-H pre-college programs is even higher, with 68% of youth who participate in 4-H Exploration Days.

MSU Extension youth educators are working with schools to provide custom solutions to challenges, partnering to provide innovative and economical enhancements to in-school learning.



Developing Youth and Communities, continued

Supporting youth success

To ensure the future success of the Great Lakes State, Michigan schools are charged with improving educational outcomes for the state's youngest minds. Yet, they must do this with fewer resources than ever. Partnering with schools to provide innovative and economical enhancements to in-school learning, MSU Extension youth educators are working with schools to provide custom solutions to their challenges.

From once-a-month workshops and in-school science lessons to after-school technology with work preparation training and classroom gardening, MSU Extension supplies Michigan schools and the families they serve with the support needed to be successful. Because of these unique partnerships, Michigan youth benefit.

Local highlights

Since December 2014, 4-H programming in Kalamazoo County has expanded in two urban neighborhood associations, one church, two community centers, and the Kalamazoo County Juvenile Home. The 4-H program at Interfaith Homes grew to include a new 4-H tennis project, and their entrepreneurship project members made \$175 selling handmade items at the Kalamazoo County Fair. Our new partnership with the Juvenile Home brings vocational, experiential learning opportunities once a week to underserved youth ages 13-18.

This was also an exciting year for our urban gardening program, which grew their biggest harvest yet of cucumbers, sunflowers, and potatoes. They sold a basket of vegetables for \$150 at the Kalamazoo County Fair auction, and presented urban gardening to the public with an educational display. Through offering animal-science and STEM based educational activities at large outreach events, **4-H staff reached over 3,000 local youth with short term, high impact 4-H programming.** Others, such as the new 4-H Tennis Club (right, bottom) were delivered directly by community members who became registered 4-H volunteer leaders.

This particular club revitalized an underutilized tennis court in an urban neighborhood this spring, and held daily meetings throughout the summer. Their emphasis on physical fitness and teamwork provided a solid framework from which to develop the life skills that comprise the core of 4-H. Members also volunteered at larger tournaments and public events for WMU and KVCC, demonstrating their commitment to the larger community of Kalamazoo.

Continued from last year were the Stepping Stones program and the Urban Gardening program, further cementing our partnerships with MDNR and the Kalamazoo Township

In 2015, the 4-H program at Interfaith Homes grew to include a new 4-H tennis project, and their entrepreneurship project members made \$175 selling handmade items at the Kalamazoo County Fair.



Another exciting year for our urban gardening program youth, producing their biggest harvest yet of cucumbers, sunflowers, and potatoes.

Developing Youth and Communities, continued

Interfaith Homes formed their own businesses as part of an entrepreneurship project. Participants said that they could see themselves owning their own business in the future.

Board of Trustees, respectively. One new urban program this year was the Entrepreneurship project at Interfaith Homes. These youth formed their own businesses, developed budgets and marketing campaigns, and even sold their goods at the Kalamazoo County Fair (making \$175 for their club in just one afternoon!) Participants said that they felt empowered by this program, and that they could see themselves owning their own business in the future.

Juvenile Home partnership

This year 4-H began an exciting new partnership with the Ninth Judicial Circuit Court Juvenile Home for Kalamazoo County. As partner of the new KEYS program (Kalamazoo Empowering Youth for Success), 4-H will bring experiential learning and vocational programming to the youth that need it most. Once a week, 4-H Leaders (some of whom are also Juvenile Home staff) will lead activities designed to build life skills and expose members to a broad spectrum of subjects and interests that they might otherwise never experience, including animal science, environmental education, citizenship/leadership, and much more.

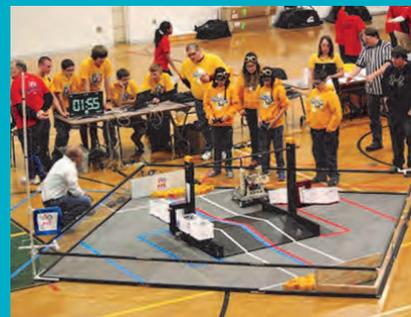
The Kalamazoo County Fair as science and business learning lab for 4-H youth

Every year, youth from across the county participate in animal science related programming through their 4-H project meetings, workshops at MSU Exploration Days, club trips including the World Dairy Expo in Wisconsin, the North American International Livestock Exposition, and more. In 2015, participants grew in their knowledge of animal health and care, and through that knowledge they were able to raise healthy animals to showcase in the 2015 Kalamazoo County Fair.

4-H was also able to showcase over 400 youth “still projects” in the new Expo Center at the Kalamazoo Fairgrounds. 4-H Families loved the new, renovated horse barns and our 4-H Leader’s Council opened their traditional Food Booth fundraiser in the little red barn at the end of the livestock mall.

Fair is an important part of a 4-H family’s summer. Many take a week of vacation to be there so their children can share what they have learned in 4-H with others who may not have that knowledge. Funds from increased Food Booth sales allow more youth to attend the two-day MSU Exploration Days event, receive awards and scholarships, and participate in leadership and educational programs. By having this opportunity to pursue their own interests, they are able to become productive citizens in their 4-H clubs, communities, country, and world.

Through offering animal-science and STEM based educational activities at large outreach events, 4-H staff reached over 3,000 local youth with short term, high impact 4-H programming.



Developing Youth and Communities, continued

4-H youth bring animal science to the community

Multiple outreach events from the 4-H Program focus on bringing hands-on experiential learning opportunities to new audiences through members of the 4-H companion and livestock animal projects. At two recent events (WMU Education Days and the annual 4-H Harvest Festival) over 1,000 local youth handled pets and livestock owned by 4-H members, and had a chance to ask questions about the responsibilities involved in raising a healthy, well cared for animal. 4-H families brought ducks, chickens, hedgehogs, guinea pigs, and even a chinchilla to these events. The public responded very positively to their hands-on experience at these events, and numerous local youth went home with a new passion for animal science.



Youth influencing community decisions with support from adults

More than 20 percent of the U.S. population is between the ages of 5 and 19. These youth look to adults for guidance in various situations. As youth become more involved, whether in academic or community settings, they search for ways in which their voices can be heard. Their voices are a resource that often goes untapped in communities. MSU Extension provides training through Michigan 4-H for internal and external groups to consider the value of youth-adult partnerships in the decision making process.

