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Which biocontainer is right for you? See page 2.



Syngonium liners with blackened diseased roots (left) from *Ceratomyces* or healthy white roots (right). Find out how you can avoid this problem at the Water Education Alliance for Horticulture <http://www.watereducationalliance.org/>



Deer repellents evaluated page 3.

Lelan Leaves, Liz Returns, Matt is New

Lelan Parker, the Orange County Commercial Ornamental Horticulture Production Agent, will be leaving us for a job with the USDA NRCS in Georgia and to join her fiancé. Liz Felter will return as the Orange County Agent along with responsibilities for the Exploration Gardens at the Orange County Extension office. Seminole County now has Matt Lollar as their Commercial Ornamental Horticulture Production Agent, also the multi county commercial vegetable and sod production agent, so the three counties (Lake, Seminole and Orange) now each have their own agents. Future Production Times will be a collaboration of the three agents. Welcome and welcome back.



Liz Felter, Orange County Agent



Matt Lollar, Seminole County Agent

Upcoming Educational Programs

For more information and links to most programs and agendas go to: <http://cfextension.ifas.ufl.edu> or the UF Extension Calendar at <http://calendar.ifas.ufl.edu/calendar/index.htm>

Expanding Your Plant Palette. Oct. 12, 2010. Leu Gardens, Orlando. Contact Maggie Jarrell (352) 343.4101. <http://cfextension.ifas.ufl.edu/documents/EYPP2010flyer.pdf>

Farm Safety Day. Oct. 29, 2010. Lake County Extension Office, Tavares. Contact Maggie Jarrell (352) 343.4101. <http://cfextension.ifas.ufl.edu/documents/2010FarmSafety.pdf>

Green Industries BMP Certification (fertilizer license). Nov. 18, 2010. Lake County Extension Office, Tavares. <http://cfextension.ifas.ufl.edu/documents/BMPforGI-11-8-10.pdf>

Integrated Pest Management Update. Jan. 25, 2011. MREC, Apopka. Contact Maggie Jarrell (352) 343.4101. No registration forms yet.

Nursery Production School. Feb. 3, 2011. Sumter County Extension Office, Bushnell. Contact Maggie Jarrell (352) 343.4101. No registration forms yet.

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Pesticide Applicator Training

Limited Certification Licenses Review and Exam. Oct. 28, 2010. Osceola County Extension Office, Kissimmee. Contact Jennifer Pelham (321) 697.3000.

CEU Day and WPS Training. Nov. 4, 2010. Orange County Extension Office, Orlando. Contact Celeste White (407) 254.9200. http://cfextension.ifas.ufl.edu/documents/Flyer_CEUDay_Nov2010_OCEExt.pdf

Private Applicator/Ornamental and Turf. Dec. 9, 2010. Orange County Extension Office, Orlando. Contact Celeste White (407) 254.9200.

CEUs

Need just a few CEUs? Go to <http://growingproduce.com/floridagrower/>. We are planning on our own CEU series at the cfextension website. Keep watching for more information.



Research Summaries

Silicon Increases Growth of Phalaenopsis Orchid Liners

Hybrid phalaenopsis orchid liners were drenched with 0.5%, 1.0% or 2.0% v/v potassium silicate or with water.

Knowledge Gained:

1. Liners drenched with 1.0% increased dry weights of roots, shoots and whole plant over the control by 27 to 118%.
2. Leaf number and size, root number and length were unaffected.
3. 2.0% reduced plant growth.

How Much Leachate to Collect for an EC Measurement?

Using the pour through method to collect leachate to measure electrical conductivity may be affected by the volume of potting mix in the pot and the volume of water poured through. Researchers tested #1, #3, #5 and #10 sized containers and used either 50 mL of water (the standard) or 2.5% of media volume to pour

through the pots and collect as leachate.

Knowledge Gained:

Both pH and EC measurements were more consistent when collecting 50 mL of leachate rather than 2.5% of container volume.

