

West Michigan nursery growers summer tour

Program organizer

Thomas A. Dudek, District Extension Horticulture & Marketing Agent

Program presenters

Jeff Andresen, Department of Geography, Diane Brown-Rytlewski, Nursery and Landscape Integrator, CIPS, Matt Carlton, Stock Block Manager, Spring Meadow Nursery, Thomas A. Dudek, District Extension Horticulture & Marketing Agent, Bud Hart, Forestry and Natural Resources, Carmela Rios, Department of Horticulture, Todd Herrick, New Plant Development/Research and Development Coordinator, Zelenka Nursery, David Smitley, Department of Entomology

Industry partners

Northland Evergreen Nursery, Zelenka Nursery, Spring Meadow Nursery

The tour, held on August 1, focused on six research/demonstration plots located at Northland Evergreens Nursery, Spring Meadow Nursery and Zelenka Nursery. The tour featured updates of field research/demonstration trials currently taking place.

The tour began at Northland Evergreens Nursery with a discussion by Diane Brown-Rytlewski about using indicator plants for predicting insect activity. Northland has planted an “indicator plant garden” consisting of sixteen different trees and shrubs in a landscape setting outside nursery offices. The plants serve as cues to determine which insect to scout for when a certain phenological event has occurred. For instance, when “PJM” Rhododendron is in first bloom we can expect gypsy moth egg hatch to occur.

Use of indicator plants will help nurseries use pest scouting time more efficiently by improving accuracy of timing for pest treatments, thus reducing quantities of pesticide used, allowing more effective use of selective control measures. In 2002, area nursery growers will be able to access pest management information about indicator plants on the web, via email and through other local extension delivery systems.

Jeff Andresen shared information about practical uses of the new automated weather station at Northland Evergreens Nursery. The station is the first fully automated Michigan Ag Weather Network Station at a production nursery in the state. Data is collected 24 hours a day, 7 days a week and all year long under both field and greenhouse conditions. See Jeff Andresen’s article on page 12 for more infor-


mation. Data collected should be useful to researchers and growers alike. Growing degree-day information collected from this station will be useful to growers when used along with the indicator plant information for pest activity and scouting. Funds for setting up this weather station were contributed by local nurseries, nursery suppliers and a local watershed project.

David Smitley and Diane Brown-Rytlewski discussed the use of pheromone traps for timing treatments for dogwood, peachtree, lilac and lesser peachtree borer in nurseries. Pheromone traps utilize a female sex-attracting lure to trap male moths. These pheromone traps can help growers determine when to initiate treatments for clearwinged borers that attack nursery stock. In 2001, pheromone traps were monitored weekly at this site to track adult borer emergence activity. The data collected here and on the MSU campus will be used to refine treatment guidelines for these four borer pests.

Matt Carlton from Spring Meadow Nursery and Thomas Dudek discussed alternative cover crop options for growers at the plots located at Spring Meadow Nursery. A long-term cover crop demonstration plot was initiated this summer and included hairy vetch, buckwheat, oilseed radish, as well as sudan grass and rye. Information was shared about the biomass potential, nitrogen fixing potentials and weed control needs of these crops. Disease, insect and nematode suppressing characteristics of the cover crops were discussed as well.

At Zelenka Nursery, Bud Hart and Carmela Rios presented information from the second year of the GREEN project on improving groundwater quality in field-produced nursery stock. The participants viewed plots containing various fertilizer application strategies.

David Smitley reviewed results of the fletcher scale trial conducted at Zelenka Nursery this year. Results showed the best treatments for fletcher scale crawlers were either Dursban or Sevin. Timing studies results were also discussed, and the results indicated crawler treatments made in late June and again in September gave the best results.

At the last stop at Zelenka Nursery, Todd Herrick shared observations and showed the group a pre-emergence herbicide trial for container grown nursery stocks. The study compared Rout, Snapshot, Regal and Broadstar. The results will be useful in obtaining a label for Broadstar, especially under poly in Michigan nurseries. 

