What's new?

Sweet potato chlorotic stunt virus (SPCSV) was detected for the first time in North Carolina. When found with sweet potato feathery mottle virus (SPFMV), this virus causes sweet potato virus disease (SPVD), a serious disease first described in Africa in the 1970s. Sweet potato chlorotic stunt virus is the part of the disease transmitted by the whitefly, while sweet potato feathery mottle virus is transmitted by aphids. The other report of SPCSV in the U.S. was from a single plant in the USDA Sweet Potato Germplasm Repository. There have been no other reports of SPCSV in the U.S. In both cases of SPCSV reported, SPFMV was also present. In 2001 & 2003, two samples of SPCSV were found in two different NC fields planted with 'Beauregard' sweet potatoes. Genetic testing determined that the samples were closely related and the U.S. population of the virus was not recently introduced. The symptoms of infected plants were those found for SPVD, including stunting, leaf narrowing and distortion, vein clearing, and chlorotic mosaic. When found in association with SPFMV, SPCSV can cause considerable yield losses in susceptible cultivars. The measures for control are using clean planting material and resistant or tolerant varieties. It can be transported by infected planting material and grafting but is not seedborne or likely to be transmitted by contact between plants. Vectors are the sweet potato whitefly (Bemisia tabaci) and the bandedwinged whitefly (Trialeurodes abutiloneus). While whiteflies are generally not a problem on sweet potatoes in TN, it is important to keep your eyes out for them, so that SPCSV does not become a problem here. Crop scouting and trapping are two important tools in your IPM program. Plants should be inspected for signs of whitefly infestation on both the upper and lower leaf surfaces. Scouting frequency should increase in warmer weather, as populations multiply faster under warm conditions. Trapping with yellow sticky cards are another good way to monitor the whitefly population. Control methods are the same as those for aphids and flea beetles under the 'Sweet Potato Insect Control' section of the UT Extension Publication PB 1282 Commercial Vegetable Disease, Insect and Weed Control. Methods for sustainable whitefly control can be found in ATTRA's Greenhouse IPM: Sustainable Whitefly Control (http://attra.ncat.org/new_pubs/attra-pub/gh-whitefly.html). Though this publication is for greenhouse control, many of the techniques can be applied in the field, as well.


Symptoms of sweet potato virus disease (SPFMV + SPCSV) in Uganda. For a magnified view, visit: http://www.nri.org/spv/

Vectors of SPCSV—sweet potato (above, photo from www.insectimages.org) and bandedwinged (below, photo from www.forestryimages.org) whiteflies.
On the Farm: Considering Organic? By Dr. Brandon Smith

You have probably at least thought about growing organic vegetables. There’s a lot of talk about organics lately, and it is no longer a fringe market – it’s mainstream. Since 1998, the U.S. organic industry has grown nearly 20% each year, and in 2005 sales of organic food reached $13.8 billion, about 2.5% of total U.S. food sales. Demand for quality organic produce is high, and supply is not keeping up with demand.

If you’ve gone further than just thinking about organic, and actually investigated the certification process, you might have concluded, like many other Tennesseans have: it’s not possible to get certified in this state. This is a common misconception, but is definitely not true. You can get certified in Tennessee.

The confusing issue is there aren’t any state or private certifiers physically located in TN. In fact, only 13 states have certifying agencies run by the State Departments’ of Agriculture. The remaining states rely on private, accredited organizations that operate on a regional or national level. It just so happens that none of these private certifiers are located in TN, so a cursory search for certifying agents in TN would lead you to believe that it is not possible to get certified here.

Truth is, there are a number of agencies that operate in TN. A few regional examples are: Indiana Certified Organic, Quality Certification Services (FL), and North Carolina Crop Improvement Association. The Organic Crop Improvement Association and Oregon Tilth are examples of national organizations that will work with Tennesseans. Once you’ve decided on a certifying agent, the next step is to download (or order) the application. As part of the application process, you will need to document your farm history (generally the past 3 years), and describe your farm plan for the upcoming year. The farm plan includes a map of the entire farm, locations of crops, rotation plan, sources of seed, pest management strategies, and methods of post-harvest handling and storage.

