In This Issue:

1. Current Conditions and Alert
2. Plum Curculio
3. Oriental Fruit Moth and Codling Moth
4. Peach Disease Control
5. Honey Bees: Losses May Be Due to Stress
6. Pheromone Trap Catches and Biofixes

1. Current Conditions and Alert

ALERT: One of the warmest springs on record is about to be interrupted by a 1-in-50-year cold event for the date. For most of the state, temperatures forecast for Thursday through Monday mornings will cause severe losses on unprotected fruit crops. For much of the state, freeze protection will not be adequate for the predicted temperatures. Check the following table of critical temperatures for your fruit crop at its current stage of growth: [http://www.aces.edu/dept/peaches/frzcritical.html](http://www.aces.edu/dept/peaches/frzcritical.html). Temps will be as low as 20 F at Bristol on Easter morning. Check the forecast for your area, but be ready for the long haul, as the system will last for five mornings.

The following article, [http://www.smallfruits.org/SRSFC_News/StrawberryPlasticultureAdvisoryApril1505.pdf](http://www.smallfruits.org/SRSFC_News/StrawberryPlasticultureAdvisoryApril1505.pdf) contains useful information on freeze protection for low-growing crops such as strawberries, in which row covers are an option.

The following article contains principles of freeze protection for larger-statured crops, in which other methods of protection are needed: [http://www.cals.ncsu.edu/hort_sci/fruit/winegrapes/winegrapes11.pdf](http://www.cals.ncsu.edu/hort_sci/fruit/winegrapes/winegrapes11.pdf)

The freakish weather has produced the following development stages on April 3 at Nashville: peaches - shuck split, apples - late bloom, blueberries - late bloom, blackberries - prebloom, grapes - prebloom. The most unusual are the blackberries and grapes, which are a month ahead of normal. (SB)
2. Plum Curculio

Most plum curculio adults overwinter outside the orchard in debris on the ground in wooded areas or hedgerows. They usually start to migrate to host trees from bloom time to petal fall. This migration can continue for up to six weeks after bloom although the largest part of this movement occurs within 14 days after petal fall. Feeding on apple fruit causes roundish, russeted bumps while the egg laying causes a crescent shaped scar that expands and becomes more fan-shaped as the fruit grows. The eggs laid in apples that remain on the tree are crushed by the growing apple and do not produce larvae. Larvae can develop in stone fruit. Petal fall and first and second cover sprays are very important in controlling this pest. (FH)

3. Oriental Fruit Moth and Codling Moth

Oriental fruit moth and codling moth are two other pests that can be very damaging to developing fruit. Oriental fruit moths have become more important in apples in recent years. In apples, apply a recommended insecticide between 500 and 600 degree days (DD) after biofix for control of the first generation oriental fruit moth caterpillars.

For codling moth, eggs begin to hatch around the time of the first cover spray. The larvae tend to quickly tunnel into the fruit. If using Intrepid, Rimon, or Esteem for first generation codling moth, 2 applications should be made at 14-day intervals, the first at 100-200 DD. Do not use Esteem more than twice per season. CYD-X is a virus that only controls codling moth larvae. Applications on a 7-10 day interval at low rates (1 to 2 oz per acre) have worked well in field trials in the Southeast. (FH)

4. Peach Disease Control

Many peach cultivars are now at the shuck split stage. Fungicide applications for control of peach scab should begin at the shuck split to shuck fall stage, about one week after petal fall. Do not wait until all the shucks have fallen to make this application. Scab pressure is greatest from shuck split through 2nd or 3rd cover because scab spore counts are high during this time and the cool, wet weather that occurs during this time favors infection. Continue on 10-day intervals until 40 days before harvest. Bravo cannot be used after the shuck fall stage. Captan, sulfur, Pristine, Flint, Scala, and Abound are other peach scab products. Pristine, Flint, and Abound are strobilurin materials and should be rotated with non-strobilurin products that have scab activity, such as captan or sulfur.

Shuck split is also the time to begin bacterial spot sprays on susceptible varieties. Mycoshield should be applied every 10 days until 3 weeks before harvest. (SB)
5. Mystery Illness Linked to Bee Losses May Be Stress

There is a buzz among the nation's beekeepers, but it's not the result of the annual spring awakening of their bee colonies.

Beekeepers in 22 states have reported the collapse of large numbers of honey bee colonies as warmer temperatures prompt the beekeepers to examine over-wintered colonies for the first time in spring. In some cases no adult bees were found in the colony, and few if any dead bees had built up in front of the colony. Colony collapses were first reported in 2006, and already reports are rolling in for the 2007 season.

University of Tennessee Extension entomologist and apiculturist John Skinner cautions against panic, however. “We do not know if Colony Collapse Disorder is present in Tennessee at this time,” he said. “Some beekeepers have discovered losses higher than normal, while others have lost only a few colonies from definable causes.”

According to Skinner some experts are even questioning the existence of the disorder. “There is much confusion about this disorder because no causative agent has yet been discovered. It's been labeled a “mystery killer” and the “AIDS” of beekeeping, but this statement only stirs emotions without justification.”

Honey bees play an important economic role in agriculture. Nationally, the insects serve as pollinators of numerous crops valued in excess of $14 billion annually. In Tennessee, Skinner says the value is more like $67 million. Crops include fruits and vegetables - practically everything from apples to blackberries, pumpkin, squash, cucumbers and beans. Commercial beekeepers offer pollination services by transporting their colonies to contracting farms.

