



Production Times

Fall 2013

Volume 20, Number 3

In This Issue...

Upcoming Extension Workshops & Industry Events

New Videos on Nursery Sustainability

Research Update

Disposal of Hazardous Chemicals for Commercial Businesses

Upcoming Extension Workshops & Industry Events

August 20 - Rugose Spiraling Whitefly Workshop / 9:00am-12:00pm / Mid-Florida Research & Education Center / FREE Program / CEUs Available!

Registration: [Click Here](#)

August 22 - Review & Exams Limited Pesticide Applicators Licenses / 8:00a-4:00p / Sumter County Extension / CEUs Available!

Registration: 386-698-4671

September 19 - Green Industries Best Management Practices (GI-BMP) Certification Program / 7:45a-4:00p / Orange County Extension Education Center / CEUs Available!

Registration: [Click Here](#)

September 19-20 - Knowledge College - Workshops for Landscape Professionals at the FNGLA Landscape Show. Two-day format offers programs geared towards garden center management, grower management, landscape design and landscape management. / Orange County Convention Center / CEUs Available - multiple categories, please see link below for details!

Class schedule & registration: [Click Here](#)

September 19-21 - The Landscape Show / Various hours / Orange County Convention Center

Registration: [Click Here](#)

October 2, 9 & 16 - IPM Nursery Scout Training - A 3-part series to train growers on early detection and identification of insects, diseases, and other plant problems / 9:00a-3:00p / Mid-Florida Research & Education Center / Lunch provided! / CEUs pending! / Limited to 25 attendees

Registration: [Click Here](#)

October 21-22 - Florida Agriculture Financial Management Conference - A 2-day concentrated training seminar to help growers and distributors address the overall financial health of their business - budgeting, insurance, marketing and investment strategies - and allow them to strengthen their financial foundation so they can then focus attention on other areas critical to their business success. /

Omni Orlando Resort at ChampionsGate
Information and Registration: [Click Here](#)

For more information and links to other programs go to any of the following links:

<http://lake.ifas.ufl.edu/calendar.shtml>
<http://orange.ifas.ufl.edu/cfnurseries/>
<http://www.seminolecountyfl.gov/extensionservices/commercial.aspx>
<http://calendar.ifas.ufl.edu/calendar/index.htm>

New Videos on Nursery Sustainability

Check out these new videos! They supplement previous You-Tube videos and other resources on the Web site, [Moving Nurseries Toward Sustainable Production Practices](#) .

New videos were just added to the Nursery Sustainability website! Check out these new videos on:

- [Sustainable Substrates for Nursery Production \(4:30; 4 min. 30 sec.\)](#)
- [Methods and Tools to Improve Nursery Production Efficiency \(7:20\)](#)
- [Sustainable Fertilizers for Nursery Production \(7:12\)](#)
- [Integrated Pest Management \(IPM\) in the Nursery \(7:39\)](#)

These new videos supplement previous You-Tube videos and other resources on the website, [Moving Nurseries Toward Sustainable Production Practices](#) . Other sustainability video topics include energy efficiency, production efficiency, containers, overhead irrigation, low volume irrigation, runoff management, reclaimed water for irrigation, recycling and re-purposing. The videos illustrate various aspects of nursery sustainability and were filmed at Florida and Georgia nurseries. The main website also lists websites and links to other nursery resources across the southeast. The website, videos and resources were developed with funding from Southern SARE (<http://www.southernsare.org/>).

Research Update

There has been a lot of research on new biodegradable containers. Despite a lot of consumer interest, not many growers have adopted them. Below are summaries of some interesting articles that may help you decide if you want to try them. The research indicates that irrigation, fertilization and potting mix may need to be adjusted for your crop. If you want more details or the full article, contact Juanita, jopenoe@ufl.edu.



Soy based plastic containers provide fertilizer as well.

Scientists tested soy-based plastic containers in greenhouse and field with tomato and pepper plants. They also tested crumbling the pot under the transplanted plant. Nitrogen was released from the soy-plastic during field and greenhouse production that could help the plants grow. During greenhouse production the nitrogen release rate was too high and actually damaged some plants. Containers made with part soy and part petroleum plastic released Nitrogen at a more favorable rate. With changes in design and formulation, the soy-plastic containers offer potential for a biodegradable container that will promote growth and health of plants in the greenhouse and at transplant.

Which biocontainers can withstand an ebb-and-flood system?

The physical properties of new containers: bioplastic, solid ricehull, slotted ricehull, paper, peat, dairy manure, wood fiber, rice straw, and coconut fiber were tested before and after growing a crop in an ebb and flow system for 15 weeks in a greenhouse. The bioplastic, solid ricehull, and slotted ricehull containers lasted as well as the control standard plastic containers. The peat, dairy manure, wood fiber and rice straw containers required

irrigation more frequently, fell apart by the end, and had algae and fungus growth on them.

Cyclamen (10 week crop) grow better in some biocontainers on an ebb-and-flood system.

Plastic, bioplastic, solid ricehull, slotted ricehull, paper, peat, dairy manure, wood fiber, rice straw, and coconut fiber containers were used to evaluate plant growth of 'Rainier Purple' cyclamen in ebb and flood benches. It took 70-79 days to flower and there were no differences between plastic and the biocontainers tested. The shoot dry weight of plants was lowest in the wood fiber pots, while all other biocontainers produced plants with higher shoot dry weight than those in plastic pots. Root dry weights were lowest in plastic containers. The only container that negatively affected plant growth was the wood fiber container, but all containers were successfully used to produce marketable cyclamen plants.

How do biocontainers measure up mechanically?

