TFVA 2007 Annual Meeting CANCELLED

The Tennessee Fruit and Vegetable Association will not hold their annual meeting this year. They are in the process of reorganization and exploring how to make the TFVA stronger. The board will still meet promptly at 8:00 AM on Monday, December 10, 2007 at the Airport Marriott in Nashville. All are encouraged to attend and express their ideas to improve and reinvigorate the association. If you have ideas, but are unable to attend the meeting, please send them to annettw@utk.edu.

Alanap L On Its Way Out

Chemtura has decided not to re-register Alanap L, an herbicide used on some cucurbit crops. Supplies of Alanap L are still available and can be used by growers until supplies are gone. Chemtura will be moving the remaining supply to distribution in the next few months so growers can load up or have their distributors load up for them. Alanap has a storage life of 3 years or more, under proper conditions. Please pass along this information to growers who use the product so they can make arrangements as they see fit. As of now, production of Alanap has stopped and the EPA has given Chemtura a short time frame to liquidate their inventory.

Avocados Hit By California Fires

In addition to the hundreds of thousands of people who have been evacuated from their homes and thousands of houses destroyed by the fires in Southern California, avocados were also in the destructive path. The Santa Ana winds have knocked up to 35 million pounds of fruit to the ground. Northern San Diego County is home to a high concentration of small family-owned avocado growers. “We know a lot of growers lost their homes,” Guy Witney, director of industry affairs for California Avocado Commission, said. “The rough estimate of around 10% (loss of the 350 million-pound crop) still stands because in talking to people who stayed behind they said fires went through the groves at ground level, burning the leaf litter and the irrigation lines, but most of the trees are pretty much intact.”

Ernesto Arana, field representative for Prime Produce Internation LLC, said at least two growers in Escondido and Highland Valley lost their orchards. This article was adapted from “Avocado loss estimate holding at 10%” by John Chadwell in The Packer on October 24, 2007 at: www.thepacker.com/.

Sustainable Low Cost Heating for Season Extension Structures Workshop

What: Creating Sustainable Low-Cost Heating for Season Extension Structures.

When: Saturday, November 17, 2007, 9:00am-5:00pm.

Where: Davidson Farms
993 Carters Valley Rd.
Rogersville, TN 37857

Cost: FREE (must apply, see more information below)

The Clinic Appalachian Farm Enterprises (CAFÉ) with help from the Farm-2-School Project of Jubilee Project, Heifer Project International and Southern Region SARE are pleased to sponsor a vermicomposting workshop for current and potential Farm-2-School growers.

The workshop presenter will be Will Allen, Founder/Director of Growing Power in Milwaukee, WI. Growing Power is a national not-for-profit organization supporting the development of community food systems. Will is the founder and president of Rainbow Farmers Cooperative. Will was recently honored by the Ford Foundation Leadership with the Changing World Award.

Will has developed a bio-intensive growing system using worms. This system is being used in urban and rural agriculture projects around the world. He has developed a system for transferring the heat from composting bins into season extension structures as a way to supplement solar heating. Added bonuses are rich compost and opportunities to make a profit by sale of worms and compost. The workshop will be very “hands on”. He will lead the constructing a compost system. In order to fulfill grant requirements, the Farm-2-School Project asks that a commitment to sell food to schools be given. If you are interested in attending the workshop or learning more about the Farm 2 School Project, contact Lisa Long (423.357.8073 or lisafarm2school@yahoo.com). Applications will be reviewed as received, due to limited space.
Water, Water Everywhere!
A look at hydroponics systems

By: Carolyn Ross Tomlin

Still considered a young science, hydroponics, the science of growing plants with roots in solutions containing necessary nutrients, can be adapted to outdoor farming, indoor greenhouse cultivation and home use. Experiments for the growing environment have been modified for growing vegetables in submarines to feed the crews, as well as developing growing techniques in space for astronauts.

As an answer to food production, undeveloped countries, or those with dry deserts, little rainfall, nutrient-poor soil, or limited space that is productive for growing, may find answers in the use of hydroponics. By removing the salt from seawater, desert sand becomes a good growing medium when proper nutrients are added. Regardless of growing plants in soil or soilless mixture, basic requirements remain the same. Growers must know the amount of light, nutrients and water needed for each variety or species of plant.

Six basic hydroponic systems

Wick system
One of the simplest types of passive hydroponic systems is known as the wick system.
With no moving parts, the wick is responsible for pulling nutrient solution.
Growing medium: Perlite, vermiculite, Pro-Mix and coconut fiber
Disadvantage: As large plants tend to use large amounts of water, the wick may not be able to supply the nutrient solution fast enough.

Water culture
As an active type of hydroponic system, the water culture is simplest. Plants are supported on a Styrofoam platform that rests directly on the nutrient solution. Oxygen goes directly to the roots through an air pump, then through an air stone, creating bubbles in the solution. Growers find more success with leaf lettuce than other vegetables.
Growing medium: None. Great for classroom use as an old aquarium or large leak-free container works well.
Disadvantage: Not suitable for large plants or those with a long growing season.

