



Berry/Vegetable Times

October 2007



From your Agent... Proper Hand Washing and Your Food Safety Program

2007 Calendar of Events

Nov. 13 and Dec. 14 Pesticide License Testing. Hillsborough County Extension Office, Seffner. 9 am. For more information call Mary Beth Henry, 813-744-5519, ext 103.

Dec. 6 and 7 Florida Ag Expo, GCREC-Balm. See program inside.

Dec. 14 Four-Hour CORE Pesticide Training. Hillsborough County Extension Office, Seffner. 10-3:15. Cost \$20. Contact Mary Beth Henry, 813-744-5519 x 103.

As a new growing season starts, farms and packinghouses are having their third party audits for food safety. There are many components to a good food safety program and one of the most important parts, if not the most important, is worker hand washing. It has been stated that hand washing is the most important thing to get your workers to do to keep our produce safe but another important factor is that they need to be doing it correctly. Proper hand washing is an area that farms and packinghouses need to be sure that every worker has been educated on; then strict about enforcing the company's hand washing policy and monitoring employees closely to be sure it is being done. Remember wearing gloves is **not** a substitute for proper hand washing. Post hand washing posters around all bathroom facilities. To help with this, an EDIS publication on hand washing is included in this newsletter for posting at your facility. It gives the correct method of hand washing. It is one standard size

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December 6 and 7
Gulf Coast Research and Education Center Balm
<http://flagexpo.ifas.ufl.edu>
For details and registration

Management of Cyclamen Mites in Strawberries without Kelthane

James F. Price and Curtis Nagle

Almost every year from Thanksgiving into early January a few Hillsborough County strawberry farmers, and sometimes many farmers, discover cyclamen mites in their crops. The problem needs to be recognized early and treated immediately to avoid detrimental effects on yield. This mite can be a very serious pest in the Plant City region. Infested plants are stunted and produce a late and reduced crop. The cyclamen mite is found frequently on ornamental crops in Florida, particularly those crops produced in greenhouses.

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page so it is easy to post at all hand washing facilities. Additional copies can be made or you can go to the website and print more color copies- <http://edis.ifas.ufl.edu/pdf/files/FY/FY65600.pdf>. Another training tool that has been developed by IFAS specialists is the Worker Health and Hygiene Training Manual. It contains videos in English and Spanish on proper hand washing that can be shown to your workers and a video for managers on worker hygiene. The video for workers could be an addition to the WPS training for workers that is required. Documentation of the training can then be included in your food safety records that are kept for third party certification. I have a few of these training manuals and the Florida Strawberry Growers Association also has some for members. Florida wants to be known as the state with the safest fresh produce but it takes all of agriculture working together to achieve this goal.

Alicia Whidden

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EQIP Application Deadline is November 13th



The U.S. Department of Agriculture's Natural Resources Conservation Service has a conservation that can help farmers and ranchers pay for conservation practices that prevent erosion, improve water quality, and provide habitat for wildlife.

The Environmental Quality Incentives Program (EQIP) is a key program under the 2002 Farm Bill that provides federal cost-share funds to working farms and ranches for conservation improvements. The 2008 EQIP

application period will remain open until **November 13, 2007**.

EQIP provides incentive payments and cost-share funds to private agricultural and livestock producers to implement conservation practices. It promotes agricultural production and environmental quality as compatible goals. Like all NRCS programs, participation is voluntary.

It is extremely important for producers to note that the application deadline for the 2008 Program Year is November 13th. The early deadline is a continuing effort to improve the funding process. The accelerated program cut-off date will allow producers time to complete practices during the first years of their contracts. The earlier application deadline date will also help accommodate field work in preparation for fall projects.

The accelerated process makes early contact with the NRCS staff more important than ever. NRCS would encourage our farmers and ranchers to come in and visit with the local field staff now. We know that producers that get in early have more time to resolve certain program or land eligibility issues.