Ornamental plant industries education in Southeast Michigan

Program organizers

Greg Patchan, Oakland County MSUE Agent and Mary Wilson, Genesee County MSUE Horticulture Agent

Funding

Self funded through program registration

Significance

Solving landscape ornamental and turfgrass problems is key to the success of ornamental plant businesses. However, the amount of knowledge to be mastered is extensive. The landscape is a dynamic ecosystem; the environment, plants, pests and resulting management techniques are constantly changing. Businesses must have employees trained in current pest management strategies to remain competitive in this industry. Coupled with this is the lack of sufficient numbers of trained pesticide applicators to meet industry demand.

Program goals

1) Train industry professionals to become certified pesticide applicators, 2) Provide certified pesticide applicators with CEUs on current issues relating to environmental protection, personal safety, regulations and pest management, and 3) Provide current and environmentally sound pest management information


to industry professionals so they are responsible stewards of the environment.

Programs

Turfgrass management: Weed Control and Growth Regulators plus Updates from Michigan Department of Agriculture (MDA)

Ron Calhoun (MSU Turfgrass Specialist), Polly Kapala (Pesticide Enforcement Manager, MDA) and Jack Knorek (Clean Sweep Manager, MDA) provided knowledge to help professionals win the battle with weeds, tame excessive grass growth and address regulatory issues.

Pests in the landscape: Lawns and Ornamentals. Dr. David Roberts (SE District Horticulture Agent), Dr. David Smitley (MSU Entomologist) and David Gilstrap (MSU Turfgrass Specialist) provided current information to accurately identify and manage turf and ornamental problems to help professionals meet the challenges of the 2001 growing season.

Pesticide applicator training: Joe Kelpinski (Genesee County Agriculture Agent), Greg Patchan and Mary Wilson provided workshops covering “Core,” “Turfgrass” and “Ornamentals” manuals. Workshops targeted new employees as well managers/owners and included case studies to re-enforce issues. 

2001 Summer turf and landscape tour

Author

Rebecca Finneran, Kent/MSUE Horticulture Educator

Industry partner

Greater Grand Rapids Landscape Association (GGRLMA)


Significance

This annual summer program provides field training to address basic landscape management issues like weed identification and control, soil types, and insect and disease identification and control. Topics change yearly, based on current issues affecting the green industry.

Program description

Morning workshops included presentations by several MSUE specialists. MSU Crops and Soils Turf Specialist, Ron Calhoun. Ron’s workshop, entitled “It’s a Weed’s Life” gave participants a chance to learn to identify weeds and discuss controls based on

the weeds’ lifecycles. MSU Crops and Soils Assistant Professor, Kevin Frank presented “Straight Talk About Dirt” that covered soil types and soil testing, compaction and the effects of different soil conditions on the growth and resiliency of turf. MSU Plant Pathology Diagnostician Jan Byrne followed with “What’s Up Doc?” She presented information about field diagnosis of plant disease, and shared some of the latest samples sent in to the diagnostic clinic with workshop participants. (See photos on page A-4).

The afternoon session was a scavenger hunt that challenged the diagnostic skills of the contestants. Teams had an hour to collect and correctly identify samples of as many beneficial and pest insects, plant diseases and weeds as possible. Rebecca Finneran, Diane Brown-Rytlewski (MSU nursery and landscape integrator) and John Page and Paul Richter from J. Mollema and Son inspected the samples and tallied the results. The winning team each received a hand lens as a prize for having the most correctly identified samples. 

Integrated plant health training program for landscape management providers

Workshop organizers

Roberta Lawrence, Greg Patchan, Dave Roberts, Jim Kalishek, Andy Norman, Sandra Richards, Rebecca Finneran, Mary Wilson, Bob Bricault

Workshop instructors

Rebecca Finneran, Mary Wilson, Greg Patchan, Dave Roberts, Diane Brown-Rytlewski, Duke Elsner, Jim Kalishek, Kara Griffith

Funding

Self-funded through registration fees

Industry partners

J. Mollema and Son Inc., Metropolitan Detroit Landscape Association, Applewood (C.S. Mott Estate), Dow Gardens, Cranbrook Estate Gardens, Edsel Ford Estate, Hope College and Calvin College

Significance

Landscape management is one of the fastest-growing segments of the nursery and landscape industry and tends to be highly reliant upon the use of pesticides. Education is vital for landscape management providers to be successful in practicing integrated pest management (IPM). Due to the diversity of both plant species and associated diseases and insect pests, IPM in landscape situations is more complex than applying IPM to other commodity crops. Site conditions may also vary greatly, increasing the need for understanding environmental causes of plant problems and cultural practices appropriate for a variety of site conditions

Program description


The IPM training course for plant health providers is now coming into its third year. The program was held in five locations across the state during 2001: Grand Rapids, Tipton (Hidden Lake Gardens), Clinton Township, Traverse City and Flint.

