SPROUTS
Tennessee Vegetable News
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What’s new?

• Potential new biological control agent from Maryland mountain soils
  A bacterium, Chromobacterium subtsugae sp. nov., living in soils filled with decomposed hemlock leaves has been revealed as a potentially powerful biological control of gypsy moth, small hive beetle and Colorado potato beetle.
  Three USDA scientists from the Agricultural Research Service’s Insect Biocontrol Laboratory in Beltsville, MD and a chemist at the Sustainable Agricultural Systems Laboratory in Beltsville made the discovery of this new bacterial biocontrol species. The bacterium was found in central Maryland in the Catoctin Mountain region.
  In laboratory studies, they found that 50% of small hive beetles died within 5 days when fed a pollen-based diet containing the bacteria, and the survivors weighed only 10% as much as small hive beetles that weren’t exposed to the bacteria.
  While tobacco hornworm and gypsy moth weren’t killed by the bacteria, their weights were drastically reduced due to feeding inhibition by as much as 75% compared to the weight of those not fed the bacteria.
  The researchers are now working to isolate the toxin from the bacteria.
  This story was adapted from the 05/23/07 Industry News in ‘The Grower’ at: www.growermagazine.com.

• Appalachian Harvest Packing and Grading Facility Fire
  On Tuesday, May 16, the Appalachian Harvest packing and grading house in Lee County, Virginia burned down. The group had just finished a major expansion and renovation project that had increased the size of their facility to over 10,000 square feet of packing space, along with 2,000 feet of loft storage and coolers. They lost the entire structure, plus all of their grading equipment, computers and office equipment, and an inventory of almost 40,000 boxes and hundreds of thousands of labels.
  Of course this is a major setback for Appalachian Harvest and Appalachian Sustainable Development. They are, however, moving forward. ASD staff, along with their supermarket customers and the nearly 60 farmers that are part of the network, are all working together to figure out a short, medium and long-term plan that will enable them to rebound, rebuild, and continue to expand this extraordinary organic production and marketing system.
  For more information and to learn how you can help, please visit: www.asdevelop.org.
  This story was taken from the Southern Sustainable Agriculture Working Group Newsletter, Volume 3, #4 May 2007: http://www.ssawg.org.

• Update on Colorado potato beetles, squash bugs, flea beetles, and potato leafhoppers
  In this week’s addition of the ‘Fruit Pest News’, Dr. Frank Hale provides management tips for these four vegetable insect pests from what symptoms to look for to what and when to spray and other control methods.
  To read this article and the rest of the ‘Fruit Pest News’, visit: http://web.utk.edu/~extepp/fpn/fpn.htm.
On the Farm: Creating Pollinator Habitat

Bee pollinators were responsible for roughly $20 billion in agricultural revenues in North America in 2000. Due to pests, diseases, disorders, extreme weather conditions (recent examples include the late freeze this Spring and the current drought), pesticide use, habitat destruction, and decreased landscape diversity, pollinators in the U.S. and abroad are declining. Many fruiting vegetables, such as squash (see the ‘Question of the Week’, page 3), rely on these pollinators in order to produce viable fruits. A decline in pollinator presence can lead to a lack of or incomplete pollination, causing reduced yields for growers. Providing a season-long flowering habitat for these pollinators can increase their vigor and populations, thereby increasing the potential for pollination, fruit set, and yield of vegetable crops nearby. In addition, to honey bees, many native bees are important for crop pollination. In fact, there are approximately 4,000 species of native bees in North America. Native bees even have some advantages over honey bees, like:

- Many native bee species forage earlier and later in the day than honey bees.
- Native bees will often visit flowers in wet or cold conditions when honey bees remain in the hive.
- Native bees can make honey bees more effective crop pollinators by causing them to move more often between male and female plants.

So, what can you do to attract and keep these native bees on your farm?

• Foster diversity in riparian buffers.
Make sure that the habitat along streams contains a variety of plants. Willows, for example, feed bumble bee queens in the spring so that a large population of workers is available when crops bloom.

• Allow some fields to go fallow.
Even small areas of fallow, especially sown with native flowers, provide important food and shelter sources for native bees.

• Protect natural or undeveloped areas.
Natural areas close-by may give refuge to all the native bees required to pollinate your crops. Talk to your neighbors about helping to conserve these habitats.

• Create natural or artificial nesting sites.
Standing dead trees serve as nesting sites for some native bees. Also, you can make bee blocks for wood-nesting bees to increase their populations on your land.

• Choose pollen and nectar rich cover crops.
Flowering cover crops can be a great supply of pollen and nectar, especially certain legumes, like Crimson clover.

• Conserve the soil from newly dug ponds and ditches.
Some ground-nesting bees build nests in undisturbed, mounds of soil, like those created when excavating a pond or ditch. Leave a pile of soil for bee nests.

• Reduce management next to field and road edges.
By not spraying or tilling the areas next to the field, you will encourage a diverse mix of flowering plants and establish nest sites for ground-nesting bees.

Weather Report

I think Tim Campbell, Dyer Co. Agent and County Director, summed it up best in this week’s USDA TN Crop Weather Report:

"Dry! Dry! Dry! Send rain!"

