

Agriculture continues to be one of the fastest growing sectors of the state's economy. MSU Extension works to ensure that the industry has a thriving knowledge base to help it become more competitive in local, state, national and international markets. We work to increase farmers' success, not only financially, but also in protecting the environment, ensuring a safe food supply, reaching new markets and advancing agriculture through applied research. Making Michigan agriculture stronger makes the state's whole economy stronger.

MSU Extension educators and specialists also work with individuals and community leaders to provide customized programming and educational opportunities based on the latest evidence-based research and county-specific needs. We encourage you to contact your local MSU Extension office about crafting programming that is right for you, your family and your community.

### Ag Action Days

During this event, MSU Extension staff members provide producers with updates from the most recent Southwest Michigan Research and Extension Center vegetable trials. They also review and answer questions about production problems that arose during the previous growing season.

### 🌿 Animal Evaluation

Young people explore animal science by learning to evaluate livestock project animals such as beef cattle, sheep and swine. They learn to select both market and breeding animals based on breed character, production factors, structure, and carcass desirability. The oral reasons portion of statewide live-animal and meats judging contests also help participants strengthen their public speaking skills.

### Beginning Farmer Webinar Series

Beginning farmers improve their chances of succeeding when they base their new enterprises on thorough planning and realistic goals. This interactive webinar series provides one- to two-hour programs on various production and marketing topics for new vegetable, livestock and field crop producers.

### Breakfast on the Farm

Breakfast on the Farm events give visitors of all ages a firsthand look at modern food production. They can talk with some of the farm families who work hard to produce a safe, wholesome food supply for Michigan communities and the world. And of course, a hearty breakfast featuring Michigan-made products is a highlight of the day.

### 🌿 Companion Animals

Young people explore veterinary and animal science by learning to feed, train and care for their companion animals (such as cats, dogs and llamas). This project is a great option for young people who don't have access to large livestock or horses but who want to learn about animals and their care, health, nutrition and welfare. Participants can take advantage of local, regional and statewide opportunities for participation and competition.



The 4-H clover



next to a program name indicates that its primary audience is 4-H.



## Supporting Food & Agriculture

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 and 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.

### Farmers Day

This annual, daylong event in Branch County is popular with agriculture industry professionals and the general public. It features a large trade show, workshops, numerous 4-H events, and other opportunities such as earning Restricted Use Pesticide (RUP) credits and sitting for commercial pesticide applicator exams.

### Farming for You

This program features farmers and MSU Extension educators answering shoppers' questions about farming and food production right in the aisles of the grocery store, on social media and in other settings.

### ✿ 4-H Animal & Veterinary Science Camp

This weeklong camp allows young people to explore the fields of animal science and veterinary medicine as they work through a veterinary case study and participate in hands-on learning activities. Participants gain animal handling experience and explore campus farms and facilities.

### Great Lakes Fruit, Vegetable & Farm Market Expo (GLEXPO)

More than 4,000 participants from the Midwest and Canada attend this unique Michigan horticultural event. Sessions on fruit, vegetable and pest management issues are delivered by MSU Extension educators and specialists and researchers from across the U.S.

### Michigan UP Ag for Tomorrow Conference

This March gathering in Escanaba is an excellent learning and networking opportunity for Upper Peninsula farmers and representatives from agribusinesses and related organizations. The day includes classes on a range of topics, relevant speakers and lunch. Previous topics have included livestock, field crops, forage production, agricultural business management, and local food production and marketing.

### On-Farm Education

MSU Extension works with individual producers on farm-specific issues, offering customized on-farm educational sessions to help production teams evaluate their current management practices, assess animal welfare and evaluate the environmental status of their farms.

### ✿ Plant Science

Youth participants explore the broad scope of plant sciences through real-life scenarios and educational opportunities related to crops, vegetables and horticulture. Participants learn about topics such as weeds, crops, fruits, vegetables, gardening, horticulture and agronomy.

### ✿ Rabbits & Cavies

Young people in this project explore veterinary and animal science by learning to feed, train and care for rabbits and cavies (guinea pigs) project animals. Participants also learn about rabbit and cavy breeds, animal selection, production, reproduction and health. Participating in breeding stock and market animal projects and in statewide competitions and educational events are all possibilities.

### ✿ Veterinary Science

Youth participants explore the broad scope of veterinary science through real-life scenarios and educational opportunities. Participants will learn about topics such as medicine, animal health, disease, animal management, feeding processes, and how animal health affects human health.

## Beef

MSU Extension provides educational programs based on applied research for the Michigan beef industry. These educational resources address beef quality assurance, production, marketing, food safety and business management.

### Beef Cattle Ultrasound

A field technician certified by the Ultrasound Guidelines Council is available to perform ultrasound scanning for beef cattle to evaluate carcass merit for breeding selection and market readiness.

### ✿ Beef Production & Management

Youth participants explore veterinary and animal science by learning to feed, train and care for beef cattle project animals. They also learn about beef cattle breeds, selection, grooming, production, marketing, reproduction and health, and agribusiness careers. Participating in breeding stock and market animal projects and in statewide competitions and educational events are all possibilities.

