



Production Times

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Turn Up The Heat!

By Lelan Parker

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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.

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See the newsletter in color at:
<http://cfextension.ifas.ufl.edu>

Once a disease or pest problem is identified, management may be difficult, expensive or even impossible. Prevention is the key to keep these dilemmas at a minimum. Management practices such as sanitation, proper cultivation, fertilization and irrigation can help you avoid pest problems before they even begin. Pathogens can be destroyed from soil or soil less media by heat from steam, composting, solarization, or by chemical fumigation.

For over 100 years steam has been used to disinfest soil. Heat from steam is very practical for soil sterilization. Aerated steam can be used to pasteurize soil and potting mixtures to eliminate not only soil borne pathogens but also weed seeds and insects. Pathogens such as *Phytophthora ramorum* (sudden oak death) and *Pythium irregulare* (Pythium root rot) as well as many other disease causing fungi and bacteria may be prevented by soil sterilization.

For proper soil sterilization, an application of aerated steam should be applied to maintain a uniform soil temperature. The soil must be free of clods, extreme moisture, and large pieces of plant matter to ensure the penetration of steam. The air-steam pasteurization temperature should be held at a range of 140-158° F (60-70°C) for 30 minutes. Thirty minutes is a sufficient amount of time to eliminate disease causing organisms from the soil. Longer times and higher temperatures will kill beneficial organisms in the soil. After the soil is sterilized it should be covered and stored in an area where it will not come into contact with untreated soil.

Recent studies have shown that aerated steam treatments were efficient in eliminating pathogens *Cylindrocladium scoparium*, *Phytophthora ramorum*, *Pythium irregulare* and *Thielaviopsis basicola* within potting mix without melting plastic plug flats.

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New Pests of Ficus-Whitefly and Thrips. The fig whitefly (*Singhiela simplex*) and ficus thrip (*Gynaikothrips uzeli*) have been found attacking ficus trees and hedges in Miami, FL. They mainly cause damage to the weeping fig tree (*Ficus benjamina*) but also attack other species and host plants. For more information go to: <http://trec.ifas.ufl.edu/mannion/pdfs/PestsOfFicus-WhiteflyAndThripsNov07.pdf>

Workshop: Surviving Difficult Times in the Green Industry

Are business profits shrinking and you are not sure why? Do revenues fluctuate widely from year-to-year? Has marketing become more of a challenge? Has your business been impacted by drought or freeze? Is reliable labor hard to come by? Are labor costs a major burden? Have delinquencies on accounts receivable grown painfully high? Are credit terms increasingly unfavorable or difficult to acquire? Are operating costs spiraling out of control? If you have answered yes to some of these questions, if you feel the business climate continues to deteriorate, and if you are worried about the future of your business,

we have a workshop for you. Come and learn useful strategies to increase your firm's bottom line on August 19, 2008 at the MREC. We will have speakers on the following topics: Identifying the Beasts – Risks that gnaw at your profits – and strategies to overcome them, Measure What You Manage – the financial management toolbox you can't do without, Marketing is not Just Selling - The marketing strategies you need to survive a maturing industry, and Crop Insurance – the most misunderstood and overlooked secret weapon. See the enclosed flyer for more details.

Plant Clinic Problem of the Quarter -

Ceratocystis was a common problem for the months of January and February. Ceratocystis is a fungal pathogen that produces volatile substances and gives off a fermented odor. Methods of transport for long distance movement is through water, soil, gravel etc. Host plants affected in Florida are *Syngonium*, *Alocasia* and *Colocasia*. Symptoms of Ceratocystis can be a black water soaked area sometimes girdling the stem, leaf chlorosis and death, and root rotting along with stunted growth. It may be controlled with fungicides containing thiophanate methyl (Cleary's 3336 ®) or trifloxystrobin (Compass™). Check out the other plant clinic samples and diagnoses at http://cfextension.ifas.ufl.edu/agriculture/plant_clinic/index.shtml.