As with all NRCS programs, EQIP is a voluntary program that is intended to yield high quality, productive soils; clean and abundant water; healthy plant and animal communities; clean air; an adequate energy supply; and working farms and rangelands. **For more information on the 2008 EQIP program contact Juan A. Vega, NRCS District Conservationist by calling (813) 759-6450 x-3; e-mail Juan.Vega@FL.USDA.GOV or visiting the USDA-NRCS office at 201 South Collins Street, Suite 202, Plant City, FL 33563.**



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However, widespread infestations in Florida strawberry fields occur only occasionally. In the northeastern United States, California and the Pacific Northwest cyclamen mites in strawberry crops are common.



Photo 1: Cyclamen mites.



Photo 2: Strawberry plant affected by cyclamen mites

Kelthane[®] (dicofol) has been the most widely used miticide in strawberries to manage infestations of cyclamen mites for many years. Recently the reentry interval (REI) was changed from 48 or 24 hours (depending on the formulation) to 31 days in the currently available dicofol product (Dicofol 4E, EPA Reg. No. 66222-56). The longer REI renders dicofol unusable for Florida's commercial production. The following summarizes points concerning this pest that are important to Florida strawberry growers and summarizes the remaining management options.

Symptoms of Attack: When local strawberry plants are infested their leaves are small, chlorotic, highly wrinkled, thickened, and possess short petioles. not the Thiodan[®] Emulsifiable Concentrate label distributed by Universal Crop Protection Alliance, LLC (EPA Reg. No. 1386-338-72693). Endosulfan is highly toxic to the *Phytoseiulus persimilis* predatory mites.

Development of the Problem on Strawberries: Problems with the cyclamen mite on strawberries in Florida develop from setting infested plants imported from the north. In more northern climates, where strawberries are grown for late spring fruiting or for transplants, cyclamen mites over-winter as adult females in the crowns of infested strawberry plants. Populations begin to develop in the early spring and reach peaks in midsummer.

Cyclamen mites move along runners from mother plants to daughter plants. New fields established from the daughter plants are rarely heavily infested unless the daughter plants had been severely infested earlier. The larger mother plants grown, a second year, are much more likely to be heavily infested, and thus should not be used if they accompany the rest of the planting stock.

This pest, once introduced into fields in Florida, can move along runners to infest neighboring plants or can be carried by bees, other insects, birds, field workers or machinery to infest other fields. The movement of mites along the soil or on plastic mulch is not likely since this mite requires the humid environment of plant surfaces.

Appearance and Development of the Mite: All forms are so small that they are only visible with the aid of optical magnification. In the field, they can be seen with a 14X or stronger hand lens. Eggs, nymphs and adult females are the forms most frequently observed. Eggs are about half as large as adult females, oval and smooth,

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opaque white. Several eggs may be found bunched together. The adult female is slightly tan with its hind legs reduced to thread-like structures. Males are smaller and with hind legs modified with claspers to hold onto and transport adult females and immobile pupae. Nymphs (larvae) are opaque white with a triangular enlargement on their posteriors.

Controlling a Cyclamen Mite

Infestation: Control of an outbreak of cyclamen mites is difficult to achieve, so strategies should be directed toward preventing an outbreak through the use of plants certified to be free of the pest. To control cyclamen mites established in a fruiting crop in Florida, it is extremely important to detect the infestation early before plant growth has been affected significantly and before the numbers of mites have become too large. A regular program of crop scouting should insure the earliest detection of this pest.

Thiodan[®] (endosulfan) and diazinon are the miticides available and practical for cyclamen mites on strawberries grown in Florida's annual, mulched bed culture, but neither provides the rapid control of this pest that is desired. Thiodan[®] should be applied at 1 (specified by some labels) to 2 (specified by some labels) pounds of active ingredient in 200-400 gallons (depending on the label) of preparation per acre. This material cannot be applied in intervals of less than 35 days. There is a 4-day waiting period between application of the product and the earliest permissible harvest (PHI). Most labels restrict applications to two per season, but not the Thiodan[®] Emulsifiable Concentrate label distributed by Universal Crop Protection Alliance, LLC (EPA Reg. No. 1386-338-72693). Endosulfan is highly toxic to the *Phytoseiulus persimilis* predatory mites.