The farm plan needs to be in agreement with the USDA National Organic Program (NOP) standards. This document is published online (http://www.ams.usda.gov/NOP/NOP/standards/FullText.pdf), but it’s likely that you won’t find this 554-page government document too engaging. However, you can read most of what you need to know in these 3 sections: crop production (pp. 45-48), certification (pp. 398-407), and the national list of allowed and prohibited substances (pp. 425-431). I will provide more information about organic production practices in future issues of this newsletter.

Once the certifying agency determines that your application is complete and accurate, they will assign an inspector to come to your farm and do an on-site inspection. The inspector will verify the information you submitted in your application, and then report back to the certifying agency. Record keeping is the #1 problem in organic certification. HINT: if you are growing organically already – even if on only a portion of your farm – but have not yet become certified, keep a record of your production practices! The certification date is 3 years from the last application of a prohibited substance, and has less to do with the date you submit your application packet. And the distance between conventional and organic plots is pretty small (as little as 25ft.), so some areas of your farm could become certified before others.

There are 2 costs for certification. First, there’s the cost of the certification agency. This charge is based on your farm’s gross sales or land area. An example of the fee structure can be found on the QCS website (http://www.qcs.info.org/organiccert.htm). The second fee is for the on-site inspection. You will need to pay the inspector to come to your farm. Fees vary based on the distance the inspector has to travel. In general, the minimum cost for certification and inspection is $200 each. Pages S17-518 of the standards list the average costs based on the size of the farm. For small farms (< 25 acres, < $30,000 gross sales) the average cost was $579, and for medium farms (< 150 acres, < $200,000 gross sales) the average cost was $1,414.

Once you undergo the initial certification, you must be re-certified each year; generally this costs a little less because the certifying agent is already familiar with your operation. Don’t let the costs keep you from pursuing organic certification. TN has a cost-share program, and the TDA will pay 75% of the certification costs, up to $500. For more information, contact Linda Shelton at (615) 837-5160 or linda.shelton@state.tn.us.

Dr. Brandon Smith is a research scientist investigating organic and alternative crop production at the University of Tennessee. Author’s email: mith@mail.ag.utk.edu.
**Question of the Week**

Q: Will products like ‘Blossom Set’ keep tomato blossoms on longer so they have a better chance of being pollinated since there are fewer honeybees this year?  
- A.S.

A: The answer to this question has two parts. First, tomatoes, and other solanaceous plants like peppers, eggplants, and potatoes, require vibration for pollination. Therefore, they are dependent on the wind and bumblebees usually, rather than honeybees for pollination. Bumblebees have special features that adapt them for pollinating these flowers. First, bumblebees have longer tongues than domesticated honeybees, says Dr. John Skinner, UT Extension Entomologist and Apiculturist. Their tongues allow bumblebees to pollinate flowers that the honeybees cannot reach. Another characteristic of the bumblebees is their ability to release tightly held pollen from many important crop plants using sonic vibrations. This ability is known as “buzz pollination” or “sonication.” Using sonication, a buzzing bumblebee extracts pollen from tomato blossoms hundreds of times faster than a honeybee. Their high-pitched buzzes are produced by rapid contractions of their flight muscles, which are transmitted through the flowers releasing clouds of pollen. The bumblebee’s body fuzz captures this airborne pollen. Some of this pollen is gathered into “pollen baskets” on the bumblebee’s hind legs and delivered to the hive where the bees later eat it. Because bumblebees eat pollen in addition to nectar, they visit “buzz blossoms.” These blossoms produce no floral nectar as a reward for pollinators, so honeybees aren’t impressed and typically avoid these flowers.