Pythophthora Root and Crown Rots

By Juanita Popenoe

Phytophthora is a soil fungus that can cause damping-off, seedling blights, aerial leaf spots and stem, crown and root rots. It thrives under wet conditions. There are several different species of Phytophthora and some favor warm wet conditions—*P. cinnamomi*, while others cool moist conditions—*P. cactorum*. Some species infect only certain species of plants, like *P. ramorum* (of Sudden Oak Death fame), while

others are very general like *P. cinnamomi*.

Phytophthora can directly infect stems, roots and the crown area, especially in woody plants. Under wet conditions of overhead irrigated jammed plants, it will also infect the branches and leaves. Woody plants may show a vertical discoloring stain or canker on infected trunks. Scrape the bark off the affected area and you can find the

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discolored wood and a distinct margin with unaffected healthy wood. Herbaceous plants are more difficult to diagnose because decayed roots are symptoms of many diseases and Phytophthora does not produce any fruiting bodies visible to the naked eye. There are relatively simple test kits commercially available to confirm the diagnosis, or you can take the sample to a laboratory or the plant clinic. It is best to avoid this disease by using pathogen-free growing media, plants, water and equipment. Do not over-water and provide good drainage.



Phytophthora bud rot on Washingtonia palm



Phytophthora root and crown rot in cineraria.

If you are using recirculated or surface water, you may have problems with Phytophthora being spread by the water. Just a few infected plants will provide enough pathogen propagules to amplify small problems to green-

house- or nursery- wide problems. Under high risk situations it is best to periodically test water samples for the fungus. Treatments such as bromination, chlorination, filtration, ozonation or UV light may be required to clean the water.

For the latest chemical control measures, check the Professional Disease Management Guide for Ornamental Plants at <http://edis.ifas.ufl.edu/PP123>.



Phytophthora crown rot in Gerbera



Phytophthora root rot—notice brown roots



Phytophthora leaf spots on Indian Hawthorn

For more detailed information on this study refer to Linderman, R.G. and E.A. Davis, 2008: Eradication of *Phytophthora ramorum* and Other Pathogens from Potting Medium or Soil by Treatment with Aerated Steam or Fumigation with Metam Sodium, HortTechnology 18(1): 106-110



Keeping Your Cool

By Lelan Parker

Preventive and corrective maintenance are essential to the effective operation of an evaporating cooling system. Without proper care, a greenhouse evaporating cooling system's efficiency may be greatly reduced. Some factors that contribute to inefficiency are greenhouse doors remaining open, inadequate water supply to cooling pads, improper operation of fans, and compacting of cooling pads.

Cooler indoor temperatures can improve the environment for plants as well as significantly improving working conditions for employees. Major factors to consider for a maintenance program for your evaporat-

ing cooling system are to 1) check air flow and fan ratings; 2) check the rate of water supply to cooling pads using water meters, rotameters, or bucket and stopwatch; 3) use fungicide in the water supply to reduce the growth and build up of algae in the cooling pads; 4) if using aspen pads replace with new pads when the void area in the pads is 10% or greater of the original total pad area; and 5) if replacing cooling pads consider using newer pads such as concrete coated cooling pads or corrugated cellulose pads.

More detailed information can be found at: <http://edis.ifas.ufl.edu/pdf/ae/AE02400.pdf>

2008 Planning Calendar

Links to most programs and agendas may be found at: <http://cfextension.ifas.ufl.edu> or the UF Extension Calendar at <http://calendar.ifas.ufl.edu/calendar/index.htm>

April

3—Green Industries BMP Training. Collier County Extension. (239) 353-4244.

May

7,8—Palm Management in the Florida Landscape. Ft. Lauderdale Research and Education Center. (954) 577-6315.

15—Florida Native Plant Society Annual Conference. Palmetto, FL. Manatee Convention Center. (407) 895-8446.

23—Integrated Pest Management Update Workshop. Statewide. Mid-Florida Research and Education Center, Contact Yamira Donato for registration. (407) 254-9200.

June

1-4—The Annual 121st Florida State Horticulture Society Meeting. Marriot N. Ft. Lauderdale. (352) 392-1928