Youth are gaining life skills such as leadership, planning, and teamwork, while adult volunteers are learning about the needs, concerns and issues that pertain to youth. Local 4-H councils and committees are encouraged to seek out, listen to, and enact youth ideas in their program planning. As a result of youth-adult partnerships, communities learn about resources and creativity youth possess to solve critical problems.

This year, Kalamazoo MSU Extension trained 18 new leaders from local community centers, neighborhood associations, partner organizations and the community at large. Volunteers were trained in several 4-H programming techniques and curricula, including: “Be the E: Entrepreneurship”, “Build Your Future”, “4-H Theatre Arts”, and the ages and stages of youth development/4-H guiding principles. These adults all became certified 4-H volunteer leaders and led 4-H programs in their organizations and communities.

Clubs bring animals to events where Kalamazoo county youth handle pets and livestock owned by 4-H members, and have a chance to ask questions about the responsibilities involved in raising a healthy, well cared for animal.



Pork Quality Assurance (PQA) is an educational tool to help pork producers learn good production practices when raising pigs. All 4-H youth showing pigs at fairs must complete PQA training.

KEEPING BUSINESSES STRONG

When you support MSU Extension, you help participants understand the economic, environmental and social benefits of purchasing local and regional foods. You also help young people develop business skills that will help them succeed as adults and help communities capitalize on their ecological, social and cultural assets. This fuels the economy by creating and retaining jobs, and helps ensure a healthy tax base.

The MSU Product Center

The MSU Product Center assists county residents in developing products and businesses in the areas of food, agriculture, natural resources, and the bio economy. The innovation counselor on staff has special training to deliver these services to local residents. Business counseling is conducted on a one-on-one basis and may take place at the MSUE office or the client's home or business location. The assistance provided is tailored to meet the needs of the client and may include things like developing a business plan, navigating the regulatory maze, accessing the supply chain, or seeking funding options. The innovation counselor also assists clients in accessing specialized services they may need that are offered through Michigan State University, such as feasibility studies, nutritional labeling and packaging assistance.

» One hundred twelve counseling sessions took place in Kalamazoo County to assist 14 entrepreneurs. Four new ventures were launched and three new jobs were created. A full-time innovation counselor located in the county assisted many specialty food processors and value-added agriculture operations with business planning, marketing, and technical expertise. Clients were connected with MSU services on campus where they received assistance with food safety, product classification, and labeling. The partnership between MSUE and the MSU Product Center Food-Ag-Bio is providing support for entrepreneurs by supporting economic development across southwest Michigan.

Meeting the needs of Michigan craft brewers

Consumers are eager to purchase made-in-Michigan products, and craft brewers in Michigan are attempting to meet this demand by using all Michigan-made ingredients in their suds. Michigan's growing craft beer industry, made up of dedicated small business owners, is improving the economy and instilling a sense of local pride in regions throughout Michigan, and are seeing their locally made brews get national attention.



“The Marketplace Trade Show was a fun opportunity to talk to buyers and make connections with other food producers,” says owner Hether Frayer. “My MSU Product Center Counselor, Mark Thomas, has been an invaluable resource. He has helped with labeling, business planning, and HACCP planning.”



Keeping Businesses Strong, continued

Michigan brewers are looking for high-quality, affordable malt and hop products with consistent quality and availability. If these needs are met, then the craft brewing industry will continue to grow to support positive economic development for local communities. MSU Extension has educators and specialists supporting the growing hops and craft brew industries, and is working to help them meet their biggest challenges going forward:

- » Currently, there are only two small malt houses in the state with more needed to keep up with demand.
- » Farmers will have to learn to produce high-quality malting barley and hops both in and out of the traditional growing season.
- » Return on investment for farmers will need to be competitive with other available crops.
- » Start-up costs are high and there is a lack of key control measures.
- » The inaugural Great Lakes Hop and Barley Conference was held in Grand Rapids in 2015, coordinated by MSU Extension and Ag-Bio Research and the Michigan Brewers Guild. The event drew 350 participants (7 participants were from Kalamazoo County) and provided the latest in research and management of barley, hops, and craft brew production techniques.

Helping farmers make business decisions

One on one tax consultation, farm succession planning and start-up or expansion plans take expertise and time on the part of highly trained MSU Extension Educators. Farm financial analysis meetings provide a farm analysis to make better management decisions over the long term by looking at cost analysis and trends. Extension educators meet with farm business owners and provide seminars to small groups. **Thirteen Kalamazoo County agricultural enterprises received consultation and guidance in farm business management, tax strategies, labor laws, and implementation of the Affordable Care Act in 2015.**

The 2014 Farm Bill contained new farm programs that required complex decisions by farmers and landlords in late 2014 and early 2015. **Thirty six Kalamazoo County producers** took part in MSU Extension programs designed to provide producers and landlords with education, resources, and tools to help them prepare to make important production and business decisions. Decisions made this year will have implications for the life of the Farm Bill (2018).

Helping farmers make sound business decisions through one on one tax consultation, farm succession planning, and start-up or expansion plans takes expertise and time on the part of highly trained MSU Extension Educators.

ENSURING STRONG COMMUNITIES

When you support MSU Extension, participants learn how to implement best practices in good governance that keeps communities solvent, productive, and engaged.

When you support MSU Extension, participants learn how to implement best practices in good governance that keeps communities solvent, productive, and engaged. County residents learn effective conflict management skills that help leaders and residents work collaboratively on complex issues. All of these outcomes help lower the cost of governmental services and lead to personal and community stability, strong neighborhoods and safe communities.

Strengthening Michigan's financial capacity

When individuals and families in Michigan are financially healthy, it creates an environment for sustained community prosperity. MSU Extension's financial literacy and housing education programs help families and individuals at any stage of their lives make smart money decisions and work through the homeownership process. These courses help reduce mortgage defaults through counseling new homebuyers as well as homeowners going through the foreclosure process.

