Production Times

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Runoff Clean Up

By Juanita Popenoe

Buffer zones, vegetative boundaries, grassed waterways and wetland retention areas are suggested ways to control and clean up runoff in the Nursery BMP guide. These areas slow the runoff water and allow nutrients and sediment to be cleaned from the water before it reaches ground or surface waters. Perennial vegetation using plants that will not make too many seeds and cause a weed problem is suggested, but what plants should you use and is a wetland right for you? Wight Nurseries in Cairo, Georgia have experience and research results on how to deal with this problem.

They have a 9.31 acre wetland remediation system for their 120 acre nursery with a two stage design. The first stage has an average depth of 30 inches and the second a depth of 8 inches. The nursery grows large container trees and shrubs that are micro-irrigated 3-5 times daily for 3-5 minutes and fertilized with incorporated controlled-release fertilizer and liquid fertilizer injection.

Production beds are drained into a water retention pond and from there the water is pumped into the first stage wetlands. The first stage wetlands gravity feed the second stage wetlands. From the second stage wetlands the water flows into stilling ponds (for suspended sediment finishing) before going into a nearby stream. The wetlands are covered with plants with very little open water. The first stage wetland plants are giant bulrush, maidencane grass, pickerelweed, common cattail, floating pennywort, duckweed, water meal and alligator weed. The second-stage wetland plants are common cattail, pickerelweed, water pennywort, maidencane grass, floating pennywort, common duckweed and broadleaf arrowhead.

Researchers sampled water throughout the wetland and at the receiving stream over three years.

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♦ **Production Times** is brought to you by

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Red Palm Mite: *Raoiella indica* were detected in November 2006 in several areas in eastern Puerto Rico. This is a pest of international quarantine significance and a potential threat to ornamental and coconut palms as well as ginger, bananas and plantains in Florida. For more details about this pest go to http://edis.ifas.ufl.edu/IN681, and be careful to inspect any material coming from Puerto Rico.

Recycling Soil and Pots

Many growers ask if they can recycle/reuse their pots and soil. The answer is difficult because it depends on many factors. Reusing pots in a greenhouse is a no-no unless you sterilize them in some way with steam, bleach or other chemicals. Reusing pots in field nurseries is a little more complicated. Pots in the field are on the ground anyway, and may be in contact with many good and bad microorganisms there. Many growers will reuse field pots without cleaning as long as they know there was not a diseased plant in the pot. However, there is always the chance that a soil-borne disease organism is clinging on to a pot and just waiting for the right conditions to infect the plant. If you decide to clean pots for reuse, you can steam them or chemically clean them. If you use chlorine bleach to clean the pots, just remember that the chlorine, like other chemicals, can become non-effective with time and use. You can use a regular pool chlorine test kit to check if active chlorine levels are still effective. As for recycling pots, unfortunately our local plastic recyclers cannot take pots. Unlike poly covers from greenhouses, pots usually are too dirty to recycle the plastic, so they do not accept them.

Reusing soil is likewise a tricky question. The potting mixes we use decompose with time. As the mix decomposes, particles become smaller and the air spaces smaller until the mix is really not good for plants, but by that time the plants are sold or potted on hopefully. There can also be a build up of disease organisms or chemicals that make the soil unsuitable for new young plants. However, that old soil can be reused if it is composted or pasteurized to remove weed seeds and pathogens and then remixed with other components to increase air spaces and nutrients. Jon's Nursery is famous for their reused, composted soil that is left over from propagation. They have large piles of the used potting mix that they carefully monitor for temperature to make sure it reaches the 180 F that is needed to kill off pests and pathogens. They carefully turn the soil and mix it to ensure the high temperatures are evenly distributed throughout the whole pile (no easy task with piles that large), and then they mix it with new aged bark and other ingredients for reuse. This process can be done on a smaller scale, but attention to the details required for good composting is vital if you are going to have a safe product. For more information on composting, visit: http://solutionsforyourlife.ufl.edu/hot_topics/lawn_and_garden/compost.html

Biological Control Demonstration Update

The demonstration of biological control of whiteflies and other insects on Basil, Mint and Poinsettia at the MREC is going so well that Dr. Osborne has been amazed. He purchased Swirskii, a predatory mite from Koppert (www.koppert.nl), that is supposed to work well on chilli thrips, broadmites, and whitefly. This mite comes in little "tea bags" of grain, with grain mites for food during shipping, that you hang on plants in the greenhouse. They have worked extremely well, even with the explosive mice population coming in and eating the grain.

