What’s new?

UT Welcomes New Organic Extension Specialist

The Department of Plant Sciences is pleased to welcome Dana Saywell as the new UT Organic Extension Specialist. As the Organic Specialist, Dana will coordinate the development of a state-wide extension program in organic agricultural production, focusing on fruits and vegetables. This program will include the creation of the Tennessee Organic Agriculture Consortium, a collaborative network of growers, university researchers, extension specialists, industry, and government to address critical issues in organic agriculture across the state.

She will also build a comprehensive website with:

- Organic educational materials and resources
- Results of organic demonstration and trial plots from across the state
- Funding opportunities in organics for producers and consortium members
- Consortium member contact information.

Dana will also be instrumental in organizing a twelve-part, yearlong lecture and hands-on demonstration series for commercial growers wanting to learn how to “grow organic”. Workshops will cover organic opportunities in Tennessee, transitioning to organic, what you need to know about organic certification, how to market organic products, as well as the nuts and bolts of record keeping and production issues, such as seed supplies, fertilizer, crop rotation and pest management.

Trends of Small Scale Organic Producers. While pursuing her degree in England, she also served as a U.S. Rotary International Ambassadorial Scholar, promoting international understanding and goodwill.

She currently manages Green Knees Farm in Rockford, TN, a collaborative effort to develop a diversified, sustainably managed, organic farm on 32 acres in the foothills of the Smoky Mountains with her parents and husband, Chris. Current farm projects include developing farm infrastructure, soil management and improvement using cover crops and green manures, beekeeping, pastured poultry, orchard development and woodlot management.

In addition to her agricultural experience, Dana has experience in community development and website design and management.

Dana’s wealth of experience and breadth of knowledge make her an asset to the blossoming UT Organic Program. This statewide organic agriculture initiative is a cooperative effort between the University of Tennessee and the Tennessee Department of Agriculture.

Dana Saywell can be reached by calling 865.974.7208. Email soon to follow.
This article originally appeared in the May 2008 Issue of Spudman. While it focuses on potato, beneficial insects and nematodes are an important pest and disease control measure in any crop.

Every field is teeming with life – from nematodes to bacteria and fungi to insects – and there’s a benefit to keeping it that way. There are often too many beneficial organisms lost during a broad-spectrum chemical application, so Bill Snyder, a professor of entomology at Washington State University, recommends using selective insecticides and biological controls to kill the bad bugs while preserving “the beneficials.”

Parasitoid wasps are beneficial insects because they kill aphids that can introduce disease to potato plants. The wasps can also affect aphid behavior, with dying aphids flying to a “safe” location out of the field before dying. Spiders and predatory insects like ladybugs, damsel bugs and praying mantises are generalists that kill a range of potato disease vectors.

Snyder conducted a study of “hard” broad-spectrum chemicals, selective “soft” chemicals and organic treatments and their effects on green peach aphid, Colorado potato beetle and beneficial insect populations.

The hard chemicals almost completely wiped out the beneficial big-eyed bugs in the test plots. The densities of big-eyed bugs in the organically treated fields were 10 to 20 times those in the hard chemicals, and the selective treatments were almost as good as the organic treatments, Snyder said. Damsel bugs fared about the same as big-eyed bugs in the research.

The fields treated with organic and soft chemicals had fewer aphids than test plots treated with hard chemicals. That is probably because the larvae survived the broad-spectrum treatments and there were no predators to kill them when they matured, Snyder said. Eliminating the predators allowed the green peach aphid populations to recover, resulting in a higher population in the hard-chemical treatment fields.

All three treatments controlled Colorado potato effectively, but population densities were lower in soft and organic treatments.

Moving away from broad-spectrum chemicals will allow beneficial insects to survive and supplement the chemicals that are being used. That’s essentially the goal of an integrated pest management program, Snyder said, and it will be even more important in the future as buyers are more concerned about the environment, sustainability and residues.

“The challenge is to find ways to take advantage of biocontrol,” Snyder said.

The other side of the biocontrol coin is the microscopic nematodes that also play a part in killing disease vectors, as well as play an important role in soil health. Nematodes are usually considered a bad thing, and that’s true when talking about plant parasitic nematodes like root lesion nematode, golden nematode or potato cyst nematode. But the use of beneficial nematodes – called entomopathogens – can supplement an IPM program and reduce the amount of chemicals needed. Currently, adding nematodes to a field is expensive, although there are researchers working on nematode treatments. Currently, maintaining soil health and not destroying beneficial nematodes is a better alternative, Snyder said.

To read more from Spudman, visit their website: http://www.spudman.com/pages/about.php.
Question of the Week

Q: I have very healthy looking tomato plants, but no blossoms or fruit. What’s going on?

A: There are several factors that can contribute to this problem. With the unusually hot weather we had several weeks ago, this would be the most likely culprit. Tomatoes like hot weather, but not too hot. If it’s too hot (or too cold), tomatoes will not set fruit. When the daytime temperatures climb above 95°F, many tomatoes will have difficulty or fail to set fruit. Even more critical is the nighttime temperature. Tomatoes prefer nighttime temperatures between 59-68°F. When nighttime temperatures remain above 70°F, many varieties fail to set fruit.

In Tennessee, it’s not uncommon to have high temperatures during fruit set, so what can you do? There are varieties that have been bred for heat tolerance for both commercial producers and home gardeners. Solar Fire is a heat tolerant variety bred at the University of Florida. While it has heat tolerance, it is also a bit soft, so would work better as a local market tomato rather than a shipper. Solar Set, Sunmaster & Heatwave II are older heat tolerant varieties. Florida 91 and Sunleaper were shown to perform well in the heat in high tunnels. Creole is a heat tolerant variety for the home garden.