The Integrated Plant Health training course consisted of 18 hours of intensive classroom training coupled with hands-on laboratory sessions in the diagnosis and management of plant problems caused by insects, mites and diseases. Also included in the workshops were discussions about abiotic causes of plant problems, plant installation, soils and nutrition.

Participants received classroom handouts, a textbook (*Plant Health Care for Woody Ornamentals* by John Lloyd) and a hand lens. The hands-on portions of the classroom work, such as calibrating and use pocket pH meters and examining insect and disease samples, were particularly popular. Participants were eligible for nine recertification credits (core or 3b) for the classroom training. Dave Roberts, David Smitley, Greg Patchan, Roberta Lawrence, Rebecca Finneran and Mary Wilson developed training materials.

To accompany the Plant Health Care Workshops, a series of IPM lab walks were held from June through September at a number of locations across the state. Two recertification credits (3b) were available for each of the walks. Tours covered topics such as plant identification, integrated plant health care, pest problems and control, tree injection systems, pruning and cabling. One tour focused on turfgrass, including turfgrass identification and management practices, pest problem identification and control options, growth regulators and weed management as well as renovation of old lawns. Participants had the opportunity to get hands-on experience in identifying plant health problems in field settings and had a chance to ask Michigan State University experts questions. Outdoor labs were held at Brook Lodge in Augusta, Hope College in Holland, Calvin College in Grand Rapids, Edsel Ford Estate, Grosse Pointe Shores, neighborhoods in Oakland County, Cranbrook Estate Gardens in Bloomfield Hills, Applewood in Flint, and Dow Gardens in Midland. The Metropolitan Detroit Landscape Association (MDLA) co-sponsored the IPM lab walks at the Oakland County, Cranbrook and Edsel Ford locations. Color photo on page A-4.

Results

Participants were given pre- and post- tests for each major topic. In the area of soils and abiotic plant health problems, average scores increased from 59 percent on the pre test to 89 percent on the post test. Test scores on insect pests increased from 40 percent to 73 percent and plant disease knowledge increased from 57 percent on the pre test to 75 percent on the post test. The Integrated Plant Health Training Program is scheduled to take place at several locations in 2002. Contact one of the project organizers listed above for additional details and workshop locations and dates. 

MSU/MNLA Summer plant identification workshop August 6, 2001

Author

Robert E. Schutzki, Department of Horticulture

Industry partner

Michigan Nursery and Landscape Association
(MNLA)

Significance

The MSU/MNLA Summer Workshop capitalizes on the educational opportunities offered by the MSU campus and is co-sponsored by MSU Department of Horticulture and the Michigan Nursery and Landscape Association. The workshop couples classroom instruction with field activities, using the MSU Gardens/Grounds and the Horticulture Teaching and Research Center (affectionately known as the Hort Farm) as laboratories. The Plant Identification Workshop varies from year to year, featuring new plants, underutilized selections and an occasional revisiting of old favorites. The maturity of our campus landscape often gives a new awareness of size, form and ornamental appeal of many of our woody and herbaceous landscape plants.


Program description

Plant Identification 2001 began with an examination of taxonomic terminology and a detailed look at vegetative plant parts presented by Bob Schutzki. We began with leaf morphology of angiosperms and gymnosperms. Discussions included leaf type, arrangement, shape, margins and apices. Stem and bud morphology followed with an examination of bud size, shape and texture; leaf scars; and bud scales.

Featured presentations were contributed by Doug Badgero, manager of the Horticulture Demonstration Gardens and John Mugg, manager of the Botany greenhouses and Butterfly House. Doug Badgero gave a first hand look at the Annual Trials within the Horticulture Demonstration Gardens, highlighting some landscape favorites for consideration. New introductions and potential new releases of annuals are compared to industry standards allowing producers, retailers and landscape managers to plan for the future. Participants were given the Horticulture Trials booklet listing the evaluation results compiled by Trials Coordinator Dr. Norman Lownds, and encouraged to tour the trials.

