



Spring 2009
Volume 16, Number 1

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<http://cfextension.ifas.ufl.edu>



Maranta mite damage on Stromanthe



Chilli thrips damage on viburnum and arboricola.

Plant Clinic Problems - Maranta mite, Chilli thrips

The Maranta mite caused the decline of Maranta in the market and now is attacking Stromanthe. There is no really effective pesticide that can be used under greenhouse conditions. In the field you can use Thiodan. Avid and Pylon provide some control.

Chilli thrips continue to attack Indian Hawthorn, Viburnum, Arboricola, Blueberries and most everything else. Thrips controls and more can be found at <http://www.mrec.ifas.ufl.edu/iso/> For all the Plant Clinic diagnoses: http://cfextension.ifas.ufl.edu/agriculture/plant_clinic/index.shtml

New Format

Production Times is going to a new format. Twice a year, in the spring and winter, the newsletter will focus on nursery issues and be edited by Juanita Popenoe. Twice a year in summer and fall the focus will be on greenhouse foliage issues and Lelan Parker will be the editor.

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>

Turf & Ornamental Pest Management Workshop. January 10, 2009. Orange County Extension Office, Orlando. Contact Celeste White at (407) 254-9200.

AGRItunity 2009. Small Farms Program. January 24, 2009, Hernando County Fairground south of Brooksville. Contact Stacy Strickland or Donna Peacock (352) 754-4433.

Limited Certification Pesticide Applicator Training and Exams. Landscape Maintenance License. January 31, 2009. Orange County Extension, Orlando. Contact Celeste White at (407) 254-9200.

Fertilizers and Alternatives. February 3, 2009, 5-7 pm, Lake County Extension Office, Tavares. Free program, dinner included. Contact Maggie Jarrell at (352) 343-4101.

Palm Management in the Florida Landscape. February 5-6, 2009. UF/ IFAS, Fort Lauderdale Research and Education Center, Davie, FL. Contact Dr. Monica Elliott, at melliott@ufl.edu or 954/577-6315. Cost \$300.

Nursery Production School. February 17, 2009. 8:30 a.m. – 4:30 p.m. Sumter County Extension Office, (352) 793-2728

Agricultural Risk Management & Crop Insurance. February 17, 2009, 5-7 pm, Lake County Extension Office, Tavares. Dinner in-

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cluded. Contact Maggie Jarrell at (352) 343-4101.

Private Applicator & Ornamental /Turf Pesticide License training & exam. February 19, 2009. Seminole County Extension Office, Sanford. Contact Richard Tyson at (407) 665-5554.

Dead Palms Tell No Tales Video Conference February 24, 2009. Lake County Extension Office, Tavares. Contact Maggie Jarrell at (352) 343-4101.

Integrated Pest Management Update March 4, 2009, MREC, Apopka. Contact Maggie Jarrell at (352) 343-4101.



Websites to Checkout



Canna yellow mottle virus in 'Bengal Tiger.' Symptoms are similar to nutrient deficiency.

The University of Tennessee has a new **Ornamental Pest and Disease Update** newsletter at <http://soilplantandpest.utk.edu/pdf/files/OPandDUpdates/dec2008.pdf>. The latest edition has an interesting article on canna virus, a new stink bug pest and the emerald ash borer.

If you would like to learn more about *Phytophthora*, Oregon State Extended Campus in cooperation with the Oregon Department of Agriculture has developed an online course for nursery growers. The course is divided into three modules: Module 1—Biology, symptoms, and diagnosis; Module 2—Disease management; Module 3— *Phytophthora ramorum* (Sudden Oak Death). For more information go to: www.ecampus.oregonstate.edu/phytophthora

Interested in reaching out to the younger generation through the web? Check out <http://www.hubspot.com/archive/facebook-for-business> to learn how to use Facebook to promote your business.

Weather - The Neutral Pacific means more variable weather patterns and greater likelihood of severe freezes. If you want to find out more about the agricultural weather forecast, go to http://agroclimate.org/forecasts/current_climate_outlook.php.

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

Juanita Popenoe

Juanita Popenoe, Ph.D.

Multi-County agent, Woody Ornamental Production
Agricultural Center
1951 Woodlea Rd.
Tavares, FL 32778
(352) 343-4101

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HortScience Research Summaries

By Juanita Popenoe

New light emitting diode (LED) lights (similar to those new Christmas tree lights that are so bright and do not get hot) offer a way to supplement or provide light to plants within a very narrow range of wavelengths. LEDs have several advantages over traditional light sources: small size, durability, long operating lifetime, wavelength specificity, and relatively cool emitting surfaces. The wavelengths are so specific that you must determine which you need to produce the best crop. As with other light sources, LEDs can affect crop anatomy and morphology as well as nutrient uptake and pathogen development. LEDs may be used in future to control plant growth instead of the plant growth regulators used today. Blue light grown plants were more compact whereas red-light grown plants were tall, and mixes of the lights allowed the best growth. A regime could be designed for each stage of development to get the type of growth desired for best production.



