2007 Calendar of Events

August 28 & 29  2007 FSGA Strawberry Agritech Educational Session & Tradeshow, Trinkle Building, UF/HCC Plant City Campus. For more details contact FSGA office, 813-752-6822.


Sept. 5  Tomato Institute, Ritz-Carlton Hotel, Naples, Fla. In conjunction with the 2007 Joint Tomato Conference, Sept. 4-9. For more information contact the Florida Tomato Exchange, 407-660-1949.

Sept. 11 & Oct. 9  Pesticide License Testing. Hillsborough County Extension Office, Seffner. 9 am. For more information call Mary Beth Henry, 813-744-5519, ext 103.


From Your Agent:
Start of a New Season

A new season is upon us and before things get too hectic take a look at getting all your paperwork and training materials ready for a new season. Now would be a good time to be sure you have WPS training materials on hand and to check out the condition of posters on your Central Posting. Make sure posters are not faded and unreadable and that the information for emergency medical help that is to be written on the bottom is still the correct information and is legible. If you need a new pesticide safety poster (Central Location Safety Poster- EPA required) or WPS training materials they are available for order from Gemplers (1-800-382-8473 or www.gemplers.com) or, if still available, they can be ordered free from FDAOCS. If you need a form to order from FDAOCS give me a call at 813-744-5519, ext. 134. Remember their supply is limited and it is first come, first serve. Also remember that the pesticide safety poster is not the only poster you need to have posted for your workers. There are other government agencies you need to satisfy. For a list of posters you need, look in the Berry/Vegetable Times

Impacts of EPA Proposed Buffer Zone Restrictions on Florida Strawberry Acreage and Production
Joseph W. Noling and Sherrie Buchanon, CREC

This past spring the strawberry harvest season was concluded with an extension grower meeting to discuss the current status of EPA reregistration of the soil fumigants, particularly that of chloropicrin. We reported that EPA was proposing to implement a requirement for pretty substantial buffer zones surrounding fumigant treated fields. Based on measurable distance and regulatory requirement for specific fumigant use,
January 2007 issue. If you cannot access the newsletter then call me for a copy of Factsheet 07-1.

Remember new workers will need to be trained before the sixth day of work. At the end of training have them sign a form that states when the training was given, trainer’s name and certification, and what training materials were used. Be sure to keep these records in a file that can be given to the inspector during a WPS farm audit. Also remember if a worker is handling pesticides, even if it is only Roundup ®, the worker will need to be trained as a handler.

This also is a good time to get the packing sheds in shape for third party audits. Details such as proper garbage containers, hand washing facilities and required decontamination supplies for your WPS inspection and where you will locate them can be taken care of now.

Another thing that needs to be done at the beginning of each season is to calibrate your sprayer. You want complete even coverage from your spray rig. Be sure to record when you calibrated as this is part of the BMP checklist. Check out your irrigation system and make any repairs that may be needed. Some time spent now before things get really hectic and before you need the equipment will make it easier in the next months.

Several terrific meetings are coming up- the 2007 Agritech, the Tomato Institute and the 2007 Fl Ag Expo. All of these will have informative talks and pesticide license CEUs. Check the calendar of events and this newsletter for more detailed information. All of the meetings are a great way to improve your knowledge and stay cool.

Stay safe in this heat,

Alicia Whidden
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buffer zones will restrict where fumigant field treatments and crop production, relative to any occupied structure or human activity, can legally occur. As a result, there is significant grower concern that the practical uses of chloropicrin (and other fumigants) as a pest management tool will be effectively eliminated because EPA has proposed the implementation of large buffer zones, as much as 4724 feet (0.9 miles), surrounding fumigant treated fields if worse case scenario is depicted. This newsletter article describes a study we conducted to characterize acreage and economic impacts from lost production for implementing buffer zone restrictions of 100, 200, 300, 400, 500, 1000, 2000, and 4000 feet surrounding each Hillsborough County Florida strawberry field. It has been submitted to EPA for their consideration as part of a more comprehensive information package developed by FSGA and FFVA. A similar study demonstrating significant economic impact has also been developed by Steven Gran and Dan Hardy of the Hillsborough County Economic Development Department.

