



Floriculture and Ornamentals Education and Extension at Purdue University

OVER THE NEXT SEVEN MONTHS, PURDUE RESEARCHERS AND EDUCATORS WILL SHARE THEIR FINDINGS AND PROGRAMS IN FLORICULTURE AND ORNAMENTAL HORTICULTURE.

By Roberto G. Lopez

The Department of Horticulture and Landscape Architecture (HLA) at Purdue University can trace its roots back to 1884, when Professor James Troop founded the Department of Horticulture and Entomology. Since then, the departments have separated, but have had a long history of floriculture and ornamental horticulture Extension and education.

Numerous individuals that have impacted

our industry graduated from both departments, including: Dr. Marvin Miller (Ball Horticulture Co.); Mike McCabe (current OFA President); Paul Hammer (Dümmen USA); John Swarens (Ball); Claire Sawyers (Director of Scott Arboretum); Anthony Aiello (Director of Horticulture and Morris Arboretum Curator); Dr. Doug Needham (Longwood Gardens); Ricky Kemery (Purdue Cooperative Extension service); Dr. Mary Welch-Keesey (Purdue University); Dr. Joyce Latimer

(Virginia Tech University); Dr. Brian Whipker (North Carolina State University); Dr. Jonathan Franz (USDA-ARS); Dr. Tracy Dougher (Montana State University); Dr. Doug Bailey (University of Georgia); Dr. William Graves (Iowa State University); Dr. Michelle Jones (The Ohio State University); Dr. Raymond Cloyd (Kansas State University); Dr. Gary Knox (University of Florida), Dr. Bob Tripepi (University of Idaho), and Dr. Luis Cañas (The Ohio State University).

This article, the first of a seven-part series focusing on floriculture and ornamental horticulture at Purdue, summarizes our teaching and Extension outreach programs. Subsequent articles will focus on environmental, cultural, sustainability, consumer preference, ornamental pest and pathogen research; services provided by the Purdue Plant and Pest Diagnostic Lab; and the Horticulture Gardens, Greenhouses, and Master Gardener programs.

The floriculture and ornamentals Extension, research, teaching faculty and professional staff at Purdue University include individuals from agricultural and biological engineering, botany and plant pathology, entomology and HLA. Current faculty, specialists, and professionals with floriculture and ornamentals responsibilities and interests in HLA include Roberto Lopez (Commercial Floriculture Extension Specialist), Tyler Mason (Floriculture Technician), Natalia Dudareva (Molecular Biology of Floral Scent), Jennifer Dennis (Specialty Crop Marketing Specialist), Michael Mickelbart (Plant Physiology), Michael Dana (Landscape Horticulture), Elizabeth Maynard (Commercial



Figure 1. Students measure height of their poinsettia crop for graphical tracking.



Figure 2. California Spring Trials educational tour for small- and medium-sized greenhouse operations and other horticultural professionals.



Fine PGRs:
the keys to
conformity.

abide[®]

Same active ingredient as ARest[®]



citadel[®]

Same active ingredient as Cycocel[®]



concise[®]

Same active ingredient as Sumagic[®]



configure[®]

The only 2% 6-BA PGR for ornamentals



dazide[®]

Same active ingredient as B-NINE[®]



florgib[®]

Same active ingredient as ProGibb[®]



fresco[®]

Same active ingredient as Fascination[®]



piccolo[®]

Same active ingredient as Bonzi[®]



piccolo[®]
10XC

The only 4% paclobutrazol formulation



fine

Excellence in PGR Technology

www.fine-americas.com

Always read and follow label directions. Abide[®], Citadel[®], Configure[®], Concise[®], Florgib[®], Fresco[®] and Piccolo[®] are registered trademarks of Fine Agrochemicals, Ltd. Dazide[®] is a registered trademark of Fine Holdings, Ltd. A-Rest[®], Cycocel[®], Sumagic[®], B-Nine[®], ProGibb[®], Fascination[®] and Bonzi[®] are registered trademarks of their respective manufacturers. © 2012 Fine Americas, Inc.

Write in 761

Floral and Vegetable Crops), Mary Lou Hayden (Garden Coordinator and Floral Design), Rosie Lerner (Consumer Horticulture Extension and Indiana State Master Gardener Coordinator), and Rob Eddy (Plant Growth Facilities Manager). In addition, extensive support is provided by the Purdue Plant and Pest Diagnostic Lab (P&PDL) members Tom Creswell and Gail Ruhl, Janna Beckerman (Ornamental and Fruit Disease Extension Specialist), Cliff Sadof (Landscape Entomology Extension Specialist), and Chad Martin (Renewable Energy Extension Specialist).