Diazinon should be applied at 1

pound of active ingredient in 100 gallons of preparation per acre and directed to the plant crown and leaves. Up to a maximum of four applications (depending on the label) can be made, but no application should be made within 5 days of harvest. That PHI is difficult under normal harvesting regimes.

Agri-Mek[®] abamectin and Brigade[®] bifenthrin are registered for control of a related pest, the broad mite, on some crops, although not on strawberry. These products likely would be of some benefit for cyclamen mite control when applied in a manner to contact the pest.

High volumes of spray preparations are favored for miticides to contact the mites deep in the plant bud. At least 150 psi is required to penetrate the strawberry canopy and contact mites in crevices. Application machinery and methods must be adjusted in order to achieve proper delivery of the miticide. Two to three miticide applications applied at 7-10 days intervals may be required for control. All pesticide label restrictions must be observed.

Predatory mites such as *Amblyseius cucumeris* are sold to control cyclamen mites and other small arthropods in some crops; however it is difficult for the predators to provide economic control of a cyclamen mite infestation of strawberries under our normal conditions.

Summary of Precautions against Cyclamen Mites:

1. Plant only stock from reputable nurseries that is certified free of cyclamen mites and avoid planting old mother plants..
2. Inspect fields regularly for outbreaks.
3. Apply Thiodan[®] or diazinon, and perhaps Agri-Mek[®] or Brigade[®], to control any infestations discovered.
4. Restrict movements of possibly contaminated personnel and machinery into non-infested sites.
5. Do not carry-over strawberry plants from one year to another.

New Herbicide Labels in Vegetables

William Stall, University of Florida - Gainesville
Andrew MacRae, GCREC

Eptam 7-E Selective Herbicide has received a FIFRA 24(C) Registration for use in transplanted tomato. Eptam may be applied prior to transplant at 3 to 4 pt/A. Application should be made to the top and bed shoulders just prior to installation of the plastic mulch. Do not transplant tomatoes for a minimum of 14 days following application. Application should be made in a minimum of 20 gallons of water per treated acre. Eptam will provide control of annual grasses, annual broadleaf weeds, and both yellow and purple nutsedge. Read label for further instructions and restrictions.

Third Party Label for Cobra Herbicide. Cobra Herbicide has received a label through Third Party Registrations, Inc. (TPR) for use in plastic-mulched fruiting vegetable crops and okra pre-transplant or post-transplant (post emergence in okra) to row middles. All applications must be made with shielded or hooded equipment.

Apply 16-32 fluid ounces per acre to row middles using a shielded or hooded sprayer. A minimum of 24 fluid ounces per acre is required for residual control of weeds. An adjuvant, such as crop oil concentrate at 1% v/v or a non-ionic surfactant at 0.25% v/v should be used for control of emerged weeds. Do not make more than 2 Cobra applications per growing season. Do not make more than 1 post transplant application.

Applications should be made in a spray volume of 20-50 gallons per acre. Do not exceed 35 psi at the nozzle or apply when conditions are favorable for drift. Cobra contacting green crop foliage or fruit may cause excessive injury. Drift of Cobra treated

sand or soil particles onto plants can cause contact injury.

Cobra may be tank mixed with specified partners. Refer to label for recommended rates and application parameters. Do not apply within 30 days of harvest. The supplemental label must be in the possession of the user at the time of pesticide application.

Registration Cancellation of Alanap L. Chemtura has voluntarily cancelled the Alanap L herbicide registration on cucurbits. There is no limitation on when a distributor can sell existing supplies of Alanap, and a grower can use the product until supplies are gone, which is estimated to be in 2.5 years. The product should hold up well for 3 years or longer if stored under proper conditions. Growers who may want to use the product should obtain supplies as they see fit.

Row Middle Weed Control Options in Strawberry

Andrew MacRae, GCREC

Row middle weed control for annual strawberry production in plastic mulch systems requires a combination of preemergence and postemergence products to attain optimum control of problematic weeds. Weeds such as goosegrass, common and pink purslane, and Florida pusley will commonly be found in row middles and are difficult to control unless the herbicide application is made when the weeds are small (less than 4 inches).