John Mugg gave a detailed approach in selecting plants for attracting bees, butterflies and birds to the landscape. John outlined plant characteristics that attract specific groups, touched on plant management strategies and highlighted specific plants that are successful in adding another dimension to the aesthetic appeal of the landscape.

Plant Walks were conducted through the Clarence E. Lewis Landscape Arboretum and Horticulture Demonstration Garden featuring a mix of evergreen and deciduous trees, shrubs and ground covers. Tour guides included: Diane Brown-Rytlewski, Nursery and Landscape Integrator and Bert Cregg, Marcus Duck, Tom Fernandez, Brad Rowe, and Bob Schutzki of the Horticulture Department. In addition, the new Michigan Certified Nurseryman (MCN) plant list was previewed.

The MSU/MNLA Summer Workshop is an annual event conducted in mid- to late summer. Contact Debra Greene, MNLA director of education, for 2002 dates. 

MSU/MNLA Summer pruning workshop August 7, 2001

Author

Robert E. Schutzki, Department of Horticulture

Industry partner

Michigan Nursery and Landscape Association
(MNLA)

Significance

The MSU/MNLA Summer Workshop capitalizes on the educational opportunities offered by the MSU campus and is co-sponsored by MSU Department of Horticulture and The Michigan Nursery and Landscape Association. The second day of the annual workshop focused on landscape pruning and coupled classroom instruction with pruning activities in the Clarence E. Lewis Landscape Arboretum and the Horticulture Demonstration Gardens. Participants were given the opportunity to put what they had learned during classroom lectures into practice during the pruning sessions held on campus.

Program description

The workshop began with “Back to the Basics” and lecture discussions on the Art, Science and Practice of Pruning, presented by Bob Schutzki. Pruning begins with an assessment of plant function and an understanding of plant biology. Form follows function is true in managing plant growth and development, whether the form relates to production or landscape objectives. Understanding plant response to environmental and cultural stimuli is key in achieving the desired form. Lecture included discussions on pruning techniques, timing and details specific to different plant types. Featured lectures were also given by Diane Brown-Rytlewski, Nursery

and Landscape Integrator, and Tom Fernandez, Assistant Professor of Horticulture.

Diane Brown-Rytlewski provided an overview of the selection, use and care of pruning tools. She discussed the differences between anvil and by pass tool types for hand shears and loppers, explained the right and wrong ways to use hedge shears, and presented the basic characteristics of pruning saws. Tool maintenance and sharpening techniques were also included in the presentation. Tom Fernandez discussed the tree fruit training systems featured in the Clarence E. Lewis Landscape Arboretum. The Guttegen V, slender spindle and vertical axe are training systems used in the commercial production of apples. Each has the potential of being used in residential landscapes where fruit production is a priority. These training systems are efficient with respect to space and labor needs for cultural practices. Tom also discussed the open center systems used on peaches, apricots and nectarines.

The remainder of the day was spent in the field. Pruning sessions included work on evergreen shrubs, deciduous shrubs and flowering trees. The field sessions were conducted with the assistance of Diane Brown-Rytlewski and Bert Cregg, Marcus Duck, Tom Fernandez, Bob Schutzki and Julie Stachecki of the Horticulture Department. Participants were able to test their skills on dense yews, junipers, wild viburnums and dogwoods, and of course, sucker and watersprout filled crabapples. The one thing all the plants had in common was they were in bad need of some management. Related photo on page A-4

The MSU/MNLA Summer Workshop is an annual event conducted in mid- to late summer. Contact Debra Greene, MNLA director of education, for 2002 dates. ✂



Left: Bert Cregg with his pruning team's entry in the biggest brush pile contest.

Nursery Production School, February 20-22, 2001

Author

Tom Fernandez, Department of Horticulture, MSU.

The 2001 Nursery Production School, held at the Kellogg Biological Station in Gull Lake, was an in-depth program providing critical information for successful production of nursery crops. The school provided management information for those involved in production decisions regarding field and container production; nutrition; irrigation and water quality; and disease, insect and weed management. The school was designed for nursery professionals with a working knowledge of nursery production wishing to improve their skills. The 2001 Nursery Production School provided the most current technical information needed for successful production of field and container nursery crops provided by experts in their field.