Fig. 1 Impact of new EPA proposed Buffer Zone restrictions on percentage Florida strawberry acreage affected and net value of loss production (millions of dollars) in Hillsborough Co., FL using adjusted tax parcel centroid values for buffer zone distance.
and buffer tool software to indicate that buffer zone requirements of 2000 feet or more will virtually eliminate 100% of strawberry production in Hillsborough County, FL (Fig. 1). The analysis indicates that implementation of any buffer zone requirement will have significant economic impact. In general, and using adjusted centroid values, the results for imposing buffer zones of 100, 200, 300, 400, 500, 1000, 2000, 4000 feet will cost Hillsborough County strawberry growers approximately $16.0, $34.3, $56.1, $81.0, $105.0, $170.1, $213.0, and $217.0 million dollars, respectively, by reducing available land by 7.4, 18.8, 25.8, 37.3, 48.4, 78.4, 98.1, and 100%, respectively. The impact of implementing increasing buffer zone distances on the disappearance of farmable acreage is illustrated in Fig. 2. It demonstrates that if acceptable regulatory changes in proposed buffer zone restrictions do not occur, Florida strawberry growers will either have to move to new production sites in which buffers are not at issue, or accept significant yield penalties following use of other, less effective, pest and crop management tactics.

The sheer magnitude of these economic impacts will surely make use of soil fumigants like chloropicrin, Kpam, or Vapam impractical for growing strawberry in Hillsborough County because of the relative proximity of occupied structures to production fields. Clearly, the rapid implementation of buffer zones could have disastrous economic consequences to the Florida Strawberry industry. Concerned by the impacts, EPA officials directly involved with fumigant reregistration were toured through the state in August by FFVA in hopes of demonstrating and further educating EPA of the need and role of soil fumigants in Florida agriculture. In response to these efforts, it is hoped that some reasonable compromise can be obtained and that the time needed to develop new rate and emission reducing strategies will be factored into any EPA decision and or timetable to broadly implement buffer zone requirements for Chloropicrin and other essential fumigants.

![Fig. 2](image)

Impact of imposing buffer zones of different sizes (100 to 4000 ft) on Florida strawberry acreage using point centers of occupied dwelling as the reference for calculating buffer zone distances. Area depicted is one aerial image representing 9.67 sq miles Hillsborough County, FL.
Strawberries in Egypt
Craig Chandler, Natalia Peres, and Jim Price

From January 8th through the 11th, 2007, we had the pleasure of visiting strawberry farms in Egypt. Our host for this trip was PICO Agricultural Company. PICO has the master license for propagation of UF strawberry cultivars in Egypt. PICO employees over 1,000 people and grows crops on 4,000 acres of irrigated land between Cairo and Alexandria. PICO and several other large Egyptian agricultural companies produce fruits and vegetables according to European Economic Community quality standards, and focus on supplying European markets, including the UK, during the off season.

The Egyptian strawberry industry is slightly smaller than the Florida industry. Fruit production fields are located at low elevations (a few hundred feet or less above sea level) and at latitudes in line with the panhandle of Florida. The cultural practices used in Egypt are similar to those used in Florida. Fresh transplants are planted on raised beds covered with polyethylene mulch. Harvest begins in mid November and generally continues into March, although fruit is exported to Europe only until about the end of January. Starting in February, Morocco and Spain are producing fruit, and it becomes uneconomical to airship fruit from Egypt.

The main cultivars being used for export are Tamar (an Israeli release), Sweet Charlie, and Festival. Sweet Charlie continues to be accepted by European buyers because of the high quality pack PICO and some of the other Egyptian growers are able to provide them. Fruit is stem picked and gently placed into shallow plastic containers, the bottoms of which are often lined with a piece of bubble wrap (Fig. 1).

Strawberries are planted at a higher density in Egypt than in Florida. Three and four-row beds are common there. This high density is possible because production basically takes place in a desert environment, where low humidity and rainfall provide unfavorable conditions for the development of most diseases. Very low labor costs also allow for the use of multi-row beds, which are not as efficient and easy to harvest as the two-row beds used in Florida.