All applications made to row middles should be made using a hooded sprayer that minimizes any contact of the herbicide with the crop or plastic mulch. The sprayer should be set up to deliver the product using low pressure with drift reducing nozzles to prevent injury to the strawberries.

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The sprayer should not travel faster than 5 mph to prevent vertical lift of the spray.

All mention of rate is based on the area actually treated. Do not base calculations on total field acreages or injury may result. For preemergence products, rainfall or irrigation will be required to activate the product. Preemergence herbicides have limited if any postemergence activity, thus if weeds are present the addition of a postemergence product will be necessary. Before using any product read the label for application restrictions and crop rotation intervals. If using a wiper applicator, herbicide options are limited to glyphosate (Roundup, Glyfos, and several other trade names).

Preemergence Herbicides:

Chateau Herbicide SW (flumioxazin) may be applied prior to fruit set at a rate of 3 oz/A. Chateau provides residual control of numerous broadleaf weeds which are problematic in strawberry row middles including nightshades, pigweeds, common purslane, and spotted spurge while providing some grass suppression. This product should be tank-mixed with a grass control product such as Prowl H₂O. Do not allow spray to come in contact with strawberry foliage or plastic mulch.

Devrinol 2-EC and Devrinol 50DF (napropamide) may be applied prior to bloom at a rate of 2 gal/A (2-EC) or 8 lbs/A (50DF). Devrinol must be incorporated to a depth of 1 to 2 inches using irrigation or rainfall within 24 hours of application. Devrinol provides residual control of grasses and small seeded broadleaf weeds including large crabgrass and purslane. Do not allow spray to come in contact with strawberry foliage or plastic mulch.

Prowl H₂O (pendimethalin) may be applied up to 35 days prior to harvest at 1.5 pt/A. Prowl H₂O provides residual control of grasses and small seeded broadleaf weeds including goosegrass, purslane, Florida

pusley, and spurge species. Do not allow spray to come in contact with strawberry foliage or plastic mulch.

Postemergence Herbicides:

Aim EC and Aim EW (carfentrazone) may be applied up to 2 fl oz/A for postemergence control of small broadleaf weeds including nightshades, pigweeds, and common purslane. There is no pre-harvest interval for this product but there is a 12 hour re-entry interval. The addition of non-ionic surfactant at 1 qt/per 100 gallons of spray solution, or crop oil concentrate at 1 to 2 gallon/100 gallons of spray solution, or methylated seed oil at 1 to 2 gallon/100 gallons of spray solution will be required for control. The addition of ammonium sulfate (AMS) or AMS replacement product may enhance control of this product. Aim must be applied to weeds less than 4 inches in size to achieve optimum control. Aim may be tank-mixed with glyphosate to enhance control of problematic weeds. Do not allow spray to come in contact with strawberry foliage or plastic mulch.

The chemical glyphosate (several trade names) may be applied up to 14 days prior to harvest. There are several formulations of glyphosate so check specific labels for application rates. Application may be applied using a hooded sprayer or wiper applicator but in both cases care should be taken to ensure that no glyphosate comes in contact with the strawberries. If some glyphosate does come in contact with the plastic it may be removed using 0.5 inches of rainfall or irrigation. Glyphosate is a non-selective herbicide that provides control of numerous grass and broadleaf weeds. The addition of Aim EC or EW in wiper systems may increase control of problematic weeds.

The chemical paraquat sold under the trade names Gramoxone Inteon and Firestorm may be applied at 2 and 1.3 pt/A, respectively, up to 21 days prior to harvest. The addition of

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non-ionic surfactant at 1 qt/per 100 gallons of spray solution or crop oil concentrate at 1 gallon/100 gallons of spray solution will be required for control. Paraquat is a non-selective herbicide that provides control of numerous grass and broadleaf weeds, but re-growth may occur if the weeds are not controlled when small (less than 4 inches). Do not allow spray to come in contact with strawberry foliage or plastic mulch.