Along similar growth control lines, research on photoselective polyethylene greenhouse covering film that limits light transmission to the wavelengths between 500 nm and 800 nm indicates that gardenia plants rooted under this film were 69% shorter than plants grown under normal polyethylene. Young potted plant growth was not as good under this film, but if plants were rooted under the special film and then transferred to the common film, the result was compact, well-shaped plants.

High light levels during rooting and after transplanting increased the quality of New Guinea impatiens and petunias. They were shorter with a greater root mass and flowered earlier. Increased light for woody cuttings is best done after roots have initiated (to

avoid reduced rooting from loss of water stimulated by high light levels). Some woody species like Japanese maple and hibiscus do not respond to increased light during propagation, so test before using in production.



In a study to determine the effect of herbicide drift on white oak seedlings at swollen bud, leaf unfolding and expanded leaf growth stages, they found 2,4-D and dicamba at leaf unfolding stage caused leaf cupping, downward rolling of leaf margins, elongation of leaf tips, leaf strapping with parallel veination and initial leaf cupping followed by death of the growing point. Glyphosate applied at either the leaf unfolding or expanded leaf stage caused leaf yellowing and browning and curling of leaves. Acetochlor and metolachlor both caused leaf tatters - malformed leaves lacking tissue between veins - when applied at the leaf unfolding stage. They recommend that herbicide applications near trees occur when the trees are dormant and leafless or after the expanded leaf stage. (This is much more difficult to time in Florida!)



Azalea lace bugs (ALB) feed by inserting their mouthparts into the azalea plant's stomata. However a study measuring stomata size in different cultivars and comparing to ALB preference and damage found no correlation. 'Fourth of July' was the least preferred by ALB, and 'Watchet' the most preferred in a study of 33 cultivars. 'Fourth of July' has one of the smallest average stomata size, but so does 'Delaware Valley White', one of the more susceptible cultivars. Therefore the mechanism for lace bug resistance is not the stomata size and remains to be found.

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Soil amendments for landscape trees and shrubs are not recommended because they can limit root extension into the surrounding soil, but some recent research from Washington State indicates that amendments, or at least mulch, may be useful in some sites. They studied the effect of no treatment, 3 inches of compost applied to the surface, 3 inches of compost incorporated by rototilling to a depth of 8 inches, 3 inches of bark mulch, surface applied compost + bark mulch and incorporated compost + bark mulch over five years. Their results show that Redosier dogwood growth was best during the first 4 years with incorporated compost + bark mulch. Incorporated compost had a greater effect than surface applied compost, but both were beneficial in reducing soil density and compaction and increasing water infiltration. Using bark mulch with the compost made soil properties even better. Both surface applied compost and bark mulch increased water infiltration, meaning that surface application of compost could provide benefits where incorporation is not feasible. About half the depth of surface-applied compost and bark mulch remained 5 years after application. By year 5, treat-

ments no longer influenced plant growth.

Pine tree substrate (PTS, loblolly pine trees that are chipped and hammer-milled to a desired particle size) was shown to be an effective poinsettia potting media. This study compared the effect on poinsettia growth of PTS milled to three different sizes (2.38 mm, 4.76 mm and 4.76 mm screen) to peat-lite media. Poinsettias were equal in quality to peat-lite plants when grown in PTS with small particles (2.38 mm screen) or PTS with larger particles if peatmoss was added at 25% and they were fertilized with 300 mg/L nitrogen. Dr. Beeson at MREC in Apopka is doing similar research with woody shrubs and expects results by summer 2009.



For more details on these research summaries see the American Society for Horticultural Science publication HortScience, December 2008 or ask your extension agent.



Bark Cracking Problems?

By Juanita Popenoe

Many growers use Glyphosate (Roundup) herbicide around their woody plants. The demand for faster-working glyphosate products and the fact that Roundup is now off patent has led to the generic development of many different formulations with different characteristics. Growers got used to using the original "classic" Roundup, but now have to deal with a much more potent chemical. New research by Dr. Hannah Mathers at Ohio State University on new formulations should send a warning to all about the use of this herbicide.

Bark cracking costs the U.S. nursery industry an estimated \$6.6 mil-

lion annually, and even more in landscape failures. In the past this was thought to be caused by cold injury, but Dr. Mathers' research points to glyphosate with new surfactants that get it into thin or pigmented bark where it can remain for years. It reduces cold hardiness and causes other growth defects.

Surfactants break down the cuticle of plants and increase the uptake of chemicals they are formulated with. Glyphosate does not last long in soil, but once in the plant is translocated to the roots where it is stored and may last for years, accumulating each year. It may take up to two years before effects of sub-lethal doses of glyphosate

can be seen. Effects can be witches broom, stunting, bark cracking or splitting, loss of apical dominance, individual dead limbs, yellowing and death. It is very difficult to diagnose this problem because of the varied symptoms and the length of time it can take before they are seen.

Glyphosate should be used only when absolutely necessary around a nursery. Pre-emergent herbicides should be used to keep weeds out of the nursery. If you find that you have a weed emergency and need to use glyphosate, use a product that has no additives and be very careful not to get the product near thin and/or colored bark.