It rarely, if ever, freezes in Egypt, but in the winter air temperatures regularly drop to the 30s and 40s (°F) after sunset. Therefore, to capture and retain heat in the beds clear plastic sheeting is pulled over each
individual bed in the late afternoon (Figs. 2 and 3). This technology is known as low or micro tunnels. High or macro tunnels (i.e. tunnels that cover more than one bed) are also used in Egypt, but are less common. The ability to produce satisfactory yields of strawberries in December and January, and thus take advantage of lucrative European markets, is dependent on the use of this technology and early ripening cultivars such as ‘Sweet Charlie’.

As is generally the case in Florida, the most serious pest and disease problems on strawberries in Egypt are the two-spotted spider mite and Botrytis fruit rot. Egyptian growers also have problems with seed-eating birds.

Nitrogen Fertilizer Sources: What does the Future Hold for Florida Growers?
Tom Obreza and Cheryl Mackowiak
UF/IFAS Soil and Water Department

Florida growers are well aware that nitrogen (N) is the single most important nutrient applied as a fertilizer to assure maximum yield and fruit quality. Most growers are probably also aware of the substantial N fertilizer price increases that have recently occurred. Typical questions on the minds of growers these days are: why has this happened, will it continue, and will economics force a change in the type of N fertilizer we use?

It's all about natural gas. Ten years ago, the United States was the world's largest exporter of N fertilizer; now we are the largest importer. More than half the N our farmers now use comes from places like Trinidad, Russia, and the Persian Gulf rather than the Midwest or Southeastern USA. Why are we importing so much? It all starts with production of anhydrous ammonia (NH₃), from which almost all familiar solid N fertilizers like ammonium nitrate are made. Ammonia is produced by combining N from the air with hydrogen at high temperature and pressure. The hydrogen is derived from natural gas, which accounts for around 80% of the production cost. Natural gas prices have been destabilized by increased competition (electric power generation, home heating) in the long term and the Gulf of Mexico hurricanes in the short term. This situation has put massive stress on the fertilizer industry. Since natural gas is so much cheaper in other parts of the world, ammonia producers in the USA have not been able to compete, so many of our domestic production facilities have shut down or closed for good. For example, the price of natural gas in the USA is around $10 per million Btu. Worldwide, the price is around $2 in Trinidad, $0.80 in Russia, $0.70 in Venezuela, and $0.60 in the Middle East. With recent record high prices for crude oil and natural gas, it is predicted that we are not likely to see lower N fertilizer prices anytime soon. It does not take an economics scholar to realize that, unless alternatives are found, our future demand for N fertilizer will increasingly be met by imports.

What kind of N is being imported?
Ammonia imports to the U.S. increased from 4.2 million tons in 2000 to about 7.6 million...
tons in 2003, but urea imports increased even more. Although NH3 is still the form of N preferred in this country, it must be stored under pressure and is expensive to keep in large quantities. Urea, on the other hand, is relatively cheap to move and easy to store. While NH3 is not going to disappear by any means, urea is emerging as the N source preferred by overseas shippers.

What effect will this have on N fertilizer choices? The future of our ammonium nitrate supply is in doubt for several reasons. First, its storage is a security issue due to its explosive nature. Second, it cannot be shipped long distances because it does not hold up well in high humidity. Third, it is unclear as to how much imported ammonia can be converted to ammonium nitrate considering the degree to which domestic production has been curtailed. Growers used to applying ammonium nitrate in their groves may find themselves in an economic quandary in the near future. Ammonium nitrate will not disappear, but restricted availability may make the price of alternative N sources much more attractive. This possibility brings up the next question: Do we need to manage these materials differently?