Meet Dr. Andrew W. MacRae

Andrew was born in Truro, Nova Scotia, Canada. He grew up in a farming community consisting of beef, dairy, and low bush blueberry farms. He completed his undergraduate work at the Nova Scotia Agricultural College attaining a B.S. in Agriculture (Pest Management). He worked for the Nova Scotia Department of Agriculture and Marketing as a weed science research assistant in 1996 and then as the interim weed science technician in 1997 and 1998 with responsibilities for research and extension for all agronomic and horticultural crops grown in Nova Scotia. In 1998 he enrolled at North Carolina State University where he attained his M.S. and PhD. in Horticulture (Weed Science). While in North Carolina he conducted research and provided extension information in many horticultural crops including tree fruits and nuts, small fruits, and vegetables. In 2005 he was employed as a Post Doctoral Research Associate with the University of Georgia where he conducted research and provided extension information in vegetables, cotton, and small grains. While in North Carolina and Georgia he conducted research on Methyl Bromide alternatives, crop tolerance and efficacy of herbicides, and crop



weed interactions. Andrew has conducted field research experiments with 43 crops and has participated in 178 IR-4 field residue trials.

Early-Season Strawberry Disease Control?

Jim Mertely and Natalia Peres

If you ask about the proper time to apply fungicides, “better early than late” is usually part of the answer. However the entire answer is usually more complicated. In theory, a fungus disease is difficult to control once it becomes established on a crop because so many spores are produced. When large numbers of spores are available, even good fungicides may fail due to incomplete coverage or failure to protect leaves and flowers that emerge after an application has been made. This situation presents a dilemma to the strawberry grower who cannot start applying fungicides when the plants are being watered in, even though the water needed to establish transplants also spreads disease and promotes infection.

Fortunately, the situation is not as dire as it seems. With one exception, disease pressure is usually low at the beginning of the season, but higher when the main crop is harvested in February and March. The exception is powdery mildew which may develop during mild, humid periods in November and December. Surprisingly, the powdery mildew fungus, *Sphaerotheca macularis*, is suppressed by rain and prolonged leaf wetness. Overhead irrigation during the establishment period may actually help to control this disease! Unfortunately, the same thing cannot be said about anthracnose fruit rot (caused by *Colletotrichum acutatum*), anthracnose crown rot (caused by *Colletotrichum gloeosporioides*) or Botrytis fruit rot (caused

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by *Botrytis cinerea*). These pathogens are either spread by splashing water or are more infective when the plants are wet.

Fungicide trials conducted at the Gulf Coast Research & Education Center have shed some light on proper timing of fungicide applications. For example, early applications of captan are not as effective as late season applications for the control of anthracnose fruit rot. In fact, weekly captan sprays throughout the season are often no more effective in controlling anthracnose than spraying only in February and March when the disease is present. Measures to control *Botrytis* fruit rot are also seldom needed during the early season when disease pressure is low. In addition, applications made in November and December may have little impact on late season outbreaks of the disease. Effective fungicides such as Elevate, Pristine, Scala, or Switch need to be applied during the main infection period (bloom period) in January and early February to be effective and profitable.

Given these findings, should the strawberry grower forget about plant disease control from planting to mid-January? That could be a mistake, for three reasons. First, early season outbreaks of anthracnose fruit rot or *Botrytis* fruit rot may occur when weather conditions are highly favorable, as well as contribute to inoculum build-up for late season epidemics. Second, anthracnose crown rot often kills plants in November and December, but then usually fails to spread. This is partly explained by the arrival of cool weather that favors plant growth but not disease development. In addition, regular applications of captan or thiram have been shown to control the spread of this disease. Finally, crop yields over the entire season are sometimes increased by early applications of fungicides. This effect may be due to small cumulative reductions in several major diseases as well as suppression of minor

diseases such as *Gnomonia* leaf blotch and other foliar diseases.

The bottom line? Regular applications of captan or thiram during the early season may prevent early epidemics, control anthracnose crown rot, and contribute to higher yields. Low application rates are usually adequate to accomplish these objectives. Growers should keep a wary eye out for weather conditions favorable for plant disease development at all times during the season. Applications timed to protect the crop during these critical periods may be more effective and economical than spraying on a routine calendar schedule.