Financial and Homeownership Education

MSU Extension's Financial and Homeownership Education (FHE) workgroup plays an important role in addressing the issues of financial health of individuals and families through community-based educational programs covering financial capability, homeownership, foreclosure prevention and newly added, post-foreclosure education. Staff based in the *MSU Extension-Berrien County* office showed many impacts in 2015. Geographic coverage includes Berrien, Cass, Van Buren, St. Joseph, Branch, Calhoun and Kalamazoo Counties.

FORECLOSURE COUNSELING

- 66 answered inquiries from distressed homeowners facing foreclosure
- 18 LOCAL HOUSEHOLDS received foreclosure counseling in 2015

We greatly appreciate you and the MSU Extension FHE program. It's programs like yours that give struggling families like ours hope. Many thanks to you and your organization." - 2015 foreclosure client

FINANCIAL CAPABILITY

- 50 adults received behavior changing money management education
- 255 attended a one-time group education event

HOMEOWNERSHIP

- 12 potential home buyers received education and counseling before purchasing and are now ready to own a home

Contributed locally to **STEP FORWARD MICHIGAN \$\$\$** received for property tax assistance in Berrien County

689 downloads on the new website, **Starting Over After Foreclosure Toolkit** launched July 2015

MICHIGAN STATE UNIVERSITY | Extension

MSU Extension helps youth and adults alike learn the skills they need to increase their savings, manage their spending avoid predatory lending and reduce mortgage defaults.



Ensuring Strong Communities, continued

Attracting talent through placemaking

The Michigan Placemaking Curriculum is a comprehensive training program covering the latest research on the economics of placemaking, the role of urban form in creating a sense of place, and tools and techniques for engaging the public in placemaking.

The Michigan Placemaking Curriculum was prepared as part of the MIplace Partnership and was written under contract with the Michigan State Housing Development Authority (MSHDA) through a grant to the MSU Land Policy Institute.

- » As of July 2014, more than 10,000 people have received the Michigan Placemaking Curriculum—many from Kalamazoo County.
- » In 2015, Placemaking Strategy Development workshops were held to take the training to the next level of implementation. 27 workshops across the state offered 3 hours of instruction followed by 3 hours of hands-on exercises for communities to work on local strategies. Thirty Seven Kalamazoo County community leaders participated in this program.

Connecting Entrepreneurial Communities (CEC)

Michigan State University Extension believes that fostering entrepreneurship and community support are key strategies for creating jobs and transforming the state's economy and global presence. and The CEC program has been involved in helping entrepreneurs grow their businesses for many years. It was launched 9 years ago in an effort to educate communities on the various tools and resources available to help them support and grow entrepreneurs in their communities. MSUE organizes a statewide conference focusing on Connecting Entrepreneurial Communities (CEC). The 2015 Conference went border to border by holding events in both of Michigan's Peninsula's, in the cities of Houghton/Hancock and Sturgis. 195 participants from 79 communities in 38 counties and three states attended the two conferences, **including 7 from Kalamazoo**. This unique conference is embedded in the downtown of the host community and allows attendees to explore and experience entrepreneurship throughout the event. Evaluations revealed that:

- » 96% increased knowledge of business concepts, tools, and resources to build entrepreneurship in their community.
- » 95% increased knowledge of the value of agriculture, arts or cultural development as a useful economic development strategy.
- » 91% participants increased knowledge of the value of tourism and/or the sustainable use of our natural resources as a useful economic development strategy.



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Placemaking, a strategy led by local governments and planning commissions, can be a cornerstone of Michigan's economic recovery.



ENSURING SAFE AND SECURE FOOD

When you support MSU Extension's efforts, you improve Kalamazoo County residents' access to an adequate supply of safe and affordable food. Program participants focus on food safety measures in the field and at harvest, learn proper food preparation, and food preservation techniques, and bring community partners together to strengthen access to healthy food supplies. This leads to a healthy population, which in turn helps keep health care costs in check and our communities viable. Adults, youth, and institutions learn to make changes in their consumption and food growing habits. This includes growing their own food, patronizing farmers markets, and buying more local & regional food.

Teaching residents about food safety and reducing food borne illnesses

From the farm to the kitchen table, food safety is an important issue. Food borne illness outbreaks occur crossing all socioeconomic lines, and from production and consumption to preservation of foods. Food borne illness costs the U.S. economy billions of dollars each year in lost productivity, hospitalization, long-term disability, and even death.

MSU Extension Cottage Food Law workshops supply Michigan residents with up-to-date, scientifically backed information on food safety along with business development training all in one program.

» In 2015, 8 Kalamazoo County residents learned about preserving food and preparing safe food for public consumption through training at the Cottage Food Law workshop.

MSUE offers ServSafe, a national certification program for those working in food service, specifically managers and other leaders. Food consumers can have increased confidence when buying food products sold by someone with an MSU Extension food safety certificate. ServSafe teaches about food borne illness, how to prevent it, and how to train employees about the latest food safety issues. The ServSafe course uses proven techniques, provides new FDA food code rules, and content related to the food industry. Topics include: Providing safe food, forms of contamination, the safe food handler, the flow of food, food safety management systems, safe facilities, pest management, and cleaning & sanitizing.

Food consumers can have increased confidence when buying food products sold by someone with an MSU Extension food safety certificate.



Ensuring Safe and Secure Food, continued

- » In 2015, 5 courses were offered in Kalamazoo County where 109 participants were provided education to successfully pass the ServSafe Food Protection Manager Certification exam.
- » Food Safety education is also made available on-line. In 2015, eight county residents participated in MSUE's Food Safety for Food Service Workers online workshop.

Education for the public on food systems

Educating the general public on the food system is an important first step in bringing people together to solve food security issues, as well as expand markets for local food producers.

The 2015 Kalamazoo Area Community Supported Agriculture (CSA) Fair was held in partnership with Kalamazoo Valley Community College and People's Food Co-op of Kalamazoo. Fifty-five people and 12 CSA farmers whose service areas include Kalamazoo, Berrien, Calhoun and Allegan counties participated. Participants were provided information on each of the participating farms and their CSA programs, as well as general information about the CSA model for purchasing local food. They were provided a list of questions to ask farmers, Michigan Fresh fact sheets on food safety and preserving foods, a seasonality chart for produce, Get Fresh Too cookbooks featuring recipes and tips for preparing Michigan-grown fruits and vegetables. This event was successful in connecting area residents to resources in their local food system and increasing individual purchases of local and regional food. Farmers also appreciated the opportunity to connect with potential customers and to network with other farms.