Well, it looks like Tim, and the rest of us, just might get that wish! Hopefully, we will catch some of the rain from the Tropical Depression ‘Barry’. Thunderstorms are in the forecast for the next few days and then it’s back to partly cloudy skies for the rest of the week, with an increase in temperatures towards the end of the week. Temperatures will remain in the mid-80’s for the high, until the end of next week, when temperatures will be nearing 100! Low’s will stay in the mid-60’s.

Until you see the rain in your own field, keep that irrigation coming! Minimizing plant water stress will not only help growth, but will also help the plant’s ability to ward off insects and diseases. Keep the water off the leaves and on the ground for the maximum benefit. And keep those rain dances going and fingers crossed!
Question of the Week

Q: My yellow squash are getting about 2 inches long and then they fall off the plant. The plant looks healthy. What is going on?
-T.S.

A: It sounds like your squash plants are experiencing incomplete pollination. Squash, and other members of the Cucurbitaceae family (pumpkins, melons, and most cucumbers), are insect-pollinated. These crops produce separate male and female flowers on the same plant and so they rely on the insects to carry the pollen from the male flower over to the female flower. The most important pollinators of squash are bees—both honey bees and native bees. Several factors can contribute to incomplete pollination, including:

1) **Pesticides.** As these pollinators are benefiting your crop, by ensuring its pollination, you want to make sure that you are not harming them. Many chemicals that you apply to control pests can also kill your bees.

   **What to do:** Choose insecticides that are least toxic to bees, and apply them late in the day when bees are not actively working.

2) **Weather.** High temperatures, shade, and lack moisture often result in pollen that does not behave normally and causes a lack of fruit development and poorly developed or shaped fruits.

   **What to do:** While we can’t control the weather, we can help the lack of moisture. Be sure to keep your squash crop well-watered.

3) **Habitat.** As more and more land transforms from ‘natural landscapes’ to ‘urban landscapes’, more native bee habitat is lost. These bees rely on a season-long supply of pollen and nectar, in order to build strong populations that will in turn pollinate your crop at the proper time.

   **What to do:** You can plant ‘pollinator habitat’ or border crops next to your main crop to make the area near your field a haven for these pollinators. If you provide a habitat that is conducive for the pollinators, they will repay you in higher crop yields. For more information on creating a pollinator habitat, see the ‘On the Farm’ section on page 2.

For more information on pollination, visit the UGA Extension Publication, “Pollination of Vegetable Crops” at: http://pubs.caes.uga.edu/coespubs/pubcd/L232.htm.

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

Crop Report

This week I visited several farms in Dyer, Lauderdale, Haywood and Tipton Counties. Most folks there seem to have wells that are keeping their vegetables alive. At Pictsweet, they are harvesting English peas and getting ready to harvest greens. Field tomatoes in West Tennessee need a week or two more before they will be ready to start picking. Cabbages this year are some of the biggest and most insect-free that I’ve ever seen. The yellow squash and zucchini crop is certainly abundant. And some, including Wayne Oswald from Peach World in Haywood Co., are growing unique varieties, like ‘Eightball’ zucchini, which as the name implies, is round instead of the traditional elongated shape.

Wayne says that the key is to grow what the customer wants. In addition to peaches, he grows an array of eggplants, as well as heirloom and hybrid tomatoes, peppers, beans, cabbage, and squash, of course. Planting continues for tomatoes, corn, southern peas, & beans. A grower in Tipton County was out planting his beans following the full moon. “Forget the calendar,” he says. Watching the moon is still the best method to ensure a good bean crop for him. Who can argue with over 60 years of experience?
Upcoming Events

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

20th Missouri Agribusiness Academy Tour, June 11-15, 2007, Various locations across MO
For more information, call 573.751.4561.

Southeast Greenhouse Conference, June 20-23, 2007, Greenville, SC
For more information, call 1.800.453.3070, or visit www.sgcts.org or email smolnar@asginfo.net.

Blooms Days Garden Festival and Marketplace, June 23-24, 2007, East Tennessee Research and Education Center, Knoxville, TN
For more information, visit http://bloomsdays.tennessee.edu/.

12th Annual Mountain Farm and Garden Tour, June 23-24, 2007, surrounding Asheville, NC
For more information, visit: http://www.carolinafarmstewards.org.

Tobacco, Beef and More, June 28, 2007, Highland Rim Research and Education Center, Springfield, TN
For details, visit http://agriculture.tennessee.edu/news/releases/0705-HRREC%20Field%20Day.htm.

Sunbelt Ag Expo Field Day, July 10, 2007, Moultrie, GA
For more information visit www.sunbeltexpo.com or call 229.985.1968.

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

Building and Sustaining Effective Community Food Projects- A Training Facilitated by Southern SAWG, July 25-26, 2007, Nashville, TN
For more information, contact Keith Richards at keith@ssawg.org or 479-587-0888.

2007 Annual Small Farm Expo/Small farmer Recognition Program, August 2, 2007, TSU Research and Demonstration Farm, Ashland City, TN
For more information and registration, contact Hilda Gooch at 615.963.5530 or agooch@tnstate.edu.

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

Potato Association of America 91st Annual Meeting, August 12-16, 2007, Idaho Falls, ID
For details visit www.conferences.uidaho.edu/PAA.

Sunbelt Ag Expo—30th Anniversary Show, October 16-18, 2007, Moultrie, GA
For more information visit www.sunbeltexpo.com or call 229.985.1968.

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.