### Beef Quality Assurance

The Beef Quality Assurance program provides guidelines for beef cattle production and outlines how to increase consumer confidence through proper management techniques and a commitment to quality. The online Animal Care Training program for beef, dairy, equine, transportation, and livestock marketers is available in English and Spanish. Topics covered include animal husbandry, animal welfare, environmental stewardship and food safety practices.

### Bull Breeding Soundness Exam Clinics

MSU Extension hosts clinics that demonstrate how to identify potential fertility problems in beef bulls, giving producers the ability to reduce the risk of a less than optimum breeding season. It is recommended that a breeding soundness exam be conducted on breeding bulls every year.



## MSUE PUBLICATIONS



### Rabbit Fitting & Showing Member's Guide

Fitting and showing rabbits gives 4-H'ers the chance to compete with others based on the skills they demonstrate, their general knowledge of rabbits and their preparation, attitude and behavior. This bulletin contains objectives and guidelines for 4-H participants in rabbit fitting and showing contests and covers feeding, care, grooming and conditioning. The bulletin provides full-color, step-by-step photo instructions for completing the contest examination and includes a rabbit showmanship scorecard.

[bookstore.msue.msu.edu](http://bookstore.msue.msu.edu)



### **Grazing Systems**

MSU Extension offers programs on how properly managed grazing and integrated cropping systems can increase the energy efficiency of beef farms and about the impact of grazing systems on soil carbon sequestration and greenhouse gas flux. Educators work with producers to develop pasture-based local beef production systems and host public field days and seasonal programs.

### **Great Lakes Professional Cattle Feeding & Marketing Short Course**

This annual event caters to growers and agribusinesses that produce beef products for human consumption. Sessions focus on nutritional and management practices for improving cattle feeding operations in the eastern U.S. Corn Belt. The program also addresses current market outlooks and marketing strategies to optimize return on investment and minimize risk.

### **MCA & MSU Bull Evaluation**

This cooperative effort between the Michigan Cattlemen's Association, MSU and Plank Farms provides a common environment for evaluating young bulls for rate of gain, soundness and body composition, all of which helps beef producers identify superior bulls that are all ranked and indexed based on the bull evaluation index system.

### **Meat Marketing & Processing**

Resources and workshops are available to meat processors and direct market farms that focus on processing procedures related to the safety and quality of meat products. Training is available for meat processors who need a specialized variance from the Michigan Department of Agriculture and Rural Development and those who apply Hazard Analysis and Critical Control Points (HACCP) to their operations.

## **Bioeconomy**

---

MSU Extension uses a combination of research and outreach efforts to assess the needs of Michigan stakeholders within the broad bioeconomy industry. Our programs are designed to help Michigan residents reach sustainable bioenergy and bioproduct development goals.

### **Anaerobic Digester Operator Training**

Biogas produced from organic materials can help improve environmental conditions and generate renewable energy. Anaerobic digester operators need varying levels of expertise to start and operate anaerobic digesters and to troubleshoot problems with them. This training is designed to help anaerobic digester operators safely maximize biogas production with the lowest environmental impact.

## Portable Biomass Pelletization Demonstrations

Plant tissues, generally referred to as *biomass*, can be processed to recover their stored energy and create biofuels. MSU Extension bioenergy educators have expertise in collecting, processing and pelletizing plant biomass to create a high-value pellet fuel product. MSU Extension educators are available to bring a mobile unit to a farm, school or business and demonstrate the process of making biomass pellets.

## Dairy

MSU Extension's focus on dairy production brings together educators and researchers who are committed to enhancing the competitive advantage of Michigan dairy producers and Michigan's dairy industry. Through specialized dairy programs ranging from online resources and educational seminars to on-farm consultation from dairy educators located throughout the state, MSU Extension provides Michigan's dairy industry with easily accessible information on a consistent basis.

### ✿ Dairy Cattle Production & Management

Youth participants explore veterinary and animal science by learning to feed, train and care for dairy cattle project animals. They learn about dairy cattle breeds, animal selection, grooming, production, marketing dairy products, reproduction, health, cattle well-being and related agribusiness careers. Many events, such as judging, quiz bowl and skill-a-thon, don't require cattle ownership. Young people may exhibit and compete at statewide educational events such as 4-H Youth Dairy Days.

### Dairy Farm Labor Management & Regulations

MSU Extension educators and specialists help dairy business owners learn sound employee management practices and identify how to stay in compliance with federal and state regulations. Workshops are available that focus on building awareness of agriculture labor issues and compliance with farm labor laws and immigration law.

### Dairy Herd Management

MSU Extension works with dairy producers on farms and in classrooms and workshops to identify problems, implement research-based practices and explore alternative production practices. Extension educators help producers develop goals and standards for their operations and methods of evaluating employee management and performance. Specific dairy educational opportunities include:

- Calf care schools
- Dairy animal health
- Dairy cow nutrition and feeding
- Dairy genetic selection tools
- Reproductive management of dairy cattle
- Spartan III Ration Evaluator and Balancer



## Ensuring Safe & Secure Food

When you support MSU Extension's efforts to enhance residents' access to an adequate supply of safe, affordable food, program participants will 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.



### Dairy Marketing

Understanding the markets and tools that are available to manage price risk is important to dairy producers who are working to manage their cash flow and ensure profits. MSU Extension offers training on market and industry analysis of the factors that change the markets and use of commodity market tools to meet the goals of the business.