- » 96% reported an increase in knowledge about where to find local resources and connections to others working in a local food system as a result of the CSA Fair.
- » More than 50% of the participants indicated they will more frequently seek out and purchase local, regional or Michigan-grown foods as a result of this event.

Michigan Fresh at Kalamazoo Farmers Market

When MSUE offers Michigan Fresh Programming at Farmers Markets, we help people gain the skills that they need to use fresh, healthy local food at home. This in turn leads to more home food preparation, healthier meals being prepared, more local food purchases supporting local agriculture, and ultimately healthier communities.

Kalamazoo is home to the second largest farmers market in Michigan, attended by up to 120 vendors and 8,000 shoppers each Saturday during peak season. The counties around Kalamazoo are abundant agriculturally. Many vendors come to Kalamazoo from Van



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Ensuring Safe and Secure Food, continued

Buren County, which ranks first in the state for fruit, tree nut and berry production and seventh in the nation for total acreage in blueberries. This market offers prime visibility for MSU Extension and presents a large, diverse audience for public engagement around local food. Providing Michigan Fresh programming in a relevant setting—at the point of purchase—is a way to introduce or re-familiarize people with Extension and the wide variety of services that we offer.

Michigan Fresh resources help people explore the state's bounty of fresh, locally grown fruits, vegetables, flowers and ornamentals by providing information on recommended varieties, storage, food safety, and preserving techniques for fruits and vegetables or for planting and maintaining your lawn and garden.

- » MSUE hosted a table with Michigan Fresh materials at 24 farmers markets from May-October 2015. These included ten Saturdays at the Kalamazoo Farmers Market, five Wednesdays at the 100 Mile Market in Kalamazoo, four Thursdays at the Kalamazoo Farmers Market Night Market, three special event markets in Kalamazoo, and two cooking demonstrations at the Athens Farmers Market.
- » Staff had conversations with 1,413 people at these farmers markets, distributing 700 Michigan fresh fact sheets and connecting people with other MSU Extension resources including the MSU Extension website and the Master Gardener hotline.
- » 97% of survey respondents indicated that they plan to make the demonstrated recipe at home.
- » 66% indicated that they would make a purchase at the farmers market as a result of the demonstration.

2015 Michigan Fresh Statewide Project Highlights

- » Michigan Fresh resources help people explore the state's bounty of fresh, locally grown fruits, vegetables, flowers, and ornamentals by providing information on recommended varieties, storage, food safety, and preserving techniques for fruits and vegetables or for planting and maintaining your lawn and garden.
- » Michigan Fresh printed materials were distributed in 18 farmers markets across the state by MSU Extension staff. We estimate over 10,000 fact sheets were distributed through this effort.
- » Traffic to the Michigan Fresh web page more than doubled with 34,985 page views in 2015 versus 16,799 in 2014.
- » A series of Michigan Fresh news articles were published in MSUE e-News and four local newspapers (Alpena, Battle Creek, Marshall and Port Huron.) Readership is estimated at approximately 28,000 households.

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KEEPING PEOPLE HEALTHY

When you support MSU Extension, you help participants learn safe food handling practices, increase their physical activity, and improve the quality of their diets. Extension programming also helps decrease incidents of violence and bullying. Encouraging these healthy behaviors helps reduce food and health care costs by helping prevent chronic health conditions and providing safe environments throughout a person's life span.

Working to improve social and emotional health

Many negative factors affect social and emotional health, including ongoing and toxic stress that may result from situations including abusive relationships, bias, damaging coping behaviors and relationship violence. Across the lifespan, people faced with these situations and settings are at risk for a wide range of physical, psychological, social, emotional, cognitive, financial and spiritual health challenges. The United States spends an estimated \$425 billion in direct and indirect costs of violence each year.

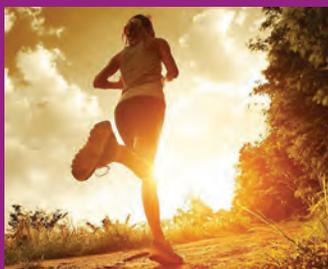
RELAX: Alternatives to Anger is a program designed to actively engage adult learners to increase knowledge and skills about anger management and give them constructive ways to deal with anger. Consistently, more than half of program participants leave RELAX with improved knowledge or new skills designed to promote social and emotional well-being with others in their lives and immediate social environments.

- » 54 percent increased effort to talk things through until a solution is reached.
- » 56 percent increased effort working hard to be calm and talk through issues.
- » 56 percent increased effort that if they do get upset, they try to end conflicts on a positive note.
- » In 2015, 23 adults from Kalamazoo County participated in social and emotional health programs offered by MSUE.

Supporting Breastfeeding for healthy babies

Breastfeeding is not simply a lifestyle choice. Breastfeeding is universally endorsed by both the world's health and scientific communities as the first choice in infant feeding. Exclusive breastfeeding for 6 months with continued breastfeeding in addition to age appropriate complementary foods for a minimum of one year has been shown to be the optimal in infant feeding. The evidence is clear that breastfeeding provides immediate

Encouraging healthy behaviors helps reduce food and health care costs by helping prevent chronic health conditions and providing safe environments throughout a person's life span.



MSU Extension reached more than 87,000 adults and young people across the state through nutrition and physical activity programming in 2015.

Keeping People Healthy, continued

Programs focus on helping participants gain the skills needed to buy and prepare nutritious, budget-friendly foods; increase their physical activity; breastfeed their babies and stretch their food dollars.

and lifelong nutrition and health benefits for both mother and child, as well as larger economic, environmental, and social benefits to families and communities. Breastfeeding must be considered the norm for infant feeding for the first year of life or longer.