Topics and speakers

Container Substrates and Fertility- Ted Bilderback, Professor and Nursery Extension Specialist, Horticultural Science Department, North Carolina State University.

Ted's presentation included discussion about the physical properties of container substrates, air and water relationships, and substrates nutrition and irrigation. He stressed the need to take a systems approach to managing the various components of container substrates.

Speaker profile

Ted's research and extension programs have focused on environmentally-conscious cultural practices for growing nursery stock with emphasis on container substrates, plant and substrate nutrient levels and irrigation management. He has received numerous awards, including the American Association of Nurserymen's Extension Award in 1993, and one of the six Environmental Awards from the Southern Nursery Association in 1999. Ted's web page is at http://www.cals.ncsu.edu/hort_sci/faculty/Bilderback.html

Weed Management for Field and Container Nurseries- Ted Whitwell, Professor and Chair of the Department of Horticulture, Clemson University and Jeanne Briggs, post-doctoral research associate, Department of Horticulture, Clemson University

Effective weed management is a subject of

considerable interest to nursery growers. Ted and Jeanne covered topics such as ecological principles of weed management, pre- and post- emergent herbicides and the fate of herbicides in the environment. Their discussions included methods for reducing the amounts of herbicides in runoff water and management strategies for specific weed problems.

Speaker profile

Ted has been working in the area of weed management in ornamental crops for over 20 years. His research focuses on weed management and ecology of nursery crops and turfgrass, reducing the impact of nursery practices on the environment. Ted received the Outstanding Young Weed Scientist Award from the Southern Weed Science Society in 1990 and the Porter Henegar Memorial Award for outstanding contributions to Environmental Horticulture Research from the Southern Nursery Association in 1997. To find out more about Ted go to: <http://virtual.clemson.edu/groups/hort/Faculty/Whitwell.htm>

Speaker profile

Jeanne has worked closely with the nursery industry in South Carolina for many years and conducted much of her dissertation research on-site at Gilbert's Nursery in South Carolina. Jeanne's research has focused on incorporating IPM in nursery production and remediating pesticides from nursery runoff water.

Managing Diseases in the Nursery- Gerard Adams, Associate Professor, Department of Botany and Plant Pathology, MSU.

Gerry spoke about common diseases affecting nursery stock and how to manage them.

Speaker profile

Gerry's current research areas include the development of molecular methods for accurate detection of pathogens causing needlecast diseases of evergreens and tracking the introduction and spread of dogwood anthracnose in Michigan. He teaches Diseases and Insects of Forest and Shade Trees and an advanced mycology workshop. Gerry's website: <http://extension.bpp.msu.edu/gerardadams/>

Nutrition in Propagation- Bradley Rowe, Assistant Professor, Department of Horticulture, MSU.

Brad discussed the effects of nutrients on rooting during propagation, including the influence of nitrogen on root formation, methods of nutrient application, and timing of nutrient applications.

Speaker profile

Brad is currently responsible for teaching courses in plant propagation, introductory horticulture, landscape construction and landscape contract management. Brad's research interests include propagation and nursery production of landscape plants and their proper use in the landscape. Current research projects involve the use of chlorophyll fluorescence measurements to correlate stock plant stress with subsequent adventitious rooting of cuttings, the use of alternative methods of weed control for liners, and the development of growing protocols for "green roof" rooftop gardens. Go to http://www.hrt.msu.edu/faculty/list_rowe.htm to find out more about Brad.

Insect Management- Dave Smitley, Professor, Department of Entomology, MSU.

Dave presented a list of key insect pests of urban trees and shrubs, along with recommended control strategies. Workshop participants tested their identification skills with a quiz in which they needed to correctly identify insects, damage and natural enemies from preserved specimens and samples provided by Dave Smitley.