### Development of Young Dairy Producer Management Skills

Transitioning dairy farms to the next generation is a critical control point for a growing dairy industry. MSU Extension professionals work with young people in dairy production to help them understand their alternatives and improve their management skills.

## Farm Management

---

MSU Extension's agriculture and agribusiness management programs focus on farm business issues, farm labor management, farm markets, and food, agriculture, natural resources, and bioeconomy business development and expansion.

### Agriculture Labor Issues

MSU Extension offers educational sessions on issues such as tax withholding, payroll requirements and disclosure, the I-9 form, custom versus employee status, unemployment and a host of other complex state and federal regulations.

### Annie's Project

This program is dedicated to strengthening women's roles on modern farms. Through Annie's Project, farm women learn about financial and production records, marketing plans, risk management, communication, human resources and more. Participants share and compare life experiences and learn from other women who are living and working in a complex, dynamic agriculture business environment. An advanced Annie's Project program, Managing for Today and Tomorrow, is also available.

### Business Analysis & Evaluation System

This effort helps farmers conduct detailed financial and general production evaluations. Individual farmers receive benchmark comparisons of their farm with other, similar farms across Michigan, including a detailed cost of production analysis of the farm's major production enterprises.

### Commodity Marketing & Pricing Tools

Producers take part in group sessions targeted to specific commodity groups. The focus is on building a marketing plan using current market outlook data and programs that are available in their local communities.





### **Cropland & Building Leasing**

To ensure that there are no unpleasant surprises and to avoid misunderstandings, MSU Extension recommends that landowners and farmers negotiating land leases use written lease agreements. The Michigan Cash Farmland Lease provides variations the parties can select that are appropriate to their own situation. Other resources include leasing checklists, a sample greenhouse lease, Michigan land values and lease rates, and wind energy leasing information.

### **Estate & Farm Succession Planning**

MSU Extension teaches family farmers and other small business owners about estate tax issues and mechanisms for effective asset transfers. Our program helps operators identify the type of business structure that best fits their situation.

### **Farm Business Organization & Structure**

Limited liability companies (LLC), partnerships, and S and C corporations are some of the multiowner organizational types to consider when establishing a farm. Each type has pros and cons that potential owners need to consider. MSU Extension advises farm and farm business owners on the organization and structure of their businesses.

### **Farm Financial Performance**

Having accurate financial information is vital to farm and other agribusiness owners as they make business decisions, work with lenders and make farm succession plans. MSU Extension helps farm owners and managers create and assess their own financial statements (such as cost of production reports, balance sheets, and income and cash flow statements) and measure profitability and risk capacity.

### **Policy, Law & Regulation**

The national and state policies and regulations affecting the agricultural industry are constantly changing. MSU Extension helps producers keep up with changes in the Affordable Care Act, human resources regulations, labor management and the federal farm bill.

### **Risk Management**

MSU Extension offers programs designed to help producers evaluate their risk exposure in areas such as field crops, dairy production, commodity marketing and general financial risk. Our programs also help producers evaluate their potential need for crop insurance. Producers gain hands-on experience with tools that evaluate individual farm risk positions.

### **Telfarm**

MSU Extension's computer-based Telfarm accounting software is specifically designed for farms, making it possible for farm managers to closely monitor the financial progress of their operations. MSU Extension educators use this system to teach producers and others good financial management concepts. Telfarm is available to users for an annual fee.





## Field Crops

MSU Extension's research-based field crop production recommendations and resources are accessible through educational programs, fact sheets, bulletins, articles, websites and individual contacts. Our goal is to help producers improve their crop production efficiency through increased yields, improved quality, decreased input costs, protected yields and new technologies.

### Farm Soil Analysis Services

Soil analysis through MSU's Soil and Plant Nutrient Lab allows producers to make informed decisions about nutrient management that take into consideration the agronomic, economic and environmental implications of fertilizer use.

### Field Crops Webinar Series

To make field crop programming widely available, MSU Extension offers a weekly field crops webinar series each February and March. Pesticide applicator credits are available for joining the meetings online.

### Great Lakes Forage & Grazing Conference

This combined annual conference and trade show blends education and networking opportunities for all types of forage producers, graziers and agribusinesses. Attendees share research-based, cutting-edge information that is pertinent to staying profitable in challenging economic times. Seminar topics include efficient production and management of alfalfa, alfalfa-grass, grass, corn silage, cover crops and alternative forage crops.

### Integrated Crop & Pest Management Update for Agribusiness

Agribusiness representatives, retail sales and service professionals, private crop consultants, field crop educators and farmers attend this annual early winter event. They hear current MSU Extension recommendations for potential pest problems, fertilizer practices and weed control. The event is timed to happen as attendees are making year-end purchasing and sales decisions and preparing for the next growing season.

### Integrated Pest Management (IPM) Field Crops Meetings

These annual meetings give farmers up-to-date, research-based information and recommendations from MSU field crops specialists and MSU Extension educators. Meeting topics include weed, insect and disease management for all types of field crops.

### Michigan Hay Sellers List

For more than 20 years the Michigan hay sellers list has been connecting buyers and sellers of hay. The seller website, coordinated by MSU Extension with support from the Michigan Forage Council and Michigan Farm Bureau, facilitates the marketing of hay.