The Michigan Breastfeeding Mother to Mother program is a collaborative effort between the MI Department of Community Health, WIC, and MSUE to increase breastfeeding initiation and duration rates among low-income women. Many new mothers know the value of breastfeeding, but unfortunately run into barriers during their breastfeeding experience. The Breastfeeding Initiative (BFI) empowers and supports mothers to overcome these barriers. The BFI program utilizes peers to provide breastfeeding support to mothers throughout the first year of their infant's life. The program combines the strengths of MSUE and WIC in an effort to reverse declining breastfeeding rates among low-income women. The program began in 1993 and continues today in Kalamazoo County as a free program that offers breastfeeding information, encouragement, and support. **71 Kalamazoo moms participated in the program in 2015.**

Teaching valuable healthy-eating skills

More than 1.7 million Michigan residents receive Supplemental Nutrition Assistance Program (SNAP) benefits.

MSU Extension's Supplemental Nutrition Assistance Program Education (SNAP-Ed) programs teach adults how to make the most of their food dollars, by developing skills such as menu planning, understanding recipes and keeping food safe. MSU Extension nutrition education programs reached 86,701 low-income participants from 82 of Michigan's 83 counties in the in the 2014-2015 fiscal year and upon completion:

- » 94% of the adult participants had a positive change in dietary quality.
- » 74% of adults showed improvement in one or more nutrition practices such as planning meals, making healthy food choices, preparing foods without salt, reading labels and having children eat breakfast.
- » 74% of adult participants showed improvement in one or more food resource management practices such as planning meals, comparing prices, not running out of food and using grocery lists.
- » 73% of teachers in grades K-2 reported that students participating in SNAP-ED programs increase fruit consumption.
- » 85% of seniors (older adults) participating in SNAP-ED programs reporting maintaining or increasing their vegetable consumption.

94% of the adult participants completing a nutrition education series had a positive change in dietary quality.



Keeping People Healthy, continued

Kalamazoo County SNAP-Ed Statistics for the 2015:

- » Adults completing a nutrition education series (at least 6 hours of training) = 158
- » Adults in one time presentations = 1454
- » Total Youth in Series (at least 4 hours of nutrition education) = 354
- » Youth in one time presentations= 682

Helping Michiganders prevent diabetes

Michigan ranks 15th in the nation for prevalence of diabetes, with an estimated 10 percent of Michigan adults aged 18 and older had been diagnosed with diabetes – about 758,300 people. An additional 250,200 Michigan adults are estimated to have diabetes but are currently undiagnosed. Through the National Diabetes Prevention Program, MSU Extension helps participants learn ways to change their lifestyles and improve their health. A trained lifestyle coach leads sixteen core group sessions weekly. Participants learn how to make modest lifestyle changes. Groups then meet monthly for six post-core sessions. The program provides participants with both a lifestyle coach and a valuable support system.

- » Two Programs were offered in 2015 in partnership with Kalamazoo County HR and Priority Health reaching 15 participants.

Personal Action Toward Health (PATH) for Chronic Disease

The “PATH” program provides skills and tools to manage chronic health conditions. In Michigan, this is the name for Stanford University’s Chronic Disease Self-Management Program. People who participate in PATH workshops are better equipped to face the daily challenges of living with one or more chronic conditions. PATH is a six-week series facilitated by two trained leaders who have chronic conditions themselves. PATH teaches ways to deal with the challenges of not feeling well, talk to healthcare providers and family members, overcome stress and relax, increase energy, handle everyday activities more easily, stay independent, and set goals.

In 2015, twelve educators reached nearly 200 participants with the PATH series, representing 23 Michigan counties. Pre- and post- program evaluations showed participants gained knowledge on health objectives and had positive behavioral changes such as increased activity and decreased pain.

- » 15 Kalamazoo County residents participated in Diabetes PATH series in 2015.

**Kalamazoo County
SNAP-Ed Statistics
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Through the National Diabetes Prevention Program, MSU Extension helps participants to learn ways to change their lifestyles and improve their health.

MAKING THE MOST OF OUR NATURAL ASSETS

Better land stewardship benefits communities by protecting and enhancing Michigan's natural resource assets.

When you support MSU Extension's natural resources education programs, participants learn about income-generating opportunities, ecological principles, natural resource issues, and the role of natural resource professionals. They also can explore public policy issues related to environmental stewardship. Our programs can lead to increased income for families that retain their natural resource assets, help landowners become better stewards of their land, and protect land management opportunities for future generations.

Helping Michigan residents become better stewards of our inland lakes

Michigan is blessed with more than 11,000 inland lakes, each providing unique recreational, scenic and environmental benefits. These lakes are complex ecosystems, often negatively impacted by both the people that live near them as well as the water that drains into them. Frequently, local communities struggle to protect and manage inland lakes in a way that incorporates the best available knowledge and resources. In response, MSUE developed "Introduction to Lakes," a six-week online course designed for citizens and professionals alike. Topics included lake ecology, lakes and their watershed shorelines, Michigan water law, aquatic plant management and citizen involvement in lake stewardship.

The course, taught on a week-by-week basis, incorporated live chat sessions with instructors, outside experts, and participants. After a couple years in development, the inaugural course took place in October, 2015. It replaced a resource intensive face to face program that reached only a few communities. Ninety-seven people enrolled in the course from 39 counties (4 from Kalamazoo County); 88 earned a completion certificate. Two-thirds were lakefront property owners while others were government officials, consultants, fisheries biologists, students, teachers, pesticide applicators, and state agency staff.

Participants indicated multiple reasons for taking the course, such as wanting to bring scientific rigor to the governance decisions made about lakes, learn about lake management and regulation, and wanting to understand the environmental and ecological issues within lakes. Pre and post course evaluations revealed that:

» Before, 33% had educated neighbors and lake community members about lake stewardship. After, 69 % planned to do this as a result of what they learned.

Seven Kalamazoo Homeowners participated in a live statewide webinar focused on septic system use and maintenance in August, 2015. Over 80% of participants indicated they planned to make changes based on what they learned to improve the health of their systems.



Making the Most of Our Natural Assets, continued

- » Before, 43% had volunteered time to a lake association, local conservation district, watershed council, or other lake-related organization. After, 68% planned to engage in this stewardship practice in the future.
- » Before, 33% had participated in a lake or stream water quality monitoring effort. After, 54% plan to take this stewardship action.
- » Before, 14% had installed a natural shoreline buffer strip along the water's edge. After, 41% had plans to conduct this lake stewardship practice.