Managing water-soluble N fertilizers. The two major, non-specialty, water-soluble N fertilizer alternatives to ammonium nitrate are ammonium sulfate and urea. While ammonium sulfate has been commonly used to fertilize Florida citrus for many years, urea applied as a solid material has not. Let's briefly compare and contrast these materials and ammonium nitrate with respect to properties that affect how they should be managed to fertilize citrus:

- Ammonium nitrate is easily blended into complete fertilizers for routine application to citrus as dry materials (for example, a 15-5-15 material made by combining ammonium nitrate, concentrated superphosphate and muriate of potash). Dry fertilizers containing this N source cannot be stored for long periods because of its tendency to "melt" in high humidity. In addition, ammonium nitrate is not compatible with urea in dry blends because the combination turns to liquid immediately. Loss of N by ammonia volatilization following surface application of ammonium nitrate is not considered to be significant unless the soil pH is above 7. This N source is easily dissolved in water to make solutions that are used for fertigation, either alone or in combination with soluble potassium (for example, an 8-0-8 true solution fertilizer).
- Ammonium sulfate is also easily blended with other fertilizer materials, including urea, to make complete dry fertilizers. These blends are very stable and can be stored for longer periods because they do not melt in high humidity. Ammonium sulfate does not dissolve as quickly as ammonium nitrate or urea, so it is seldom used to make N solutions. It has the highest acidifying power of the N sources considered here, so soil pH should be monitored if ammonium sulfate is routinely used and lime applied if necessary to counteract low pH. It also contains 24% sulfur, which is an important plant nutrient. The cost of ammonium sulfate is not affected by natural gas prices nearly as much as ammonium nitrate and urea are, because this fertilizer is a by-product of industrial steel-making and synthetic fiber production. Currently, by-product ammonium sulfate supplies 100% of its demand as fertilizer in the U.S.
- Urea is more water-soluble than ammonium nitrate, but it is not affected by humidity to the same degree. After application, it quickly converts to ammonium carbonate in the soil. The key hazard associated with the use of solid
urea to fertilize is loss of N through ammonia volatilization following surface application. It is extremely important to irrigate or soil-incorporate urea immediately after a surface application. Urea is commonly used to make fertilizer solutions. If fertigated, volatilization from urea would not occur, since irrigation water would move it into the soil.

Let's see all that in a nutshell.

Economics and fertilizer availability may cause Florida growers to re-think the selection and management of N materials. Limited availability or high cost of ammonium nitrate will likely stimulate increased use of ammonium sulfate or urea. Growers must be aware of the different properties and behavior of these fertilizers, and should be prepared to change some management practices, if necessary, to maintain high fertilization efficiency.

Prepare for Initial Insect and Mite Management as Transplants Arrive
James F. Price and Curtis Nagle

Transplants will begin arriving soon and characteristics of new strawberry fields will be determined by the quality of those transplants. As the transplants arrive, growers have a chance to discover problems, alter characteristics in their favor, and avoid some serious pest problems on down the road.

Spider mites, aphids, and, more rarely, cyclamen mites easily can accompany transplants from nurseries and establish as problems for the early season or much longer. But early inspections and corrective measures by growers can avoid unnecessary trouble.

As transplants arrive growers should select one transplant from as many crates and bundles as practical from each homogeneous planting unit. A homogeneous planting unit is composed of the transplants that most likely share pest-related characteristics and normally is the area planted during 1 week of transplanting of one cultivar from one nursery location. Both surfaces of fully expanded leaves of each selected transplant should be examined with a 5X hand lens for spider mites and aphids and the still-folded leaves and the surfaces of tissues within the crown should be examined with a 14X hand lens for cyclamen mites.

If insects or mites are found, then plans should be developed to treat the plants early with pesticides or to watch the pests especially close for quick reaction once thresholds are reached. Since at transplanting, little of the plant mass is present that would be present at time of release of any predatory mites and since at transplanting, few beneficials are established in the field and there are fewer problems associated with applying pyrethroids as well as other harsh pesticides at that time. This opens opportunities for a wider array of pesticides to “clean up” infested transplants and get the season off to a good start.
Horticultural Sciences Department

THIRD ANNUAL
Tomato Packinghouse Managers Workshop
“Sanitation and Food Safety Update for the Tomato BMP Program”
Tuesday, September 4, 2007  1:30 p.m. – 5:00 p.m.
Ritz-Carlton Hotel, Naples

REGISTRATION FORM—Please print clearly

Attendee Name: ________________________________
Title: ________________________________
Company Name: ________________________________
Company Address: ________________________________
City, State, Zip: ________________________________
Phone: __________  FAX: __________  E-mail: __________________

Preferred Method of Contact (check one):
☐ Phone  ☐ FAX  ☐ E-mail

Send completed registration form and payment of $50 (check or money order only - payable to Florida Tomato Exchange) to:

Florida Tomato Exchange
Attn: Tomato Packinghouse Managers Workshop, 800 Trafalgar Court, Suite 300
Maitland, FL 32751

Deadline for advance registration is Friday, August 31, 2007. Registration is available on-site for $60 (check, money order or exact cash only) the day of the meeting. On-site registration begins at 1:00 p.m.