Strawberry Cultivar Situation in West Central Florida

Craig Chandler and Alicia Whidden

In Florida's main strawberry production area, which is between 15 and 30 miles east of Tampa, the percentage of the acreage in various strawberry cultivars will be about the same for the 2007-08 season as it was for the 2006-07 season: approximately 60% 'Festival', 15% 'Treasure', 10% Driscoll cultivars, and 20% Other (mostly 'Camino Real', 'Winter Dawn', 'Camarosa', and 'Carmine').

'Festival', released from the University of Florida (UF) in 2000, is a grower favorite because it has a sturdy bush that is easy to harvest, doesn't yield huge quantities of fruit on any one date, and produces very few cull fruit. 'Festival' is a supermarket favorite because its fruit are attractive, fit well in one pound clamshell containers, and have a long shelf life.

'Treasure' (introduced in 2000 by J & P Research, Inc. of Naples, FL) is well adapted to the west central Florida production area. This cultivar is resistant to

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Colletotrichum crown rot, and its fruit have a deep red exterior color and are resistant to abrasion.

‘Camino Real’, a 2001 release from the University of California (UC), is a late producing cultivar that has large, attractive fruit.

‘Winter Dawn’, a 2005 UF release, can produce higher November through February yields than other cultivars when planted the last week of September or the first week of October. Also, ‘Winter Dawn’ can produce relatively large fruit on small plants, and its fruit are resistant to Botrytis and anthracnose fruit rots.

‘Camarosa’ (a 1993 UC release) has performed well throughout Florida. ‘Camarosa’ can be quite vigorous, and has high total season yield potential. Its fruit are typically very large and firm, deep red, and flavorful when fully mature. It is susceptible to anthracnose fruit rot and powdery mildew.

‘Carmine’, a 2002 UF release, can produce high mid season yields. Its fruit are deep red and glossy. Internal fruit tissue is also a deep red, and contains generous levels of antioxidants. High density plantings of ‘Carmine’ (up to 33,000 plants per acre) have been successful because of the compact nature of the plant, and the fact that ‘Carmine’ like ‘Winter Dawn’ has good resistance to Botrytis and anthracnose fruit rots.

Two advanced selections from the UF breeding program will be evaluated in grower trials during the 2007-08 season. FL 01-116 has the potential to produce high early season yields of large, attractive fruit. Its canopy is open, making for easy spray penetration and harvest. FL 00-51 is also an early producer, and its fruit are large, firm, and flavorful. But because its fruit are quite susceptible to rain damage, it will be evaluated only in protected culture (greenhouse and plastic tunnel) trials.

Northern Tampa Bay Water Use Caution Area

In June the District's Governing Board expanded the NTBWUCA to the remaining parts of Hillsborough and Pasco Counties. Permittees that are impacted by this change will soon receive a letter notifying them of the NTBWUCA and after that letter, they will receive a District initiated permit modification. This modification will include new permit conditions including metering and reporting. The District has developed a meter reimbursement program for eligible sites and we would appreciate your help in getting the word out.

Permittees in the NTBWUCA authorized to withdraw 100,000 gallons per day (gpd) or greater are required to follow the District's Water Use Caution Area metering and reporting criteria. They will be required to install the flow meters by June 1, 2008, on withdrawal points that are individually permitted for more than 10,000 gpd and report these meter readings on a monthly basis.

To help reduce some of the metering costs the District has created a flow metering reimbursement program. The District will reimburse permittees a fixed amount for their flow meter(s) if it meets the following conditions:

- Installed after July 1, 2007 and before June 1, 2008
- Non-resettable flow meter
- Installation meets manufacturer's installation standards

Flow meter has an accuracy of 5% +/-.