The Clean Boats, Clean Waters program

Michigan is one of the most popular states in the nation for recreational boating, with more than 1,300 public boating access sites and over 80 harbors and marinas. There are more than 11,000 inland lakes and 36,000 miles of rivers and streams.

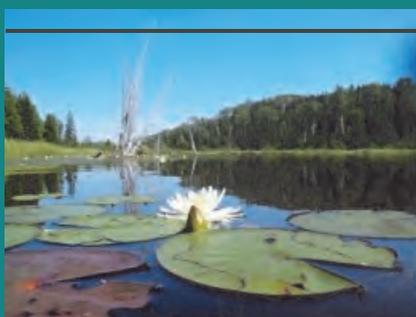
The threat of contamination to these abundant and precious water resources from non-native aquatic invasive species is high. Aquatic invasive species (AIS) can disrupt these ecosystems, outcompete native animals and plants for space and resources, thus leading to excessive plant growth, reduced fish populations, and interference with pleasure boating and other recreational activities.

MSU Extension partners with the MDNR and the Michigan Lake and Streams Association to provide education and outreach for the The Clean Boats, Clean Waters program. We train volunteers to organize and conduct boater education in their community helping to protect local water resources. Volunteer teams will work to educate boaters and other recreational watercraft owners about AIS laws and best management practices for stopping the spread of non-native aquatic species.

Six events held in Kalamazoo County provided an opportunity for over 500 Kalamazoo county residents to get information related to aquatic invasive species, water resource conservation and protection or volunteer training from educators working on the clean boats clean water program in 2015.



MSU Extension partners with the MDNR and the Michigan Lake and Streams Association to provide education and outreach for the The Clean Boats, Clean Waters program to reduce the threat of Aquatic Invasive Species.



Introduction to Lakes was designed to provide a convenient way for Michigan citizens to obtain information on inland lake ecosystems and management practices to keep inland lakes healthy.

SUPPORTING FOOD AND AGRICULTURE

When you support MSU Extension, you help participants learn profitable and efficient business and production practices. Participants also learn how to optimize and reduce the use of pesticides and fertilizers, and how to conserve and protect water resources.

Michigan agriculture continues to be a growing segment of the state's economy. The production of commercial food and nonfood agricultural operations is growing rapidly. The number of households raising a portion of their own food, raising livestock, or gardening for pleasure or relaxation continues to increase. When you support MSU Extension, you help participants learn profitable and efficient business and production practices. Participants also learn how to optimize and reduce the use of pesticides and fertilizers, and how to conserve and protect water resources. This education leads to better use of time, money, and human capital, and helps retain and create agricultural jobs. These measures strengthen Michigan's economy while connecting farmers to local food opportunities and global markets. In this way you help MSU Extension encourage growth in a sustainable and prosperous Michigan food and agriculture system.

Webinars Provide Farmers with On-demand Learning

[The Integrated Pest Management Academy Online Webinar Series](#) is an on-demand, online webinar series that allows participants to begin to understand IPM, the tenants on which the concept is based and available resources. Increasing the use of IPM reduces the use of unnecessary pesticides on the farm. The series covers basic entomology, plant pathology, soil science, pesticides and scouting. With more MSU Educators now providing content the program has grown from 8 to 17 webinars from which to choose. Specific commodity classes such as Chestnut IPM, Fruit crops, Hop IPM, Vegetables, and Nursery Crops are offered as well as special topics such as Growing Bee-Friendly Plants. In 2015, 23 participants were from Kalamazoo County.

- » Viewers are able to request up to five recertification credits toward their pesticide applicators license in the State of Michigan. Between 8/23/14 and 10/2/15, there were 1,968 webinar sessions viewed and represented at least 439 unique visitors.
- » 30% identified as growers, .3% as policy makers, 9% as crop consultants, 33% as landscapers, 11% as agriculture educators, 2% as pesticide distributors, 7% as students, 23% as recreational gardeners, and 6% were members of the general public.
- » Thirty-seven viewers applied for Michigan pesticide recertification credits (140 commercial applicator credits and 63 private applicator credits).
- » 82% of respondents said they intended to increase the adoption of IPM strategies and tools based on the information presented in the webinar.

Increasing the use of IPM reduces the use of unnecessary pesticides on the farm.



Supporting Food and Agriculture, continued

Field Crops Webinar Series

In order to share key 2015 field crop production points to all parts of Michigan, MSUE Educators offered six weekly one-hour webinars as part of the Field Crops Webinar Series. This program was designed to compliment traditional winter face to face meetings in a condensed distance learning format. In its third year, the online participation has increased to 132 participants from 44 counties (2 from Kalamazoo), 7 states and Ontario for a total of 319 participant viewings.

Seven MSUE educators and 3 campus specialists brought their expertise to the series which covered topics such as malting barley and hops production, integrated management of white mold, nitrogen management in corn and wheat, dry bean insect and disease management, weed management challenges, and corn stover harvest.

Respondents reported that they collectively manage or directly impact approximately 104,067 acres of corn, 111,441 acres of soybeans, and 38,277 acres of wheat.