A couple of other environmental factors can inhibit fruit set: too much water or not enough water. If there is excessive rain during flowering (as we experienced right before the unseasonably warm weather this spring), pollen grains can clump together and this prevents proper pollination. Low humidity (rare in TN) and drought can also contribute to poor fruit set. Make sure to keep your tomatoes adequately watered.

Another common cause of blossom drop or failure to set fruit is excess nitrogen. When you have nice, dark green, vigorous plants with little or no fruit, overfertilizing could be the cause. These overly healthy plants are putting all of their energy into the vine. Every plant needs nutrients to grow, but don’t overdo it.

Lastly, light level can influence tomato fruit set. For those home gardeners that live in the city, continuous light can be a problem. When planning where to put your tomatoes, avoid sites that are under lights that remain on all night, such as security lights or street lights. While tomatoes do not like constant light, they do like full sunlight during the day. They will tolerate some shade, but too much will also cause poor fruit set.

The good news is that now that night temperatures are back down in that 59-68°F range and under 95°F during the day, tomato fruit production will pick back up.

Weather and Crop Report

The last few days have provided much of the state with some sorely needed rain. The rest of the week promises a reprieve from the heat with daytime highs in the 80’s and nighttime lows in the 50’s and 60’s. Chances for nighttime thunderstorms towards the end of the week.

Green bean harvests continue off the mountain and beans are currently bringing over $30/box.

Tennessee tomatoes continue to be top sellers, as the Salmonella outbreak drags on without resolution and consumers have confidence in local product.

This week at the Farmers’ Markets, there will be plenty of sweet corn for the 4th of July, as well as tomatoes, beets, carrots, beans, greens, potatoes, garlic and summer squash.

Speaking of summer squash, Dr. Steve Bost mentioned that cucurbit downy mildew has been identified both to the north and south of TN in last week’s issue of the Fruit Pest News. Several counties in Florida and southern Georgia, as well as one county in eastern Texas, western Louisiana, near Charleston S.C., and southern Ontario, Canada. Be on the lookout for downy mildew in your fields. If you find it, please report it.

In the Fruit Pest News, Dr. Bost also outlines a spray program for disease control in cucurbit crops. To learn more, visit: http://eppserver.ag.utk.edu/Extension/fpn/fpn062508.htm.
Upcoming Events

SSAWG Community Food Systems Training, July 21-23, 2008, Nashville, TN
The Community Food Systems Program of Southern Sustainable Agriculture Working Group (SSAWG) is holding its 2nd Annual Training Intensive in partnership with the Food Security Partners of Middle Tennessee. They are inviting individuals representing local food systems organizing to join them for 2.5 days of learning lead by some of the best minds in community food systems work. Pre-registration is required. For more information, visit: http://www.ssawg.org/events.html.

This annual event promises a program full of educational presentations, workshops, and walks for herb hobbyists, gardeners, and professional herb growers and practitioners. For more about the conference, registration information, and to learn how to join the NC Herb Association, visit http://ncherbossociety.com.

CFSA High Country Farm Tour, August 2-3, 2008, Boone, NC area
Sponsored by Carolina Farm Stewardship Association. For more information, visit http://carolinafarmstewards.org.

NCSU Specialty Melons Field Day, August 5, 2008, Kinston, NC
This field day begins at 4:00 PM at the Cunningham Research Station. It is sponsored by the NC Specialty Crops Program at NCSU. For more information, contact Horticultural Science Extension Specialist Jonathan Schultheis at Jonathan_Schultheis@ncsu.edu or Extension Associate Bill Jester at Bill_Jester@ncsu.edu.

NCSU Annual Tomato Field Day, August 7, 2008, Fletcher, NC
More information will be posted as it becomes available.

TSU Small farm Expo/Small Farmer Recognition Program, August 8, 2008, Ashland City, TN
More details to follow.

Pumpkin/Gourd Field Day, October 16, 2008, Mountain Research Station, Waynesville, NC
For more information, contact Department of Horticultural Science Extension Specialist Jonathan Schultheis at Jonathan_Schultheis@ncsu.edu.

Come to the inaugural joint meeting between the Tennessee Fruit and Vegetable Association, the Tennessee Viticulture and Oenological Society, the American Wine Society, The TN Farm Wine Association, the TN Flower Growers Association and the TN Farmers’ Market Association. This horticultural extravaganza will have the largest tradeshow in TFVA history, plus the added comradery of the other associations. Mark your calendar now! More details to follow.

2008 University of Tennessee Research and Education Center Field Days:
(For more information on any of these events, visit http://taes.tennessee.edu/dynamic/events.asp.)

Summer Celebration, July 10, 2008, West TN Research and Education Center, Jackson, TN

Tobacco and Forage Production Field Day, July 17, 2008, Research and Education Center at Greeneville, Greeneville, TN

25th Milan No-Till Field Day, July 24, 2008, Research and Education Center at Milan, Milan, TN

Steak and Potatoes Field Day, August 5, 2008, Plateau Research and Education Center, Crossville, TN

SPROUTS: Supporting Producers through Research and Outreach at UT
Programs in agriculture and natural resources, 4-H youth development, family and consumer sciences and resource development. University of Tennessee Institute of Agriculture, United States Department of Agriculture and county governments cooperating. UT Extension provides equal opportunities in programs and employment.