## MSUE PUBLICATIONS



### 2014 Weed Control Guide for Field Crops

This guide helps field crop growers choose weed control tools for the coming growing season. It includes crop-specific information and up-to-date tips on related issues like safe use of herbicides and environmental protection.

[bookstore.msue.msu.edu](http://bookstore.msue.msu.edu)





### Michigan Soybean Cyst Nematode Sample Analysis

The soybean cyst nematode is a major limiting factor in Michigan's soybean production. It's imperative that problem fields are identified for proper management. The Michigan Soybean Promotion Committee provides funding to pay for the cost of having MSU Diagnostic Services analyze up to 20 soil samples per farm.

### Pesticide Applicator Core Manual Reviews

MSU Extension offers review sessions across the state to help current and potential commercial pesticide applicators prepare for the Michigan Department of Agriculture and Rural Development Core Pesticide Applicators Certification exam.

### Saginaw Valley Research & Extension Center Field Day & Tour

This tour is held each August. Visitors are taken by wagon to the sites of various research trials, where they hear brief presentations from researchers and MSU Extension educators. While most of the research at the center focuses on sugar beets and dry beans, other rotational crops like corn, soybeans and wheat are studied there, too.

### Soil Academy

Robust yields in field crops start with the quality of the soil in which the crops are planted. MSU Extension's annual Soil Academy for farmers, fertilizer retailers, Extension educators and agricultural consultants covers soil fertility, nutrient management and other soil-related topics.

### Soybean Harvest Equipment Field Day

MSU Extension and the Michigan Soybean Checkoff conduct this annual field day. Participants hear about management techniques for identifying and reducing soybean harvest losses. Farm equipment company representatives also demonstrate new equipment in the field.

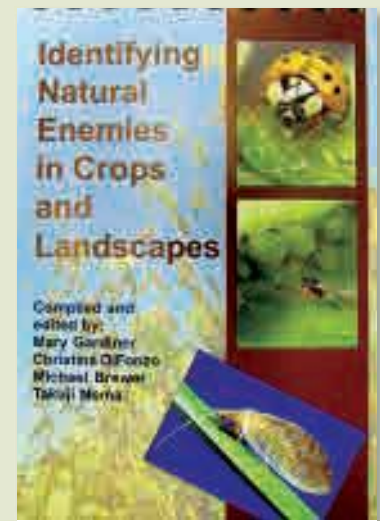
### Sugar Beet Agronomy Update Sessions

Six update sessions are held in the Great Lakes sugar beet growing region every February. These daylong sessions involve in-depth reporting of research conducted by researchers from the MSU sugar beet advancement team and Michigan Sugar Company. Topics presented in the open forums include anything that can improve the yield and quality of sugar beets.

### Sugar Beet Research Reporting Seminar

Michigan sugar beet producers hear about the latest sugar beet production research at this annual seminar. Researchers present 15-minute segments about sugar beet-related research on new products, disease control and crop management. The seminars are a combined effort of MSU Extension and Michigan Sugar Company.

## MSUE PUBLICATIONS



### Identifying Natural Enemies in Crops & Landscapes

This is a handy pocket-sized reference for identifying the beneficial insects that help control pests. Although originally written for field crop farmers, it is appropriate for use with other crops and in caring for yards and gardens.

[bookstore.msue.msu.edu](http://bookstore.msue.msu.edu)



### **Sugar Beet Seed Week**

Sugar Beet Seed Week features five meetings held each December around the Great Lakes sugar beet growing area. Participants learn how sugar beet varieties perform in yield, quality and disease resistance. The program is coordinated by MSU Extension and Michigan Sugarbeet REACH (Research and Education Advisory Council), an industry consortium.

### **Thumb Ag Reviews**

Each year, MSU Extension field crops educators in the Michigan thumb region organize this review of current research and demonstration field trials from the area. Corn hybrid and soybean variety trial results and agronomic studies for corn, soybeans, forages and wheat are presented to help producers make management decisions for the coming growing season.

## **Floriculture**

---

MSU Extension's floriculture programs help improve greenhouse crop production, business management and marketing. Our educators provide unbiased, research-based information on new production techniques, crop production protocols, energy conservation strategies, insect and disease pest control methods, enhanced postharvest longevity techniques (ways to help cut flowers and other plants last longer after harvest), retail and wholesale marketing strategies, and sound business management practices.

### **Floriculture Education Meetings**

These events, held in various locations across the state, provide greenhouse growers with timely information about crop production, pest management and business management topics related to floriculture and greenhouse operations. The meetings are typically offered several times a year and topics are chosen based on current needs and emerging issues in the industry.

### **Michigan Garden Plant Tour**

Growers, retailers and industry professionals get a hands-on education about new and existing plant selections and how they perform in different settings during this two-week tour. Participants learn about a wide range of ornamental crops, including popular commercial brands of annuals, perennials and shrubs.





### Michigan Greenhouse Growers Expo

This conference includes a large, three-day trade show and a variety of educational sessions. Floriculture growers and retailers learn about the latest research on cost-effective and environmentally friendly greenhouse production techniques; trends in marketing, technology and business; and current information on pathogen, insect and crop height control.

### The Online College of Knowledge

This online, self-paced course provides basic training to floriculture growers in Michigan and beyond in an efficient and cost-effective manner. Each section consists of brief recorded lectures, self-assessment quizzes and links to more information.