For more information about the flow meter reimbursement program, or to schedule a site visit to determine reimbursement eligibility, please call the District at 1 (800) 231-1476 or (352) 796-7211 extension 4346

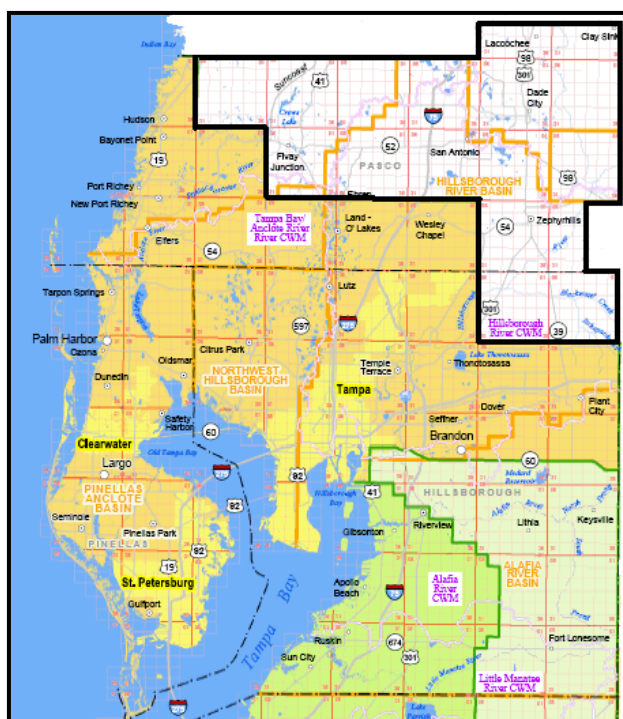
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or, visit the District's web page:
www.watmatters.org/agriculture/.

The expanded NTBWUCA is the white area enclosed with the heavy black line on the map. - Thanks for all your help and please call me if you have any questions...

Ron Cohen, P.E.

Agricultural and Irrigation Engineer
 Technical Services Department
 Southwest Florida Water Management District
 1-800-423-1476 ext 4300
 RCohen@watmatters.org



The use of trade names in this publication is solely for the purpose of providing specific information. It is not a guarantee or warranty of the products names and does not signify that they are approved to the exclusion of others of suitable composition. Use pesticides safely. Read and follow directions on the manufacturer's label.

2007 Florida Ag Expo Program Thursday - December 6, 2007

Moderator: Alicia Whidden, Hillsborough County Extension Service

8:00 a.m. - 4:00 p.m.

Registration

8:00 a.m. - 9:00 a.m.

Breakfast/Exhibit Hall Open

8:50 a.m.

Welcome/Event Overview

Speakers: Dr. Jack Rechcigl, Director, UF/IFAS, GCREC & Dr. Jimmy Cheek, Vice President, UF/IFAS

9:00 a.m. - 9:20 a.m.

Increasing Efficiency with Harvest Aids Equipment for Vegetables

Speaker: Dr. Steve Sargent, UF/IFAS, Horticultural Sciences Dept.

9:20 a.m. - 9:50 a.m.

Cucurbit Insects and Related Viruses

Speaker: Dr. Susan Webb, UF/IFAS, Entomology & Nematology Dept.

9:50 a.m. - 10:10 a.m.

Using GIS Technology to Study Changes in Whitefly Density and TYLCV Incidence in Tomato?

Speaker: Dr. Dave Schuster, UF/IFAS, GCREC

10:10 a.m. - 10:40 a.m. Break/Exhibit Hall Open

Alternative Crops for Florida Growers

10:40 a.m. - 11:10 a.m.

The Three P's: Peaches, Plums and Persimmons

Speaker: Dr. Jeff Williamson, UF/IFAS, Horticultural Sciences Dept.

11:10 a.m. - 11:25 a.m.

Raspberry - A Potential New Crop for Central Florida

Speakers: Dr. Craig Chandler, UF/IFAS, GCREC, and Dr. Adam Dale, University of Guelph, Ontario, Canada

11:25 a.m. - 11:50 a.m.