Speaker profile

Dave works closely with the nursery, turfgrass and floriculture industries on identifying and solving insect pest problems. In 1991, Dave worked with Leah Bauer of the USDA Forest Service to introduce *Entomophaga maimaiga*, a fungal pathogen of gypsy moth, into Michigan. *E. maimaiga* is now widespread throughout the state and is helping to suppress gypsy moth. In the last five years, he has also researched winter mortality of gypsy moth, interactions of water stress and honeylocust spider mite, and the host preference of gypsy moth among ornamental trees and shrubs. Visit Dave's web site at:

<http://www.ent.msu.edu/faculty/Smitley/index.html>

Managing Fertility in Field Production- Bert Cregg, Assistant Professor and Extension Specialist, Department of Horticulture and Department of Forestry, MSU.

Bert's crash course in soils covered the basics of soil properties, field soil fertility and soil microorganisms. Dirt 101, as he referred to it, was a

review of soil physical and chemical properties, elements essential for plant growth and development, diagnosing nutrient disorders, and soil and foliar testing. He also covered organisms that live in the soil.

Speaker profile

Bert has been a research tree physiologist for International Paper and the USDA Forest Service. At MSU, Bert teaches Woody Plant Physiology and Introduction to Plant Science. Bert's research focuses on genetic and cultural effects on physiology, growth, and health of woody landscape plants. The USDA recognized Bert with three merit awards for outstanding tree physiology research during his tenure with the USDA Forest Service. He has been a technical coordinator for the National Proceedings of the Forest and Conservation Nursery Associations.

http://www.hrt.msu.edu/faculty/list_cregg.htm

Pest Scouting for Nurseries- Diane Brown-Rytlewski, Nursery and Landscape IPM integrator, MSU.

Diane discussed some of the considerations in planning and implementing a pest scouting program at a nursery production facility. She outlined some of the benefits of monitoring pest activity, along with record-keeping and tools to use for tracking insect emergence and plant injury.

Speaker profile

Diane has worked in various segments of the landscape industry including garden center and landscape management, branch manager for a national lawn and tree care company, and running the integrated pest management program at the Chicago Botanic Garden. The integrator acts as liaison between the nursery and landscape industry and MSU to communicate industry needs for research and education, help develop educational materials and programs, and disseminate information. For more information on Diane, go to:

<http://www.cips.msu.edu/landscape/>


Water Quality and Management- Tom Fernandez, Assistant Professor and Nursery Extension Specialist, Department of Horticulture, MSU.

Tom concluded the program with a presentation on water quality management. Alkalinity, soluble salts and other substances that adversely effect water quality were covered in detail. Solutions for managing poor water quality were also presented.

Speaker profile

Tom has been working with water quality and water management for the past five years. His research focuses on reducing the environmental impact of nursery production practices, specifically by remediating nursery runoff water and using integrated crop management. He teaches Nursery Management at MSU. He has given several presentations to industry groups in Michigan and other states on water quality and management and weed management and

writes a regular column for The Voice. More information about Tom is at: http://www.hrt.msu.edu/faculty/list_fernandez.htm

Future schools will be conducted to focus on issues pertinent to the Nursery and Landscape Industry. To be added to a mailing list for updates on upcoming Schools, contact Sandy Allen, Department of Horticulture, Michigan State University, East Lansing, MI 48823-1325; phone 517-355-8362; e-mail allens@msu.edu 

Nursery IPM educational programs

Program organizer

Thomas A. Dudek, District Extension Horticulture & Marketing Agent

Industry partners

Local nurseries

Funding

Local sources plus AoE funds

Significance

The nursery industry needs to have timely information on disease, insect nematode and weed pests that affect their crops. Also numerous regulatory restrictions impact their ability to ship plants. Providing information on a timely basis is critical.

Program goals

- Update growers on the latest information regarding issues of mutual interest; and

- Provide hands on identification opportunities for growers;
- Faster communication among growers regarding issues of mutual interests; and
- Reduce pesticide usage when possible, improve timing of pesticides when possible, and consider alternative control strategies.

Program descriptions

Biweekly IPM Roundtable

A series of biweekly discussions were held with nursery IPM staff from various nurseries in West Michigan. We met for lunch twice monthly from May-August. Current production issues were discussed along with “hot” topics from the weekly Landscape CAT alerts. Participants shared their observations from the week. Some sessions featured speakers from the University to discuss particular topics of interest. Plant problem samples were shared with the group as well. Response to these sessions has been positive. The biweekly meetings are an on going educational event. 