## Fruit & Nut

The Michigan fruit and nut industry is a large and important part of Michigan agriculture. MSU Extension fruit educators provide statewide and regional programming, and MSU Extension specialists often serve as resource people at organizational meetings and on the farm. MSU Extension offers education on issues such as pest management, food safety, business management, horticultural practices, irrigation and weed management. During the growing season we provide weekly updates on crop and pest conditions in the major fruit growing regions of the state, as well as updates and information on emerging issues in the Michigan fruit and nut industry.

### Grape Days

This event, more formally known as Southwest Michigan Horticulture Days, is an annual educational meeting and trade show at Lake Michigan College in Benton Harbor. The two-day meeting focuses on grapes, tree fruit, blueberries and vegetables. Participants learn about research-based pest control and horticultural production methods that help increase yields.

### Michigan Spring Peach Update

This conference is held in March of odd-numbered years at the Southwest Michigan Research and Extension Center. Participants learn about the newest varieties of peaches, pest management and horticultural techniques from researchers and growers based in Michigan and around the country.

### Northwest Orchard & Vineyard Show

This two-day education meeting and trade show is held every January near Traverse City. The meeting features two days of tree fruit programs and a concurrent wine grape session on the second day.

## MSUE PUBLICATIONS



### Greenhouse Energy Conservation Strategies

After labor expenses, energy is typically the largest overhead cost in the production of greenhouse crops in temperate climates. Of the total energy consumed, roughly 65 to 85 percent is for heating, and the remainder is for electricity and transportation. This bulletin discusses equipment and infrastructure investments and crop management strategies to reduce heating and electrical costs.

[bookstore.msue.msu.edu](http://bookstore.msue.msu.edu)



## Statewide & Regional Fruit Meetings

Regular winter meetings are held in areas of Michigan with high concentrations of fruit farms. Sessions led by MSU Extension fruit educators are designed to help growers learn about and use the most efficient, environmentally sustainable methods to maintain and increase production on their farms. Key meetings include:

- **Regional preseason meetings.** These meetings for tree fruit growers are scheduled just before the start of the growing season and focus on early spring tasks and emerging issues that are relevant to tree fruit growers. The meetings are held in several locations in southwest, southeast, west and northwest Michigan.
- **Strawberry preseason meeting.** Participants at this meeting learn about strawberry horticultural practices, and weed and insect control. They also share their production experiences with other strawberry growers.
- **Blueberry preseason meetings.** This five-session series focuses on emerging issues for blueberry growers. The meetings are attended by about 150 blueberry growers from Michigan, Canada, Indiana and Ohio. The meetings focus on horticultural topics and insect, disease and weed control.
- **Grape preseason meetings.** Grape management meetings are held each year in southwest and northwest Michigan during the preseason, prebloom and preharvest periods. Sessions focus on viticulture and insect and disease control, and feature specialists in each discipline. Participants also learn about current pest conditions and critical control windows during the season.
- **Weekly tree fruit integrated pest management (IPM) updates.** These meetings often start in April and continue until the cherry harvest begins in July. Participants learn from local MSU Extension fruit educators about pest conditions, crop development and other emerging issues during the season. The weekly updates cover tree fruit, grapes, blueberries and other small fruit.

## MSUE PUBLICATIONS



## 2014 Fruit Management Guide

This guide is designed to help fruit growers choose pest control tools for the coming growing season. It includes crop-specific information and up-to-date tips on related issues like safe use of pesticides, environmental protection, integrated pest management practices, and new and emerging pests.

[bookstore.msue.msu.edu](http://bookstore.msue.msu.edu)

## Tree Fruit Integrated Pest Management School

This two-day program focuses on current issues in tree fruit pest management. Participants learn how to identify and control insect and disease pests in their orchards using the latest IPM techniques, about new pesticides, and about the most economically and environmentally sustainable practices available to protect their fruit crops.

# Horses

MSU Extension provides equine enthusiasts, allied industry representatives and decision-makers with relevant, unbiased, research-based information about all aspects of equine management, care and use. Using a multidisciplinary approach, MSU Extension works with youth and adult volunteers, amateur owners and recreational riders, professional horse people and others to enhance equine management in an environmentally, economically and socially responsible manner. MSU Extension has both local and campus-based staff with expertise in diverse areas of equine production and management, including:

- Health
- Nutrition
- Animal behavior and welfare
- Judging and evaluation
- Equine-assisted activity
- Pasture and forage management (including toxic plants, farm safety, mortality issues, environmental management, and siting and developing new and expanded equine facilities)

## Horse Welfare

MSU Extension provides training for law enforcement agencies and other allied industry representatives on best practices for evaluating equine health, body condition, management and behavior, and on handling and haltering horses safely.