2007 Tomato Institute Program
Wednesday, September 5, 2007
Ritz Carlton, Naples, FL

Moderator: Alicia Whidden, Hillsborough County Extension Service, Seffner

9:00 am Welcome – Joan Dusky, Associate Dean & Professor, UF/IFAS Extension, Gainesville

9:10 am State of the Industry – Reggie Brown, Florida Tomato Committee, Maitland

9:20 am CUE and Fumigant Assessment Update – Mike Aerts, FFVA, Maitland

9:40 am Critical Issues for the Tomato Industry: Preventing a Rapid Postharvest Breakdown of Fruit – Jerry Bartz, UF/IFAS Plant Pathology Department, Gainesville

9:50 am Food Safety Update and TGAP Program – Martha Roberts, UF/IFAS, Tallahassee

10:20 am Results of Latest BMP Trials – Monica Ozores-Hampton, UF/IFAS, SWFREC, Immokalee

10:50 am Recent Developments and Release Outlook from the University of Florida Tomato Breeding Program – Jay Scott, UF/IFAS, GCREC, Balm

11:10 am Western Flower Thrips: on the Move? – Joe Funderburk, UF/IFAS, NFREC, Quincy

11:30 am Lunch

Moderator: Phyllis Gilreath, Manatee County Extension Service, Palmetto

1:00 pm Got Gas? Keep it Under Wraps – Jim Gilreath, PhytoServices, Myakka City

1:20 pm Whitefly Resistance Update – Dave Schuster, UF/IFAS, GCREC, Balm

1:40 pm Small Viruses That Cause Big Problems in Tomatoes – Jane Polston, UF/IFAS, Plant Pathology Department, Gainesville

2:00 pm Industry New Product Updates – TBA

3:00 pm Adjourn

RUP and CCA CEUs have been approved in the following categories: RUP: 4 total (4 Private, 3 Ag Row, 3 Demo/Research, 0.5 Soil Fumigation)  CCA: Morning session: 2.0 PM  Afternoon session: 1.0 CM, 0.5 PM, 0.5 NM.
Suncoast BMP Implementation ... Jemy W. Hinton

The 1999 Florida Watershed Restoration Act (FWRA, s. 403.067 F.S.) mandates that Total Maximum Daily Loadings (TMDLs) be developed for all pollution sources.

> The FWRA directs FDACS to Develop BMPs to address agricultural nonpoint sources.

>2005 legislature: In basins where TMDLs have been established, ag landowners must either:
  - conduct the water quality monitoring necessary to prove that discharges from their lands do not exceed specified loadings.....at the landowner's cost....OR
  - enroll in recognized BMP programs

Voluntary Ag BMP Implementation Program

• To enroll in the program, growers perform an environmental assessment of their operations to identify BMPs that should achieve the greatest economic and environmental benefit.

• Growers then submit a Notice of Intent to implement BMPs to FDACS.

• Growers maintain records and provide documentation regarding the implementation of BMPs.

• FWRA grants Presumption of Compliance with state water quality standards to landowners enrolled in voluntary BMP programs that have been verified by FDEP to be effective.

• Growers enrolled in the BMP program become eligible for cost-sharing funds to implement specific BMP practices.

• In a short two years, the 1999 FWRA will be revisited by the legislature. At that time, the legislature will look at the progress of the voluntary BMP programs throughout the state and make a decision on the direction of the program for the future.

• The best message agricultural producers can send to the legislature is that they wholeheartedly support the existing voluntary BMP method of addressing TMDL and water quality issues as afforded by the 1999 FWRA. This means enrolling your acreage in available BMP programs and doing your best to minimize adverse impacts of your agricultural operation.