



Ornamental Horticulture

Programming to Increase Profitability and Sustainability of Michigan's Ornamental Plant Industry

Michigan State University (MSU) Extension ornamental horticulture educators serve Michigan's floriculture, Christmas tree and nursery businesses in order to increase their sustainability and profitability. Michigan has 452 greenhouse growers who produce over \$405 million of wholesale floriculture crops, 352 nurseries that produce over \$88 million of container and field tree and shrub production, and 560 Christmas tree farms producing \$38 million of conifers sold as Christmas trees. MSU Extension ornamental horticulture educators address the issues critical to these Michigan businesses, including pest and disease management, plant nutrition, marketing, business management, water quality and sustainability.

Climate, soils and a centralized location to markets make Michigan a national leader in producing greenhouse-grown plant material, landscape nursery stock and Christmas trees. Michigan is the third largest floriculture crop producer and the largest young plant producer in the United States. In 2014, the total value of all floriculture crops in Michigan was over \$409 million.

Michigan is the third largest producer of Christmas trees in the United States and ranks 11th in the nation in nursery stock sold, which is worth \$1.2 billion. MSU Extension horticulture programming includes the following programs.

Summer and Winter Christmas Tree Meetings

These daylong programs provide nursery and Christmas tree growers with the latest university, research-based production information that will help them maintain plant quality and profitability. Topics include pest management, plant nutrition, water use and regulatory issues.

Best Management Practices for Nursery and Christmas Tree Crops

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.

Floriculture and Nursery Digests and Newsletters

Timely news articles are published via the MSU Extension News Digests with the latest in news, research and analysis from MSU Extension's vast network of educators and specialists. Extension educators also send pest updates, news and current recommendations to ornamental plant growers in their programming regions.

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.



Applied Research

MSU Extension applied research in plant production and marketing help ornamental plant growers in Michigan.

- Production
 - › Effective use of fungicides to manage plant pathogens on ornamental crops.
 - › Applying plant growth regulators (PGR) for controlling height growth of container-grown conifers.
 - › Using LEDs to deliver supplemental lighting in greenhouses and sole-source lighting of high-value specialty crops.
 - › Remediating and reusing nursery run-off to irrigate ornamental crops.
 - › Improving transplant success of container-grown trees.
 - › Effect of release rate of controlled release fertilizer on growth and foliar nutrition of container-grown conifers.
 - › Using plant growth regulators to control growth and cone production in Christmas trees and ornamental conifers.
 - › Evaluating nitrogen source and application timing for optimal nitrogen uptake.
 - › Evaluating Turkish and Trojan fir for Christmas tree production through the Collaborative Fir Germplasm Evaluation Project.
 - › Conducting insecticide efficacy studies on dip solutions on annual cuttings to increase use of biological controls with clean propagative materials.
 - › Researching the impact of imidacloprid as a soil drench on potted flowers and linden trees as it impacts pollinators 1 and 12 months after treatment.
- Marketing
 - › Perceptions of plant guarantees by consumers.
 - › Eye-tracking study to access where consumers look when viewing plants in branded containers.
 - › Using RTF codes for tracking and inventory of plant material.

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.



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 course contains pre-recorded lectures, self-assessment quizzes and tests, additional reading and links to more information.

Trade Magazine Articles

MSU Extension staff regularly contributes articles to multiple trade publications each year including Michigan Farmer, The Great Lakes Christmas Tree Journal, Green Profit, American HORT News, Greenhouse Grower and Greenhouse Product News magazines.

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