### 🌿 Horses & Ponies

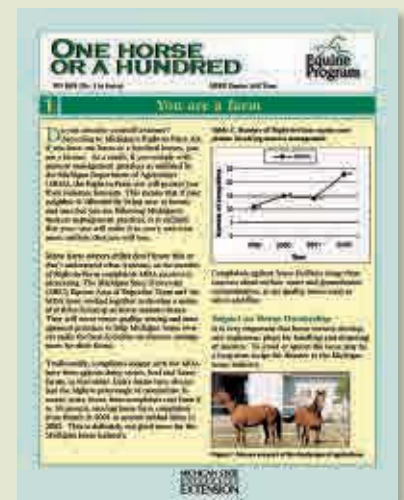
Youth participants explore veterinary and animal science by learning to feed, train and care for equine project animals. They compete in events such as endurance, trail, gymkhana and shows, and can exhibit at statewide events such as the State 4-H Horse Show. Many projects, such as horse science, horse quiz bowl and horse judging, don't require horse ownership and offer statewide competitions and participation opportunities.

### 🌿 Multistate Horse Judges & Show Managers Conference

Adequate training of horse show judges in working with youth exhibitors, as well as judging and placing horses, is an important part of creating a positive learning experience for 4-H members. Extension specialists from Indiana, Illinois, Kentucky, Michigan, Ohio and Pennsylvania combine their efforts to create an effective judges' training seminar that meets the needs of 4-H members, judges and Extension staff.



## MSUE PUBLICATIONS



## One Horse or a Hundred series

Many horse owners don't understand how the Right to Farm Act protects them from nuisance lawsuits as long as they are following Michigan's manure management practices. This series of fact sheets outlines how horse owners, whether they own one horse or a hundred, are affected by Michigan's Right to Farm Act.

[bookstore.msue.msu.edu](http://bookstore.msue.msu.edu)



### **My Horse University**

My Horse University brings research and knowledge from world-renowned experts to online courses and products. My Horse University's courses provide a comprehensive and convenient learning experience for horse enthusiasts throughout the world.

### **✿ Proud Equestrians Program**

This therapeutic horseback riding program for people with disabilities helps riders improve balance, coordination, posture and muscle tone. Other benefits of the program include self-esteem, self-confidence, discipline, and growth in knowledge and skills. Opportunities to participate exist for riders, volunteers, instructors and horse owners.

### **✿ Youth Competitive Horse Judging Clinic**

This workshop gives youth judging teams and their adult coaches the chance to gain experience and get an idea of what being part of a judging team is about. Participants judge high-quality quarter horses and deliver a set of oral reasons about a class they have judged. They receive feedback on their efforts and pick up tips on ways to improve.

## **Nursery & Christmas Trees**


Climate, soils and a centralized location combine to make Michigan a national leader in the production of landscape nursery stock and Christmas trees. MSU Extension offers timely and relevant educational programming for the nursery and Christmas tree industries. The goal of our educators, specialists and researchers is to deliver the latest science-based information to keep Michigan producers competitive and profitable.

### **Best Management Practices**

This collection of programs, videos and field demonstrations highlight and help growers understand best management practices for nurseries and Christmas tree plantations. The programs focus on managing water quality, irrigation and nutrition, and help growers develop a systems approach to protecting their operations from invasive pests, those requiring a quarantine and other pests.

### **Integrated Pest Management (IPM) for Christmas Trees**

One- to two-day IPM workshops are held in the winter and field tours take place during the growing season to help participants learn about key insects, diseases, nematodes and weeds that affect conifers. Attendees learn the latest IPM strategies and hear current pest management information from MSU Extension experts. Pesticide recertification credits are offered for people who attend the workshops.



“4-H has given our son and our family the opportunity to participate at the level that met our abilities. It has challenged our son and helped him integrate into the community. Inclusion is a big part of our philosophy and 4-H has done that!”

– Parent of a Proud Equestrian Program (PEP) 4-H member



### **Nursery Winter Update Conference**

This daylong program provides nursery growers with the latest university research-based production information that will help them maintain plant quality and profitability. Attendees can receive RUP (restricted use pesticides) credits for their pesticide applicator licenses.

### **Soil Management for Sustainable Christmas Trees**

This in-depth seminar focuses on proper soil fertility management and sustainable Christmas tree production. Taught by MSU Extension educators and specialists, the workshop provides growers, consultants and agency staff with current recommendations and information on growing high-quality Christmas trees.

### **Summer Nursery Updates**

These timely educational programs are offered during the growing season to update participants on production-related issues. Topics include pest management, plant nutrition, water use and regulatory issues affecting nursery crops.

## **Organic Agriculture**

---

MSU Extension provides technical information through outreach and educational programs. We help farmers who are seeking information and guidance about organic practices in any area of crop production. Assistance is also available for farmers and food processors who are in the process of becoming organically certified through the USDA National Organic Program.

### **Organic Reporting Session**

This annual meeting is for farmers, practitioners and researchers who are interested in or engaging in organic production and related research. MSU Extension educators and specialists provide research-based information on organic production. The meeting links farmers and researchers and includes information on state and federal programs related to organic agriculture.





## Pest Management

MSU Extension offers pest management resources and programming designed to maintain or improve the environmental and economic sustainability of commercial agriculture in Michigan. MSU Extension pest management programming serves growers of field crops, specialty crops, and the landscape and turf “green” industries. Our cross-commodity programming addresses universal issues facing agriculture, including pesticide application and safety, pesticide resistance, invasive pests, and pollinator and beneficial insect conservation. We encourage commercial producers and home gardeners alike to incorporate integrated pest management (IPM) principles and practices into their operations.