To answer the second part of the question, ‘Blossom Set’ is a product that contains cytokinin, a natural plant hormone, and claims to promote blossom set and increase fruit yield. While it may increase blossom retention, under proper conditions (cool), it does not affect pollen formation and pollination. So, your best bet is to manage your field in a way that is favorable for the bumblebees—be selective when and what you spray on your crops.

For more information on bumblebee pollination, visit: “Why is that bee giving me the "raspberry?”” by Dr. Stephen Buchmann, USDA-ARS (http://gears.tucson.ars.gov/ci/buzzpol/buzzpol.html).

**Crop Report**

Planting across Tennessee is continuing fast and furious. The squashes, melons and cukes are getting into the ground, as well as more tomatoes, sweet corn, peppers, okra, beans, peas, and greens, and the list goes on. With all of these crops in the ground, growers need to be on the lookout for early season insect pests. ‘Newly emerged seedlings and young transplants are vulnerable to seed corn maggots, cutworms, flea beetles, slugs and cucumber beetles. Delayed planting may predispose some vegetables to more pest damage,” says Dr. Ric Bessin, University of Kentucky Extension Entomologist. But delaying planting until conditions are favorable for rapid seed germination can also reduce losses to other pests, such as the seed corn maggot.

He cautions that growers not using an insecticide at planting should consider using treated seed to prevent stand loss from seed corn maggots. These maggots attack corn, bean, melon and pea seeds. “They can be particularly serious in low, wet areas of a field with high amounts of decaying organic matter,” he says.

For other insect pests you should watch for, read his article ‘Watch Those Young Seedlings Carefully’ in this week’s edition of the ‘Kentucky Pest News’ at: http://www.uky.edu/Ag/kpn/kpn_07/current.htm.

Do you have a vegetable question?  
Send it to: awszelak@utk.edu.
Weather Report

The weather has been hot and dry. We could sure use some rain to water in all of the crops that have been planted. The next couple of days give us some hope of rain with a good chance of a thunderstorm. After that, the rain should clear out and leave us with sun and a few clouds the rest of the week. Temperatures will also drop a bit, with high’s next week right around 80 for most of the state. Low’s will range from the mid-50’s to 60’s. As Dr. Steve Bost mentioned in this week’s edition of the ‘Fruit Pest News’, rainfall totals for all TN stations for the March through April period of 2007 was 46.5% of average. Dry springs such as this can lead to problems with insect-transmitted diseases like tomato spotted wilt virus and aphid-borne mosaic viruses. These diseases are difficult to control with insecticides and may require planting of resistant varieties.

To read all of the ‘Fruit Pest News’ this week, visit: http://web.utk.edu/~extepp/fpn/fpn050807.htm.

Upcoming Events

Fresh-Cut Produce Hands-On HACCP, May 15-17, 2007, Athens, GA
For details, call 706.542.2574 or visit http://www.foodprotection.org.

Organizing A Local Foods Cooperative Workshop, May 17-19, 2007, Oklahoma City, OK
For more information, visit http://www.oklahomafood.coop/2007workshop.php.

North Carolina Potato Association Annual Meeting, May 21, 2007, Elizabeth City, NC
For details, email Tommy.Fleetwood@ncmail.net.

Tennessee Agritourism Association Meeting, June 11, 2007, Amazin’ Acres, Sparta, TN
Contact Vera Ann Myers for more information at verann@xtn.net.

Blooms Days Garden Festival and Marketplace, June 23-24, 2007, East Tennessee Research and Education Center, Knoxville, TN

Tobacco, Beef and More, June 28, 2007, Highland Rim Research and Education Center, Springfield, TN

Summer Celebration, July 12, 2007, West Tennessee Research and Education Center, Jackson, TN

National Association of County Agriculture Agents Annual Meeting/Professional Improvement Conference, July 15-19, 2007, Grand Rapids, MI

Steak and Potatoes Field Day, August 7, 2007, Plateau Research and Education Center, Crossville, TN

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

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

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.