New Farmer Webinar Series

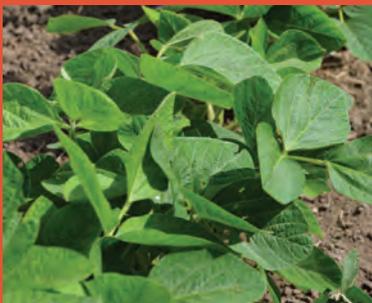
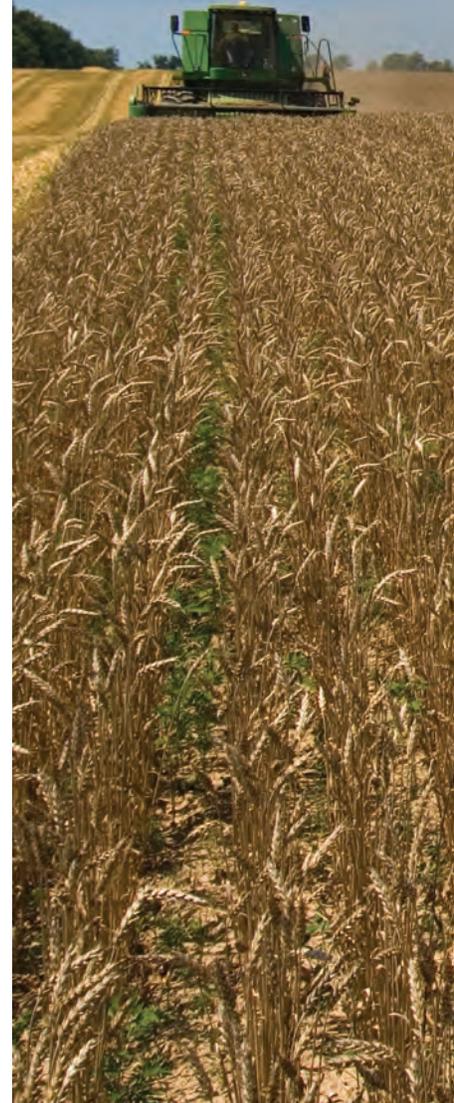
Michigan citizens interested in engaging in new agricultural enterprises sometimes lack knowledge, experience and technical support to get started. Extension educators and specialists receive numerous contacts from such people seeking basic, start-up information. Providing practical information to people interested in, or already engaging in, new farm enterprises helps these small businesses develop sound production and marketing plans.

New farm businesses provide jobs, income, increased economic and social stability, and increased food security to rural and other communities. The Michigan State University Extension Beginning Farmer Webinar Series began in 2012 with three webinars and has grown to offering a catalogue of 20.

In 2014, 311 people registered for a total of 455 webinar views. In 2015, the series included twenty webinars offered with 198 people from fifty-four Michigan counties (including Kalamazoo) registered for a total of 1,845 webinar views.

Participants included 60% current growers, 37% future growers, and 3% consultants. Acreage of farms reported is 0 to 650 acres. Preliminary results of evaluations reveal that 97% found the series valuable and plan to use resources they learned about during the series, and 11% report job creation because of the series.

When you support MSU Extension, you help participants learn profitable and efficient business and production practices.



New farm businesses provide jobs, income and increased economic and social stability, and increased food security to rural and other communities.

Supporting Food and Agriculture, continued

Consumer Horticulture

Gardeners aim to grow good produce or nurture lovely lawns and landscaping. “Smart Gardeners” obtain these goals with earth-friendly techniques that can save money. MSUE advice is based on science performed at Michigan State University or other land grant universities. Programming in consumer horticulture in Kalamazoo County has a long tradition, and the state depends on the Kalamazoo volunteers to operate one of three call centers for the MSUE Home Horticulture hotline. Consumer horticulture resources from around the state support the Kalamazoo program and the Kalamazoo volunteers support the local program financially as well as through over 10,000 hours of community service. Some numbers for 2015:

- » 19 Home Horticulture educational programs reach 576 people
- » Consumer Hort presentations to Master Gardeners: 2 programs reach 385 people
- » Presentations by Master Gardeners to public: 8 programs reach 194 people
- » Master Gardener class: 49 students completed class, 13 week class, 52 class hours
- » Jr. Master Gardener class: 9 graduates from Girls & Boys Club
- » Master Gardener booth outreach: 4 community events reach 941 people
- » MSUE Lawn & Garden Hotline outreach, Kalamazoo: 561 people
- » Annual continuing education completed by those Master Gardeners: 3,464 hours
- » The Giving Garden is a two-acre vegetable garden in Kalamazoo growing and donating fresh vegetables to food banks and food kitchens in southwestern Michigan. This garden has operated continuously for the past 15 years. Business partners Humphrey Products Company and Kendall Electric Inc. donated the land and water for this ambitious project. It is ‘farmed’ by a crew of 40 Master Gardeners and community volunteers. These experienced volunteers also teach classes, workshops, and mentored new gardeners. All of the costs for operating this garden came from donations and grants.
- » Donations to local food banks by Giving Garden (a Master Gardener project): 10,432 pounds of fresh produce donated locally through local food banks and food pantries.



2,842 MSU Extension Master Gardeners from 75 counties completed the annual recertification requirement of 15 volunteer hours in their community and 5 education hours in horticulture in 2015. Kalamazoo County has 297 active Master Gardeners who dedicated 10,780 hours of community service in Kalamazoo County.

Gardeners aim to grow good produce or nurture lovely lawns and landscaping. “Smart gardeners” obtain those goals with earth-friendly techniques that can save money.

MICHIGAN STATE UNIVERSITY | Extension



Smart Gardening

Supporting Food and Agriculture, continued

Soybean Management and Research Technology

Soybean yield increases have not kept pace with those of corn, wheat and sugar beets. On average, soybean producers are losing 1 to 2 bushels per acre due to harvest losses. Soybean producers that irrigate their beans are not satisfied with their irrigated soybean yields. In some cases, dryland yields are higher than irrigated yields. On-farm research and education may help soybean producers overcome these challenges. Each year Several SMaRT programs are held across the state. **Eight Kalamazoo County producers attended in 2015.** Results from the programs revealed:

- » The average amount of additional income realized by implementing the new information was \$13.40 per acre. Because the new information was implemented on 5,338 acres, the financial impact of the programs was \$71,529 in 2014 alone.

Annual educational events provide updates to Kalamazoo growers

- » A field day held in Cooperation with the Kalamazoo County Conservation District brought 57 farmers (37 from Kalamazoo County) together to discuss pest management issues and included updates on Soybean Sudden Death Syndrome, incidence of Northern Corn Leaf Blight in Corn, and White Mold in Soybeans.
- » Soil Health and Cover Crops was the topic presented at the 2015 Pioneer Seed Corn Growers meeting in April. Growers for the Constantine, MI plant were present from St. Joseph, Kalamazoo, Branch and Van Buren Counties in Michigan. This event supported the activity of increasing cover crop adoption and improving soil health. 125 growers were in attendance—13 from Kalamazoo County.
- » Soybean producers in Kalamazoo county were included in a multi-state (Indiana and Michigan) program focused on issues related to irrigated soybeans held in March 2015. Lyndon Kelley unveiled an updated irrigation scheduling spreadsheet - an important cost saving tool used by producers. 270 people were in attendance—3 from Kalamazoo County.
- » Ag Action in Kalamazoo and Farmers Day in Branch County provide farmers with networking opportunities and a chance to get the latest pest and risk management strategies, results from applied research, post season analysis and regulatory updates provided my MSU Extension. **Over 35 attendees at Ag Action in 2015 were from Kalamazoo County** which does not include the local vendors, speakers, and volunteers who assist with the program.