The one-two punch is supplied by the parasite Encarsia sophia that can be purchased from Debora Taylor at the Seminole County Jail (407-655-1329) or obtained from Dr. Osborne. This parasite is specific to whiteflies and takes care of any eggs missed by the predatory mite. Dr. Osborne feels that with these kinds of beneficials working for you, you could raise stock plants pest- and pesticide-free with little trouble. A finishing treatment with Safari before plants leave your greenhouse would ensure a pest-free product and no chance of resistance build-up. If you would like to see the results, please stop by the plant clinic on a Thursday and see for yourself.

Metalized Mulches to Control Whiteflies?

Adapted from Robert Hochmuth

Growers should do EVERYTHING they can to exclude whiteflies from getting into greenhouses, including insect screening on vents or openings, taking time to seal any unwanted openings, and keeping weeds and vegetation controlled outside the greenhouses. Concerns that high populations of silverleaf whitefly this past fall in the field on vegetable crops like tomato, peppers, and squashes would move into the greenhouses and become very difficult to control led to a trial of a new exclusion technique at the North Florida REC. They used reflective metalized plastic mulch outside the greenhouse (on the ground and around the perimeter) as a means of reducing populations from entering inside the greenhouse (see photo). The metalized mulches are commonly used in the field as a row mulch to "confuse" or "disorient" the insects because of the reflection of the sun on the mulch. The mulch is effective at reducing whitefly and thrips populations in the field so why not try it around the greenhouse? Two trials were conducted, one at NFREC and another at a commercial greenhouse.

Initial data collected at Cheney Farms show very promising results of the metalized mulch as a means of helping exclude silverleaf whitefly adults from greenhouses in Suwannee Valley. The metalized mulch was applied on Aug 20. Six yellow sticky cards were monitored in each greenhouse and counted on the dates listed. New cards, or cleaned cards, were placed in the greenhouses after each count. The first two dates represent situations where the “metalized mulch greenhouse” had a crop in it but the “no mulch greenhouse” did not have a crop yet. By the Aug 29th date, both greenhouses had crops planted and had also been effectively sprayed with endosulfan (Thiodan) on Aug 26th. The decrease in overall populations from Sept 5 to Sept 8 was due to the rainy days from Sept 5-7.

Original article in NFREC News Vol. 8 Issue 22, Oct. 2006.
http://nfrec.ifas.ufl.edu/Newsletters/Archive2006/Newsletter_12_18_06.pdf

Table 1. Total number of silverleaf whitefly adults on 6 yellow sticky cards.

Date	With Metalized Mulch	No Mulch
Aug 22	11	40
Aug 25	16	122
Aug 29	15	43
Sept 1	20	235
Sept 5	18	436
Sept 8	5	96
Sept 12	4	47
Sept 15	2	54
Sept 19	17	146

Vera Leaves Us

Vera Gasparini resigned from the University of Florida Extension on December 15, 2006. She has not left the industry though, you will still see her around as the new lawn and landscape maintenance territory manager for Central Florida for Harrell's Fertilizer Inc. Lakeland, FL. Orange County is preparing to advertise to replace her, but she will be greatly missed and never truly replaced.

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Nitrogen detected in the nursery runoff varied with season and nursery production practices, but was easily managed with the constructed wetlands. Phosphorus was the difficult pollutant to remove and not successfully cleaned by these plants. Other plants are being tested for ability to better remove phosphorus. Cannas have been shown to be very good phosphorus removers, but more research is needed.

Nurseries have several options for limiting nutrients in runoff waters. With proper management of soluble fertilizers, water-borne disease organisms (the BMP guide suggests chlorine, bromine or ozone), and nitrogen and phosphorus levels, recapture and holding ponds can be used to retain the runoff water for reuse. The least expensive alternative is to reduce the use of N and P to the minimum levels required to achieve profitable plant growth rates and plant quality. Constructed wetlands are moderately expensive to build and plant at first, and require land. However, they can be sited on low, unsuitable land and require little maintenance after establishment. If you would like more information about constructed wetlands, visit your local extension agent or soil conservation district office.

2007 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

January

Jan 18-20……. Tropical Plant Industry Exhibition, Fort Lauderdale. Contact: FNGLA (407)295-7994,

www.tpie.org

February

7 ……. Expanding Your Plant Palette. Harry P. Leu Gardens, Orlando. Contact Maggie Jarrell (352) 343-4101

21 ..... Review and Exam Private Applicator and O&T Licenses. Contact Richard Tyson (407) 665-5551

20……. Central Florida Nursery Production School. Bushnell. Contact: Gary England (352) 793-2728

23……. Tree and Landscape Short Course. FL State Fairgrounds. Contact: 813-744-5519x 104

March

10 ..... Review & Exam Limited Certification Licenses. Kissimmee. Contact: Jennifer Welshans (321) 697-3000

April

24 ..... Review and Exam Right of Way & Aquatic Licenses. Tavares. Contact Maggie Jarrell (352) 343-4101