Coursework and Educational Opportunities

Enrollment in the floral design, ornamentals, and landscape horticulture area continues to be strong at Purdue University. There are currently over 200 HLA undergraduate students enrolled in the following concentrations: landscape horticulture and design, horticultural production and marketing, public horticulture and horticultural science. Students interested in ornamental plant production and marketing have a wide array of courses available to them at Purdue. In HLA students can take courses in plant propagation, bedding plant, poinsettia (total crop management), and ornamental plant production, herbaceous and woody landscape plant identification, flower arrangement and indoor plant management, professional floral design, landscape design and construction, and principles of marketing and management of horticulture businesses.

Students often learn the principles of greenhouse crop production by attending lectures, completing homework assignments and projects, and going on field trips. However, an exciting new course teaches students specific skills many horticultural employers want: how to put principles into practice to produce a greenhouse crop that meets strict quality specifications, while working effectively as a member of a production team. Christopher Currey (Ph.D. student) developed the Total Crop Management (TCM) course in collaboration with Roberto Lopez and

RECENT STUDENT AWARDS

Kasey Clemens, a senior majoring in horticulture science was a young plant cultural research summer intern at Ball Horticultural Company in West Chicago, Ill. She was recently awarded the Betty Polanka Floriculture scholarship for her academic achievements and commitment to the floral and landscape industries.

Michael Ortiz is a first-year floriculture M.S. student working on light-emitting diode (LED) lighting of plugs. He was awarded the Purdue doctoral fellowship, an award bestowed to outstanding Ph.D.-track students who will enhance the diversity of the graduate student body. He was also awarded the American Society for Horticultural Science Collegiate Scholars Award.

Christopher Currey is a third-year floriculture Ph.D. student working on greenhouse supplemental lighting during vegetative propagation. In 2010, he was selected to be an OFA Scholar at the OFA Short Course in Columbus, Ohio. Christopher also received the Purdue D.Thomas Woods and James K. Rathmell Scholarship from the American Floral Endowment to conduct research in Central American stock plant facilities, and recently was awarded a Purdue Early Career Researcher Grant to conduct native plant propagation research at the University of Queensland in Brisbane, Australia. While at Purdue, Christopher has also been awarded first place for presentations at the Plant Growth Regulation Society of America and the NCERA-101 Committee on Controlled Environment Technology and Use, as well as the Indiana Flower Growers Association Allen Hammer Scholarship and the African Violet Society Scholarship for his achievements.



Michael Mickelbart. TCM leads students through hands-on growing and decision-making based on the integration of information about the greenhouse environment (light and temperature), plant growth (height and growth regulator applications), media and irrigation water quality (pH and EC), and pest populations (Figure 1). The end result is students who understand how to collect and interpret data and use the information to produce a uniform, high-quality, finished crop of poinsettias. In order to provide students with a basis for recognizing, diagnosing, and managing insect and disease problems of the greenhouse, nursery, and urban forest landscapes, Janna Beckerman and Cliff Sadof have recently developed a new course that integrates the general principles of botany, horticulture, plant pathology and entomology. Students in Plant Health Management for Ornamental Plants develop the problem-solving skills used by plant health practitioners to diagnose and manage plant diseases and disorders.

The HLA program is unique in that it has courses in Floral Design and Interior Plant Management and Professional Floral Design, both taught by Mary Lou Hayden. These courses are extremely popular with a current enrollment of more than 90 and 20 students, respectively. Topics covered in the classes include: principles and elements of floral design, color, cut flower care, house plant care, plant propagation, body flowers and wedding design, and many others. Over the course of the semester students get hands-on practice with 14 different floral design forms.

Major Floriculture Extension Programs

Roberto Lopez, Jennifer Dennis, Liz Maynard, Janna Beckerman and Cliff Sadof all have primary Extension responsibilities within the area of ornamental plants. As the floriculture Extension Specialist, Roberto has developed a floriculture website (<http://flowers.hort.purdue.edu>) and Janna has developed a green industry resources website (<http://www.btny.purdue.edu/Extension/GIWG/>) to provide commercial growers with Purdue-generated trade and

scientific articles, bilingual floriculture bulletins, production guides, podcasts and links. Liz works with the Northwest Indiana Floriculture Association (NWIFA) to deliver regular educational programs,

usually hosted by NWIFA members in northwest Indiana and nearby Illinois. In addition, Roberto publishes a quarterly e-bulletin, "The Indiana Flower Grower," that is distributed to greenhouse growers,



Who said
conformity isn't a
beautiful thing?