This research investigated the ability of biocontainers (plastic, wheat-based bioplastic, coir, pressed manure, paper, peat, straw, and wood fiber) planted with 'Florida Sun Jade' coleus to withstand the rigors of a semi-mechanized commercial production process and performance under three different irrigation methods (hand, ebb and flood, and drip irrigation). Results:

- Plant quality in biocontainers was equivalent across container type and irrigation system.
- Mechanical filling: Compared with plastic control pots, coir, pressed manure, paper and peat pots were more likely to be damaged by the filling machine; however, none of the containers experienced damage levels greater than 1.5%.
- Mechanical spacing was not conducted on straw and peat containers because properly sized lift bars were not available for these pots. In the lifting tests, damage was only seen in the pressed manure containers (2.2%) and occurred as a result of wedging and poor release of containers in slots in the spacer bars. Lifting success of containers made of coir was 28.8%, paper was 69.8%, and wood fiber was 91.9%. 99%-100% of the plastic, bioplastic and pressed manure containers were lifted successfully. The absence of a lip on the coir containers was a limiting factor. The lip on the paper containers was not strong enough to support a wet pot.
- Shipping tests: 27% of pressed manure pots and 35% of peat pots were damaged. These types of pots may be more suited to short rotation crops. The only containers that outperformed the plastic control in shipping were the paper and wood fiber pots.
- Drip irrigation and hand watering had similar impacts on container structural integrity within the time frame of this study. Pots fell apart faster in the ebb and flood conditions.

Petunias in Biocontainers use more water.

Some biocontainers are highly porous in nature (peat, wood fiber, straw) and tend to require more frequent irrigation than conventional plastic products. Containers tested in this experiment were: bioplastic, coir, manure, peat, sleeve, slotted rice hull, solid rice hull, straw, and wood fiber. Results:

- The more porous containers (wood fiber, manure, straw) required more water and produced smaller plants by the end of the trial.
- Shoot dry weight was highest with the bioplastic sleeve and slotted rice hull containers. However, the slotted rice hull container required more water to get the same size plant.
- The new bioplastic sleeve may be a promising alternative to conventional plastic containers. Growing system and potting mix optimization may overcome problems with biocontainers.



Disposal of Hazardous Chemicals for Commercial Businesses

Operation Clean Sweep was discontinued in 2010. Commercial businesses should now first check with the chemical manufacturer on their take back program. If their program doesn't meet your needs, contact your county for their current disposal procedures. Here is the information for Lake, Orange, and Seminole Counties.



Lake County

Contact Solid Waste: 352-343-3776. They have a contract with a company to pick up and dispose of hazardous waste from businesses. Currently the contract is Environmental Quality (EQ) out of Tampa. Call EQ at 800-624-5302 to set up an appointment for pick up. The cost will be determined at that time and an inventory is required. It is a minimum of \$150 transportation fee plus a disposal fee. EQ said that for an amount that fits in a 5 gal. bucket, it would be cost prohibitive. For such small amounts you should work with Solid Waste. Lake County also participates in a recycling program where unused chemicals and fertilizers are connected with someone who can use them so they are not wasted. For a list of counties and their various recycling programs, go to <http://www.dep.state.fl.us/>.

Orange County

Contact a Registered Hazardous Waste Hauler – approved haulers can be found at this website: http://appprod.dep.state.fl.us/www_rcra/reports/handler_sel.asp

Schedule an appointment for drop off at the Orange County Landfill:
http://orange.ifas.ufl.edu/cfnurseries/pdf/files/OC_HzWste_Brochure_09-082.pdf

Seminole County:

<http://www.seminolecountyfl.gov/envsrvs/solidwaste/busprograms.aspx>

Hazardous waste disposal has a fee associated for businesses. Seminole County coordinates quarterly hazardous waste collection events for businesses that are determined to be Conditionally Exempt Small Quantity Generators (CESQG). Your business is an CESQG if it:

- Generates less than 220 pounds (100kg) of hazardous waste (approximately half of a 55 gallon drum) per calendar month.
- Never accumulates more than 2,200 pounds (1,000kg) of hazardous waste at any one time.

These events are held at the Central Transfer Station. The CESQG hazardous waste collection events allow businesses to utilize contracted disposal prices, allowing them to take advantage of competitive contracted fees for the hazardous waste disposal. Participating businesses pay the contractor directly for the cost of disposal. Please call 407-665-2250 for more information.

Production Times is brought to you by:
Juanita Popenoe, Ph.D.
Commercial Horticulture, Lake County Extension
Liz Felter, M.S.
Production Horticulture, Orange County Extension
Matt Lollar, M.S.
Commercial Horticulture, Seminole County Extension

This material is provided as one of the many services relating to the educational programs offered to you by this agency. Our statewide network of specialists is prepared to provide current information on agriculture, marketing, family and consumer sciences, 4-H, marine science, and related fields. We will be happy to help you with additional information upon request.

Use of trade names in this newsletter does not reflect endorsement of the product by the University of Florida, Institute of Food and Agricultural Sciences, or the Florida Cooperative Extension Service.

The Institute of Food and Agricultural Science (IFAS) is an Equal Employment Opportunity Institution authorized to provide research, educational information and other services only to individuals and institutions that function without regard to race, color, sex, age, handicap or national origin. U.S. DEPARTMENT OF AGRICULTURE, FLORIDA COOPERATIVE EXTENSION SERVICE, UNIVERSITY OF FLORIDA, IFAS, FLORIDA A. & M. UNIVERSITY COOPERATIVE EXTENSION PROGRAM, AND BOARDS OF COUNTY COMMISSIONERS COOPERATING.

[follow on Twitter](#) | [friend on Facebook](#) | [forward to a friend](#)

Copyright © 2013 Central Florida Extension, All rights reserved.

MailChimp

[unsubscribe from this list](#) | [update subscription preferences](#)