Biocontainer Properties

Researchers compared pots made of plastic, 80% cedar fiber and 20% peat (Fertil), composted dairy manure (Cowpot), peat, bioplastic, coconut fiber, rice hull, paper, and rice straw.

Knowledge Gained:

1. Fertil, peat and Cowpot containers had wet strengths low enough to make handling difficult
2. All biocontainers except rice hull and bioplastic allowed water to evaporate through their walls and had higher water usage than traditional plastic pots.
3. Differences in physical properties of biocontainers compared with plastic were specific for each type of biocontainer, growers wanting to use biocontainers will need to decide which physical properties are most important.

◆ **Production Times** is brought to you by:

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Dracaena Tissue Culture

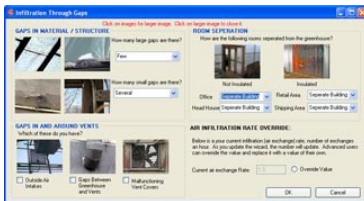
Dracaena are often propagated from imported cuttings that often have problems with pathogens and pests. UF researchers were able to reliably regenerate *Dracaena surculosa* 'Florida Beauty' through indirect shoot organogenesis.

Knowledge Gained:

This technique will allow reliable regeneration, without somaclonal variation, and could reduce importation of cuttings as well as provide raw materials for future anti-cancer pharmaceutical compound extraction.

Software to Calculate Heating Costs for Greenhouses

Temperature settings, heating systems, fuel types and construction decisions influence overall heating costs. Virtual Grower was created to help calculate heating costs using a weather database from the National Renewable Energy Laboratory and allowing the user to enter variables such as fuel type, greenhouse type and heater type. The software is FREE from the U.S. Department of Agriculture and will run on most computer systems: <<http://www.virtualgrower.net>>



Effectiveness of Deer Repellents

Six commercial and two experimental deer repellents were tested on Japanese Yews from February through April in New York. Deer-Away Big Game Repellent (BGR) mix, BGR spray, Deer-Off, Deer Stopper II, Repellex, Tree Guard and two experimental repellents were compared to untreated plants in the landscape. BGR spray, BGR mix, Deer-Off and Deer Stopper II provided the most consistent protection, while the others were unreliable. The effective repellents are based on putrescent egg solids and provide a suitable deterrent if reapplied every 4 or 5 weeks. Repellents cannot be applied with freezing temperatures or if plants are covered by snow or ice, making them much more useful in Florida than New York.

Enhancing Drought Stress Tolerance

Drought stress is a major cause of post-production loss. The plant hormone abscisic acid (ABA) regulates drought responses by reducing transpirational water loss. Six bedding plant species (impatiens, geranium, petunia, marigold, salvia and pansy) were treated with spray or drench applications of 0 or 500 mg/L of s-ABA (ConTego™, Valent BioSciences Corp.) and water was withheld to observe wilting symptoms.

Knowledge Gained:

Applications of s-ABA delayed wilting in all crops by 1.7 to 4.3 days, reducing water loss and extending shelf life for all species treated although some leaf yellowing was observed.

Noninvasive Invasives

UF researchers are evaluating noninvasive cultivars of invasive species.

Knowledge Gained:

1. Nandina cultivars responded differently in south, central and north Florida., some cultivars were virtually fruitless (and thus no problem with invasiveness). 'Firepower', 'Gulf Stream' and 'Harbour Dwarf' are safe to grow throughout Florida.
2. All species and varieties of Japanese silver-grass (*Miscanthus sinensis*) and butterflybush (*Buddleja lindleyana* and *B. officinalis*) are not invasive in Florida.
3. Some varieties of fountaingrass (*Pennisetum* spp.), Mexican petunia (*Ruellia tweediana*) and porterweed (*Stachytarpheta* spp.) are noninvasive. UF/IFAS will be releasing these results in the near future.