### Enviro-weather

Enviro-weather is a sustainable weather-based information system that helps users make pest, plant production and natural resource management decisions in Michigan. The service is online at [enviroweather.msu.edu](http://enviroweather.msu.edu).

### Integrated Pest Management Academy

At the IPM Academy, growers can learn how to improve their IPM practices and take advantage of the expertise of MSU faculty members and researchers and MSU Extension educators and specialists. The academy offers a rare opportunity to hear from experts working in a variety of disciplines and across cropping systems. The event is also available online.

### Pesticide Safety & Education

The MSU Extension Pesticide Safety and Education program offers commercial pesticide certification training and updates for pesticide applicators seeking recertification credits. It also provides education and information for applicators and the general public about pesticide safety.



## MSUE PUBLICATIONS



### Ornamental Plant Pest Management for Commercial Applicators in Category 3B

This 132-page book contains basic scientific information and practical solutions to pest control problems. It provides the information readers need to become Michigan certified commercial applicators in Category 3B, Ornamental Plant Pests. It's also useful to homeowners and others who are interested in learning more about managing ornamental plant pests.

[bookstore.msue.msu.edu](http://bookstore.msue.msu.edu)





## Pork

MSU Extension provides pork producers, allied industry representatives and decision-makers with relevant, unbiased, research-based information about all aspects of pork production. Using a multidisciplinary approach, MSU Extension works with all interested parties, including farms using intensively managed pork production systems, to enhance the production of safe, nutritious and high-quality pork products in an environmentally, economically and socially responsible manner. Our local and campus-based staff have expertise in diversified areas of pork production and swine management including swine health, nutrition, genetics, reproduction and mortality management; animal behavior and welfare; meat science; air quality; environmental management; siting new and expanding livestock facilities; and livestock marketing.

### Green & White Show

This annual youth educational program includes a live hog show, showmanship and educational events at the MSU Livestock Pavilion.

### Midwest Swine Nutrition Conference

This annual conference in Indianapolis helps feed-industry specialists, consulting nutritionists, swine veterinarians and producers learn cutting-edge swine nutrition and feeding practices.

### Pork Quality Assurance Programs & Certifications

MSU Extension helps producers obtain National Pork Board Pork Quality Assurance (PQA) Plus certification. The certification provides a framework for significant, relevant food safety standards and improved animal well-being. Other assistance and information is available for the National Pork Board Youth PQA and the National Pork Board Transport Quality Assurance programs.

### Professional Pork Producers Symposium

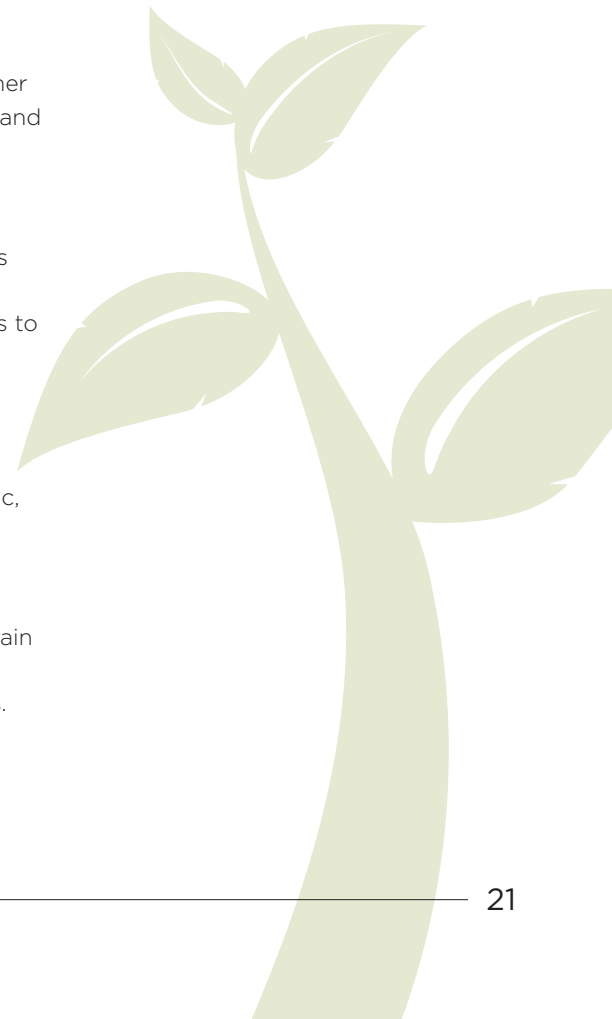
MSU Extension, in conjunction with Michigan Pork Producers Association, holds this annual producer-focused event to discuss and present timely information about the pork industry. Topics range from new housing options and feed plans to disease management.

### Statewide Pork Industry Information Meetings

These meetings for swine farm owners and employees present information about new technologies, updated production practices, and changing economic, environmental and social considerations.

### ✿ Swine Production & Management

Youth participants explore veterinary and animal science by learning to feed, train and care for swine project animals. They also learn about swine breeds, animal selection, production, marketing, reproduction, health and agribusiness careers. Participating in breeding stock and market animal projects and in statewide competitions and educational events are all possibilities.





## Poultry

---

The diversity of poultry production in Michigan requires programming that is tailored to both backyard and hobby producers and to commercial producers. Most Extension programming geared toward commercial producers is multistate or national and requires travel outside of Michigan. Programs for backyard and hobby poultry producers are held in Michigan and are open to people at all levels of expertise.