Ebb and flow
The ebb and flow system (also called the flood and drain) floods the growing container with nutrient solution and returns the liquid to the holding tank. This action takes place by using a timer and submerged pump. Depending on the size of the tank, variety, temperature, humidity, and type of growing medium, the timer is set to activate several times a day.
Growing medium: Growrocks, gravel or granular rockwood, perlite. Individual pots make rotating plants easier.
Disadvantage: Power outages, pump or timer malfunction can mean disaster. Tender roots dry out quickly if water cycles are interrupted. Make adjustments by using a growing medium that contains more moisture, such as rockwool, vermiculite, coconut fiber or a soilless mix like Pro-Mix or Faffard’s.

Drip system
Probably the most widely used is the drip system, being either recovery or non-recovery. Simple to implement, a timer controls a pump submerged in the bottom of the tray. Through a small drip line, the timer turns on the pump and releases the nutrient solution. In the recovery drip, the solution is collected and returned for reuse. The non-recovery drip does not hold or collect the solution run-off.
Growing medium: Grow Rocks, gravel or granular rockwood.
Disadvantages: Less maintenance is needed for the non-recovery, as the solution is not recycled. Therefore, the nutrient strength and pH of the reservoir remains the same. The recovery method requires periodic checking to ensure the nutrient solution levels remain constant.

Nutrient film technique
NFT (nutrient film technique) is the kind of hydroponic system most familiar to growers. No timer is required, as a constant flow of nutrient solution is pumped into the growing tray. The solution floods the roots and drains back into the reservoir.
Growing medium: Primarily air. Plants are supported in small plastic buckets with roots hanging in the solution. This saves the costs of replacing the medium after each crop.
Disadvantage: Power outages and pump malfunction, which cause the roots to dry out quickly when the solution flow ceases.

Aeroponic system
The most high-tech method of hydroponic gardening is the Aeroponic system. A nutrient solution mists the rooms every few minutes. A short cycle timer activates the pump for a few seconds every couple of minutes.
Growing medium: Primarily air.
Disadvantages: Roots dry out quickly if the misting cycle closes down.

“With less and less farmland available across the U.S., growing hydroponic vegetables in water is the wave of the future,” says Dr. Vicki Foote, vocational direction for Jackson-Madison County Schools, in Jackson, Tenn. “In fact, three greenhouses will produce enough vegetables in one year to equal the output of a 500-acre farm. This will be the way food is grown in the future, and students are learning agriscience in (Continued on page 3)
Question of the Month

Q: I have a farmer that is interested in growing greenhouse tomatoes in the spring before field tomatoes are available. He is thinking about growing the plants in bags as he has heard that this is commonly done. Do you have some information that you might be able to send that I could pass on to him? - T.P.

A: Greenhouse tomatoes can be an excellent source of income in the off-season when tomatoes are hard to come by. Still, the system of growing greenhouse tomatoes can be very different from those grown in the field, and can be a challenge, until you learn the differences of greenhouse growing. Dr. Rick Snyder from Mississippi State University has an excellent webpage full of resources and information on greenhouse tomato production at: http://msucares.com/crops/comhort/greenhouse.html.

On that page you will find a list of Frequently Asked Questions, as well as the Greenhouse Tomato Handbook, with a plethora of information on fertigation, pest management, greenhouse crop budgets, etc. He also provides links to other invaluable resources. The handbook is a comprehensive look at production information from growing media to leaf tissue analysis.

Dr. Snyder also puts on a 4-day long tomato greenhouse short course for producers as well as extension folk each year. The next one will be held March 4-7, 2008 in Jackson, MS. The first three days, Tuesday through Thursday, will be seminars, with a greenhouse tour on Friday. This will be the 18th year this program is being provided for growers. Last year, growers came from 26 states and several countries. The Short Course this year is supported by a partnership agreement with the USDA Risk Management Agency. Part of this funding is being used to cover the expenses for training Agents and Specialists from Arkansas, Louisiana, Kentucky, Tennessee, and Mississippi. By implementing this “train the trainer” technique, they hope to extend the information presented into the counties of this 5-state region.

Here is the link for the short course: http://www.msstate.edu/dept/cmrec/ghsc.htm. Closer to home, Dr. Carl Sams in the Plant Sciences Department here at UT has a greenhouse production program. He has three state-of-the-art greenhouses in Crossville at the PREC. Dr. Sams has studied production programs for tomatoes, and this year on cucumbers and strawberries. Right now, there are softball-size tomatoes getting ready to ripen and both English and mini-cucumbers by the box full in the greenhouses. Stay tuned, as the Sams Lab is close to launching their own greenhouse website, with information and resources especially for Tennessee producers.

Hydroponics (Continued from page 2)

Preparing for future growers

many high schools across our country.

Liberty High School in Jackson, Tenn., has received numerous awards and honors for the hydroponic program. Approximately 10 percent of the enrollment chooses to participate in this department. Program director Teresa Crouse says, “Through this program, students discover that agriscience is their choice for a career. It helps them make important, life-changing decisions about their future.”