Annual educational events such as Ag Action held in Kalamazoo each year provide farmers with networking opportunities and a chance to get the latest pest and risk management strategies, results from applied research, post season analysis and regulatory updates provided my MSU Extension.



Kalamazoo producers have found MSUE as a resource for education and consulting in such areas as grass feed beef, Christmas trees, vegetables, hops, pigs, blueberries, organic soybeans, and dairy.

Supporting Food and Agriculture, continued

Bee-ing Responsive to Growers and Consumers in the greenhouse industry

Michigan is the third largest producer of floriculture crops in the nation with 406 million dollars in sales last year. With the increasingly thin margins, growers continue to seek ways of decrease input costs, increase energy efficiency, decrease plant losses and increase the value of their crops.

Within the last two years, increasing consumer concern regarding pollinator health has pressured plant retailers to reduce or eliminate a class of insecticides that has been shown to be harmful to bees in some situations. The public outcry has caused greenhouse and nursery growers to explore alternative pest management practices and alter their traditional pest management programs. Last year, MSUE Extension Educator Heidi Wollager, hosted a variety of programming including a seminar in Kalamazoo to help growers produce plants that were “bee-friendly.” The programming was also offered in a webinar format which resulted in 54 webinar views and 78% of survey respondents intended to change their practices as a result of the webinar. Fifteen growers representing 71 acres of ornamental plant production in Kalamazoo County learned and applied their knowledge on these “bee-friendly” pest management practices. Five farms covering 87 acres protected \$1.5 million of plant product as a result of the pollinator programming.

In addition to these face-to-face workshops, Heidi wrote numerous articles for the growers including “Bee-friendly Plants and Pest Management Strategies – Part I” which had 788 website views. The MSUE team also offered programming on alternative pest management practices and took 35 greenhouse growers (including 6 from Kalamazoo) to visit greenhouses in Ontario, Canada to learn about biological control (using the pest’s natural enemies for control) techniques. In addition to these boots-on-the-ground efforts, MSUE co-hosted a national conference in partnership with North Carolina State University that attracted 187 participants from 35 states and 3 countries. Through this conference Heidi and her team are inspiring new applied research efforts, greater extension efforts, and greater awareness of pollinator issues around the country.



Pollinator Report

Pest Management And Marketing Strategies For Bee-Friendly Plants

Michigan State University Extension shares pest management practices to produce plants that are safe for pollinators and marketing strategies for clearing up confusion about bee-friendly plants.

More Online
We just hit the highlights for these two articles on bee-friendly plants. Visit bit.ly/msuefriendlyplants for links to the full articles.

Bee-Friendly Plants And Pest Management Strategies

Part 1

by HEIDI WOLLAGER and DAVE SMITLEY

- Don't spray flowering plants with any insecticide, unless it is one of our listed alternatives in Table 1, during the last three weeks before shipping plants to your customer.
- Avoid soil drenches with neonicotinoids and other systemic insecticides as much as possible. If systemic insecticides need to be used in hanging baskets, do not exceed the labeled rate and do not drench them any later than five weeks before shipping.

DURING the last two years, several new research studies indicate that bumblebees and other native bees can be affected by very low levels of neonicotinoid-class insecticides in pollen and nectar (less than 20 ppb). Several environmental groups have been actively campaigning for more careful use of neonicotinoid insecticides or banning their use entirely.

The burgeoning number of new species can leave anyone's head spinning. What does “bee-friendly” really mean, and how can an ornamental plant grower grow plants that are safe for pollinators?

Plants that are bee-friendly provide pollen and nectar to pollinators — in other words, they are a good food source. However, bee-friendly can also refer to pest management practices used to grow plants with no harmful insecticide residue on the flowers or in the pollen and nectar.

Bee-Friendly Pest Management Practices

Choosing which pest management practices are best is still under debate. There has not been enough research on insecticide residues in ornamental plant pollen to develop reliable guidelines to protect pollinators. As a baseline, growers can use the following guidelines to produce plants that are safe for pollinators:

Table 1. Pest control products that can be used in the last two to three weeks before plant shipment.

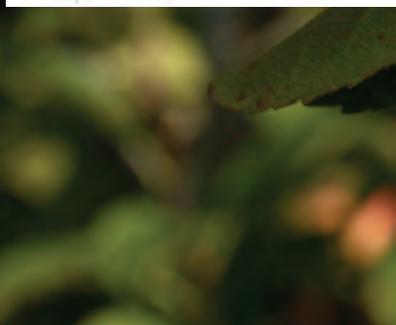
Products	Target Pest Insect
Horticultural oil products (Ultra Pure, Suffol, etc.) at 0.5 percent (½ qt per 100 gal)	Spider mites, whiteflies, aphids and thrips larvae
Insecticidal soap (M-Pace) at 1.0 percent (1 gal/100 gal)	Spider mites, whiteflies, aphids and thrips larvae
BotaniGard or Mycotrol (Beauveria bassiana, a fungal pathogen)	Whiteflies, aphids and thrips
No-fly (fungal pathogen)	Spider mites, whiteflies, aphids and thrips larvae
Neem products (Grazon, Amazon Plus, Agroneem Plus)	Whiteflies, aphids, thrips
Spinosad (Conserve)	Thrips
XXpire	Thrips and whiteflies
Rycar	Whiteflies, aphids, thrips and mealybugs

not drench them any later than five weeks before shipping.

- Growers should not use a systemic soil drench on linden trees or other trees and shrubs that are highly attractive to bees.

Heidi Wollager (wollager@msu.edu) is an educator and Dave Smitley (smitley@msu.edu) is an entomology professor for Michigan State University Extension. Read the full story, “Bee-Friendly Plants And Pest Management Strategies - Part 1” at bit.ly/msuefriendlypart1.

24 | Greenhouse Grower June 2015



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