### **Midwest Poultry Federation Educational Seminars**

The educational seminars during the Midwest Poultry Federation tradeshow are focused on poultry production in the Midwest. Participants can choose from several seminars held over a two-day period on topics such as turkey growing, litter and environmental management, egg and meat processing, and poultry nutrition.

### **Multistate Poultry Feeding & Nutrition Conference**

This is a premier poultry nutrition conference. Participants learn cutting-edge information that addresses significant issues that will affect poultry nutrition today and in the future.

### **National Egg Quality School**

The school, held each May, trains participants in shell egg quality and safety throughout the food system. Experts from universities and industry, along with federal and state regulatory officials, provide a comprehensive, three-and-a-half-day program related to all things eggs. The school consists of lecture periods, small-group discussions and laboratories.

### **National Poultry Waste Management Symposium**

This symposium communicates the latest technology and research about the by-products from producing and processing poultry. The information provided helps midlevel managers and decision-makers understand and manage the challenges associated with concentrated animal production facilities.

### **Poultry Health & Management School**

At this two-day school in early May, participants attend either meat bird or laying hen school. They learn about changes in management practices and disease issues within the commercial industry through lectures and laboratory periods.

### **✿ Poultry Production & Management**

Youth participants explore veterinary and animal science by learning to feed, train and care for bird project animals such as chickens, turkeys and ducks. They also learn about poultry breeds, animal selection, production, marketing, reproduction, health and agribusiness careers. Participating in breeding stock and market animal projects and in statewide competitions and educational events are all possibilities.

### Small Flock Poultry Workshop

This workshop is held during Agriculture and Natural Resources (ANR) Week each March. Sessions cover basic information for first-time producers and introduce more complex topics for more experienced backyard hobbyists. Topics include brooding, nutrition, management practices and incubation.

### Winter Poultry Seminar

The Winter Poultry Seminar is held each February in western Michigan. Participants learn about practices related to the management and production of meat birds and laying hens that they can quickly implement in their commercial poultry operations. MSU Extension hosts the seminar with the Michigan Allied Poultry Industries.

## Sheep & Goats

---

MSU Extension performs applied research and develops educational programs and materials to address the emerging needs of Michigan’s diverse small ruminant industry. Michigan is unique in the Upper Midwest in that it has large commercial farms focused primarily on meat production, along with a growing small-farm segment engaged in purebred, niche fiber and artisan cheese production. MSU Extension offers programming and partners with state and national production organizations to address industry challenges. We also provide one-on-one help to producers in all areas of small ruminant production, including preventive health, disease management, nutrition, marketing and land management.

### Forage Management Program

Participants in this program learn how to evaluate, develop and manage their land to produce the forage their animals need. The three-day program provides comprehensive training in farm resource assessment, land improvement, forage budgeting, grazing management, strategic use of annual crops and machine harvest strategies for small ruminant production.

### ✿ Goat Production & Management

Youth participants explore veterinary and animal science by learning to feed, train and care for dairy, meat and hair goat project animals. They also learn about goat breeds, animal selection, production, marketing, reproduction, health and agribusiness careers. Participating in breeding stock and market animal projects and in statewide competitions and educational events are all possibilities.

### Integrated Parasite Management Program for Small Ruminants

Participants in this online seminar series learn about parasite biology, grazing management and infection monitoring plans that are critical in creating a sustainable parasite control program. This program has evolved in response to the documentation of extensive dewormer resistance in Michigan flocks and herds.





## Michigan Shepherd's Weekend

MSU Extension develops the educational content for this three-day event that is sponsored by the Michigan Sheep Breeders Association. It includes a young producer's discussion forum, a meat goat production education series and a dynamic youth education program.

### ✿ Sheep Production & Management

Youth participants explore veterinary and animal science by learning to feed, train and care for sheep project animals. They also learn about sheep breeds, animal selection, grooming, production, marketing, reproduction, health and agribusiness careers. Participating in breeding stock and market animal projects and in statewide competitions and educational events are all possibilities.

### Small Ruminant Birth Management Program

In this program, which combines discussion and hands-on activities, participants explore flock and herd management approaches, maternal and newborn assessment skills and treatment procedures that will help them and their flocks and herds make it through the birthing season safely and successfully.

### Small Ruminant Field Days

These field days are presented around the state each year. Participants learn about innovative production practices in seminars and also see them demonstrated on the farm. Previous field day topics have included cover crop grazing, accelerated production, modern forage feeding systems, using brassicas (herbs in the mustard family, such as broccoli and cabbage) in pasture renovations and advances in pasture infrastructure.

## Vegetables

---

Michigan is home to one of the most diverse vegetable industries in the nation. MSU Extension helps growers reduce their risk of yield loss due to pests, reduce input costs, increase yields, extend the growing season through hoophouse production and conserve natural resources. During the growing season, MSU Extension educators visit farms to help growers address emerging issues and provide weekly electronic updates that reach a large number of growers.

### New & Emerging Commercial Vegetable Producer Support

MSU Extension provides support to new and emerging commercial vegetable producers whether they're producing for a farmers market, roadside stand, community-supported agriculture program or contract production. MSU Extension educators provide expertise and link producers to support tools for their operations.