Canopy Closure and Water Use

Transpiration of woody shrubs appears to increase with decreases in plant density within production beds as plants are randomly removed for sale.

Knowledge Gained:

1. When sweet viburnum plants had canopy closure (leaves touching surrounding plants), water loss was 40% less than plants that were spaced. Less water is needed when plants are touching.
2. The upper 40% of a canopy loses 60% of daily water loss in isolated trees or shrubs.
3. Transplanted landscape plants no longer having a closed canopy, may have water needs increased 60% above that in production beds because of increased transpiration.



Disinfection of Horticultural Tools

Adapted from Geoffrey C. Denny and Gary E. Vallad

Hopefully you are disinfecting horticultural tools to prevent the spread of diseases. Have you ever wondered which of all the possible tool disinfectants to use? UF/IFAS researchers recently compiled a list of alternatives with their pros and cons. Whichever product you choose, diligence is important. Ideally tools should be disinfected after each plant, but realistically as frequently as possible. <http://edis.ifas.ufl.edu/ep380>

Material	Pros	Cons	Technique	Sources
Quaternary Ammonium Salts	<ul style="list-style-type: none"> • Very effective • Stable (solution lasts for longer period) • Not corrosive 	<ul style="list-style-type: none"> • Little residual activity • Not as effective if mixed with hard water or organic matter 	<ul style="list-style-type: none"> • Follow the label directions 	<ul style="list-style-type: none"> • Many commercial products are available from horticulture-supply vendors
Hydrogen Dioxides	<ul style="list-style-type: none"> • Less toxic • More biodegradable • Some products recognized as “organic” 	<ul style="list-style-type: none"> • Corrosive • Effective on only a limited number of pathogens • Life span of solution is short 	<ul style="list-style-type: none"> • Follow the label directions 	<ul style="list-style-type: none"> • Many commercial products are available from horticulture-supply vendors
Chlorine Bleach	<ul style="list-style-type: none"> • Inexpensive • Effective 	<ul style="list-style-type: none"> • Corrosive • Fumes can be harmful • Short life span of bleach solution (about ½ effect is gone after 2 hours), requires fresh batches immediately before disinfecting tools • Not as effective against viruses 	<ul style="list-style-type: none"> • 10% bleach solution (1 part bleach : 9 parts water) • 30-minute soak • Rinse with water after soak 	<ul style="list-style-type: none"> • Grocery and hardware stores and home-improvement centers
Alcohol (Ethanol or Isopropyl Alcohol)	<ul style="list-style-type: none"> • Immediately effective (no soaking) • Can be used as wipe • No need to rinse 	<ul style="list-style-type: none"> • Flammable 	<ul style="list-style-type: none"> • Wipe or dip tool in 70 - 100% alcohol 	<ul style="list-style-type: none"> • Grocery stores and pharmacies
Trisodium Phosphates (TSPs)	<ul style="list-style-type: none"> • Inexpensive 	<ul style="list-style-type: none"> • Very corrosive 	<ul style="list-style-type: none"> • 10% solution (1 part TSP : 9 parts water) 	<ul style="list-style-type: none"> • Many commercial products are available at hardware stores and home-improvement centers (used to clean surfaces for painting)
Pine Oil Products	<ul style="list-style-type: none"> • Not corrosive 	<ul style="list-style-type: none"> • Not as effective 	<ul style="list-style-type: none"> • 25% solution (1 part pine oil : 3 parts water) 	<ul style="list-style-type: none"> • Many commercial products available at grocery and hardware stores and at home-improvement centers
Household Disinfectants	<ul style="list-style-type: none"> • Easy to find • Usually not corrosive 	<ul style="list-style-type: none"> • Little research on effectiveness of products • Relatively expensive 	<ul style="list-style-type: none"> • Full-strength spray or dip, depending on the product 	<ul style="list-style-type: none"> • Many commercial products are available at grocery and hardware stores and at home-improvement centers