Development of Ethanol Crop Production in Florida

Speaker: Dr. Bradley Krohn, President & CTO, US EnviroFuels**11:50 a.m. - 1:00 p.m.****Lunch/Exhibit Hall Open****Operational Efficiencies: Eliminating the Guess Work****1:00 p.m. - 1:30 p.m.**

Linking Remote Sensed Imagery and Soil Information Systems

Speaker: tbd**1:30 p.m. - 2:15 p.m.**

Using Technology to Reduce Costs/Improve Technology

Speaker: tbd**2:15 p.m. - 2:45 p.m.****Break/Exhibit Hall Open****2:45 p.m. - 3:30 p.m.**

Discovering Value and Piece of Mind Through Product Tracking

Speaker: tbd**3:30 p.m. - 4:00 p.m.**

Fleet Management & Precision Farming Equipment

Speaker: tbd**Friday - December 7, 2007****8:00 a.m. - 11:00 a.m.****Registration****8:00 a.m. - 9:00 a.m.****Registration/Breakfast/Exhibit Hall Open****10:15 a.m. - 10:45 a.m.****Break/Exhibit Hall Open****12:00 p.m.****Exhibit Hall Closes****9:00 a.m. - 4:00 p.m.**

Food Safety and Good Agricultural Practices (GAPs) For Florida Fruit and Vegetable Growers

NOTE: Registration Fee Required for the Food Safety Workshop. Presented by University of Florida IFAS and Cornell University National GAPs Program Food safety is a priority for Florida fruit and vegetable growers, and on Friday, December 7, 2007, growers will have the opportunity to learn the latest in food safety practices and earn required CEU credits. The day-long seminar meets the mandatory educational requirements for tomato growers and would be essential for leafy greens, cantaloupe, melon, and blueberry and strawberry growers. Subjects scheduled to be covered include:

- GAP Issues Overview
- Traceback Case Studies
- Managing The Audit Process
- Worker Education & Training
- Crisis Management Practices

The registration fee is \$20 per person and includes lunch and materials. For more information and to register, please call 407-660-1949.

Other highlights for the 2007 Florida Ag Expo include:

**Cook-to-order Omelet Breakfast
sponsored by the
Florida Strawberry Growers
Association—Thursday**

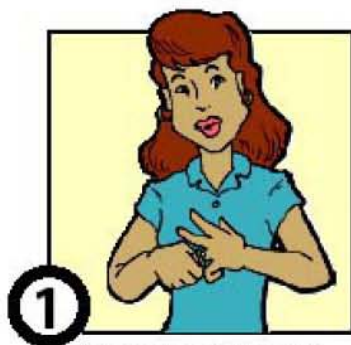
**Lunch for all Participants—
Thursday**

**Vendor Hospitality Room—
Vendors: Take a break and have a
snack in the UF/IFAS sponsored
Hospitality Room**

Free registration for all participants

Proper Handwashing for Produce Handlers¹

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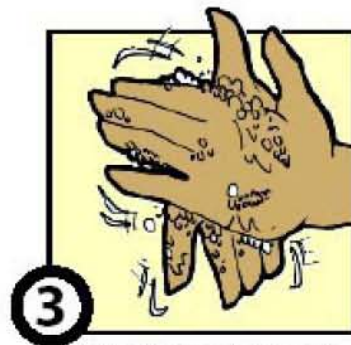
1

Remove rings and bracelets except for plain wedding band.



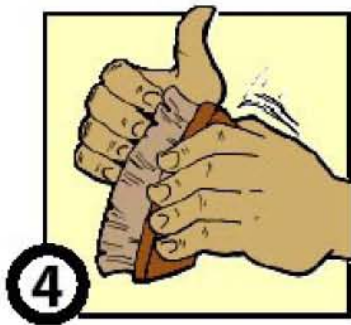
2

Use soap and running water.



3

Lather hands and arms up to elbows with soap for 20 seconds. (sing "Happy Birthday" song twice)



4

Wash backs of hands, wrists, between fingers and under fingernails using a nail brush.



5

Rinse hands and arms under running water.



6

Dry hands and arms with clean, disposable paper towels. Use paper towel to turn off water.

Wash your hands before:

- returning to the field or entering the packing line
- touching clean produce
- putting on new gloves
- preparing food
- consuming food

Wash your hands after:

- visiting the restroom
- touching bare human body parts (ear, nose, hair, etc.)
- working with soil or rotten produce
- handling garbage
- smoking or doing other activities that dirty your hands

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