Today, it takes consistent size, shape and quality to increase ornamental profits. That's why more and more top growers are turning to PGRs from Fine Americas. With proven active ingredients, advanced formulations and uncompromising quality control, Fine PGRs bring out the best in your plants. Plus, these cost-effective products are backed by ongoing university research and top-notch technical support. For the distributor nearest you, visit www.fine-americas.com or call (888) 474-FINE (3463) toll free.

fine
Excellence in PGR Technology





distributors, businesses, and academics across the United States, Canada and Central America.

Floriculture Extension Specialists from New York (Dr. Nora Catlin, Cornell), North Carolina (Dr. Brian Whipker, NC State), New Hampshire (Dr. Brian Krug, University of New Hampshire), and Indiana (Roberto Lopez) have created the new e-Gro Alert for greenhouse growers. e-Gro Alert will notify growers of insect, disease, nutritional, environmental and physiological problems as they develop during the bedding plant production season. It will help growers know what to be on the lookout for in their own crops. e-Gro Alerts will be emailed as needed during the season, probably about four per month. To view e-Gro Alert, visit www.e-gro.com.

In 2010 Roberto Lopez, along with Dr. Mark Bridgen, and Dr. Neil Mattson (Cornell), began offering an educational tour for small- and medium-sized greenhouse operations and other horticultural professionals who would not otherwise attend the California Spring Trials (Figure 2). Attendees get a first-hand look at new floriculture plant releases and interact with breeders and producers to learn how to use the material in containers and in the landscape. Response was so positive that the tour was offered again in 2011 and sold out within one week. In 2010 and 2011 attendees were from Canada, New Zealand, Taiwan and the United States. We are not able to offer the tour in 2012, but watch for it to return in 2013.

In an effort to bring industry experts and hands-on training on basic growing techniques and concepts, Roberto Lopez and Brian Krug have created an educational module series in Indiana and New Hampshire, respectively. This series is specifically aimed at the most critical employees that are often under educated. The programs are funded by the individual state department of agriculture specialty crop block grants (SCBG), Fafard and Everris. The goal of the educational series is to confront current industry issues and offer a series of

two-hour sessions over the course of the bedding plant production and marketing season. Each session is focused on one topic (e.g., fertility, properties of growing substrate and substrate selection, temperature and light management, water quality, pH

and alkalinity management, height control, disease and insect management, and marketing strategies).

In addition, the SCBG provides funds for Chad Martin and Roberto Lopez to visit growers individually to evaluate the efficiency of their

Great Balls of Fire

This season's hottest ivy geranium!

Intensity in Pink and Purple!

RED FOX

BAHIA BACARD SAND

Dümmen USA, Inc • Phone 614-850-9551 • sales@dummenusa.com • www.dummenusa.com



greenhouse structures and conduct an energy audit. Each grower will be given a customized report that will identify actions to increase the energy efficiency of each greenhouse structure and information on USDA Rural Energy for

American Program (REAP) grants, loans, and loan guarantees for renewable energy sources such as wind, solar, geothermal, or biomass or energy efficiency improvements.

To help growers make informed decisions and

tackle the issue of sustainable greenhouse production and certification, Roberto Lopez and Brian Krug formed a collaborative research and Extension effort with Stephanie Burnett (University of Maine) and Neil Mattson called the Floriculture Sustainability Research Coalition (FSRC). The group is currently conducting research on energy efficient crop production, plant nutrition, and efficient irrigation methods. As research is generated, articles are published in scientific and trade journals and talks are given around the country. In collaboration with OFA, the group is developing a website that will be a central location for articles and information related to sustainable greenhouse production. The goal is to educate greenhouse growers on how to successfully implement sustainable production practices and to identify consumer segments that are willing to pay premium prices for sustainable floriculture crops.

Future

Whether at Purdue or another land grant university, the importance of industry, association and grower support is more important than ever and no donation is too small. The Purdue floriculture and ornamental horticulture group appreciates the excellent industry, grower, association, allied trade company, university, state and national competitive granting agencies and endowments support of our research, Extension and teaching programs. Without your invaluable input, leadership, cost-sharing and donations we would not be successful in obtaining external competitive funds such as the USDA Specialty Crop Research Initiative necessary to fund the collaborative LED greenhouse lighting research at Purdue, Michigan State, University of Arizona and Rutgers. [G]

Roberto G. Lopez is assistant professor of horticulture at Purdue University. He can be reached at rglopez@purdue.edu.

Spring's perfect Introduction



RED FOX
Salsarita

All eyes on color and heat!

RED FOX
**Aloha
Kona**

This year's trend is color... the can't miss essential of the season!

RED FOX 2013 introductions

- Large flowers
- High heat tolerance
- Excellent performance ...



Write in 763