A timer controls the watering system in the greenhouses. An automatic shade cloth opens at 7 a.m. and closes at 7 p.m. Appropriate protective gear such as glasses, gloves, mask, respirator and disposal suit are donned before spraying or dispensing chemicals. During the summer, when school is not in session, the greenhouses are solarized to kill bacteria. Greenhouse technician Tammy Nanny said, “When possible, we buy from local vendors to save on shipping. Stuppy installed the greenhouses, fan, everything except the tables. CropKing supplied the hydroponic equipment, timers, buckets and some other items. "The program at Liberty is run like a business," says Crouse. "The plants we sell go to purchase material and supplies for the department. For the most part, we are self-sufficient." Crouse noted that many students are members of the Future Farmers of America (FFA) and have received honors in floriculture and horticulture, soil testing, public speaking and leadership skills. I’m continually searching for new and improved ways to teach hydroponics and agri-science.

The author writes from Jackson, TN.

This article originally appeared in the September 2007 edition of GROWING SOUTH and is reprinted with permission. For more information and a free subscription, please visit www.growingmagazine.com or call 1.800.422.7147.
Upcoming Events

**NCSU Growing and Marketing Local Foods Workshop Series**, October 17, 24 and 31 and November 7 and 14, 2007, Roxboro, NC
Topics in the series will include Buying Locally to Promote the Local Food Concept, How the Energy Outlook is Raising the Stakes for Local and Organic Food Production, Staggered Planting and Season Extension Techniques, Organic Vegetable Production in North Carolina, and Starting and Managing Your Produce Enterprise: Marketing, Post-harvest Handling, Insect and Disease Identification and Control. The cost for the entire series is $25.00 per person. This includes lunch during the first session and a notebook with workshop materials. No discounts for those who don't fully participate. Pre-registration is required to guarantee you a seat. For more information, contact Carl Cantaluppi at 919-603-1350 or e-mail at carl_cantaluppi@ncsu.edu or visit [http://durham.ces.ncsu.edu/index.php?page=events&event_id=9938](http://durham.ces.ncsu.edu/index.php?page=events&event_id=9938).

**22nd Annual Sustainable Agriculture Conference**, November 9-11, 2007, Durham, NC
Pre-register by November 2, 2007 to guarantee your spot at the conference. For program and registration information, visit [http://carolinafarmstewards.org/](http://carolinafarmstewards.org/).

**Deep South Fruit & Vegetable Conference & Trade Show**, December 5-6, 2007, Mobile, AL
For more information, contact John Braswell (phone 601.403.8939, email braswell@ext.msstate.edu) or visit: [www.deepsouthfruitvegetable.com](http://www.deepsouthfruitvegetable.com).

**National Potato Council Seed Seminar**, December 6-8, 2007, Branson, MO
The National Potato Council will hold its annual seed seminar at the Chateau on the Lake in Branson, MO. For more information, contact Hollee Alexander at hollee@nationalpotatocouncil.org or (202) 682-9456.

**International Irrigation Show**, December 9-11, 2007, San Diego, CA
For details, call 703.536.7080 or visit [http://www.irrigation.org/](http://www.irrigation.org/).

**CANCELLED Tennessee Fruit and Vegetable Association Convention**, December 9-11, 2007, Nashville Airport Marriott, Nashville, TN

**22nd Annual Southeast Vegetable and Fruit Expo**, December 12-13, 2007, Myrtle Beach, SC
Contact Cathy Price at 919.334.0099 or fax 919.877.0940 or visit: [www.ncvea.com](http://www.ncvea.com) for more information.

**Application of Precision Agriculture for Fruits & Vegetables**, January 6-9, 2008, Orlando, FL
The event will be held at the Grosvenor Resort in downtown Disney World. For more information, including a list of discussion topics, visit [http://www.precisionag2008.com](http://www.precisionag2008.com) or e-mail iinfo@precisionag2008.com.

**Southeast Regional Fruit and Vegetable Conference**, January 10-13, 2008, Savannah, GA
For more information, contact Rebecca Smith (phone 877.994.3842 or visit: [www.gfvea.org](http://www.gfvea.org).

**Southern SAWG Annual Conference**: Practical Tools & Solutions for Sustaining Family Farms, January 16-19, 2008, Galt House, Louisville, KY
For more information, visit the SAWG website: [http://www.sawwg.org/](http://www.sawwg.org/).

**3rd Annual Agritourism Conference**: Cultivating Farm Revenue, January 17-18, 2008, Paris Landing State Park, Buchanan, TN.
Conference details will be made available in the next few months and will be posted on the Center for Profitable Agriculture’s Web site at [http://cpo.utk.edu](http://cpo.utk.edu).

**World Ag Expo**, February 12-14, 2008, Tulare, CA
For more information, visit [http://www.worldagexpo.com/](http://www.worldagexpo.com/).

**Winter Vegetable Conference and NC Tomato Growers Meeting**, February 21-22, 2008, Asheville, NC