"Many growers and even home gardeners have realized that by adding colonies of honey bees during bloom of their crop, they can increase yields substantially," says Skinner.

CCD was first reported by a migratory beekeeper who annually moves 3,000 colonies of bees from Florida up the east coast to pollinate oranges, apples, blueberries, cherries and pumpkins. An average colony can include as few as 6,000 individuals in the winter, but populations swell to more than 50,000 in the summer months. In October, 2006, the beekeeper discovered he had inexplicably lost two thirds of his bee colonies.

About the same time, beekeepers from other states started to report unusually large colony losses, too. “Up to and exceeding 50 percent of their colonies were gone,” said Skinner.

Skinner says researchers and regulatory agencies are looking for a causative agent or for a combination of agents. Possibilities including bacteria, fungi, protozoa, viruses and other cumulative stresses. “While I don't want to discount the possibility of a new disease, we may just have an over-stressed bee population,” he said.

In some cases of collapsed or collapsing colonies, the presence of tracheal and Varroa mites has been verified. “If you add stresses due to frequent moving, fluctuating temperatures, and the presence of
chemical contaminants that may have accumulated over time in the wax comb, then the picture is not clear,” Skinner said. “Multiple stresses can cause colony mortality.”

Gray Haun, apiary program administrator with the Tennessee Department of Agriculture, says it is not unusual for state beekeepers to lose up to 20 percent of their colonies annually due to parasitic mites. “Beekeepers should use best management practices such as those listed in the Extension publication *Beekeeping in Tennessee*. One of these practices is removing one-third of their old, drawn brood combs and replacing them with frames with new foundation each year.” The use of the right chemicals according to label instruction is also very important, Haun said.

Earlier this year a group of scientists and apiculturists formed a working group to study CCD. They agreed on symptoms for the disorder and together with Bee Alert Technology, Inc (BATI), the group is asking beekeepers to report suspected instances of CCD. Beekeepers wishing to participate in the survey, should visit the Web site: [www.beesurvey.com](http://www.beesurvey.com)

Skinner recommends that Tennessee beekeepers watch their colonies' activities and monitor for Varroa mites using ether/sugar rolls or sticky board traps. “They should also be feeding colonies that lack sufficient honey stores,” he said.

Tennessee keepers wishing to monitor for microscopic tracheal mites should take a sample of quick-killed bees (60+), placed in 70% rubbing alcohol (enough to cover), and sealed in leak-proof, unbreakable container to the local county UT Extension office. The sample will then be sent to the bee laboratory at the University of Tennessee. The cost per sample is $15. Please call (865) 974-7138 before sending the sample.

*Beekeeping in Tennessee* (Extension publication 1745) is available on the Web at [http://utextension.tennessee.edu/publications/pests/default.asp#beekeeping](http://utextension.tennessee.edu/publications/pests/default.asp#beekeeping). Interested parties may download it for free or purchase a printed copy for $10.

For more information, contact John Skinner at jskinner@utk.edu.

### 6. Pheromone Trap Catches and Biofixes (FH)

Nashville (Davidson County) Pheromone Trap Catches for 2007

<table>
<thead>
<tr>
<th>OFM</th>
<th>RBLR</th>
<th>OBLR</th>
<th>CM</th>
<th>GBM</th>
<th>VLR</th>
<th>BCW</th>
<th>DBM</th>
<th>AW</th>
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<tbody>
<tr>
<td>2-22 (caught one RBLR in last year's trap) put out new trap</td>
<td>--</td>
<td>1</td>
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<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
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</tr>
<tr>
<td>2-26</td>
<td>--</td>
<td>0</td>
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<td>--</td>
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</tr>
<tr>
<td>2-28</td>
<td>--</td>
<td>1*</td>
<td>--</td>
<td>--</td>
<td>1</td>
<td>--</td>
<td>--</td>
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http://eppserver.ag.utk.edu/Extension/fpn/fpn040307.htm (4 of 6)12/6/2012 4:08:00 AM
Bradley County Pheromone Trap Catches for 2007

<table>
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<th>OFM</th>
<th>CM</th>
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<td>3-26</td>
<td>1</td>
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Putnam County Pheromone Trap Catches for 2007

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<th></th>
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<th>VLR</th>
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<tr>
<td>3-19</td>
<td>1</td>
<td>9*</td>
<td>0</td>
<td>4***</td>
<td>0</td>
</tr>
<tr>
<td>3-21</td>
<td>1**</td>
<td>3</td>
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<td>2</td>
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<td>14</td>
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*Biofix for RBLR in Putnam County estimated as March 2 (trap not out early enough).
**Biofix for OFM in Putnam County March 21.
***Waiting to verify biofix for CM, many unknown moths being caught in these traps that can easily be mistaken for CM.

Obion County Pheromone Trap Catches for 2007

<table>
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<tr>
<th></th>
<th>OFM</th>
<th>RBLR</th>
<th>OBLR</th>
<th>CM</th>
<th>VLR</th>
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* Biofix for RBLR in Davidson County was February 28.
** Biofix for OFM in Davidson County was March 26.
<table>
<thead>
<tr>
<th>Date</th>
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<tr>
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<td>89</td>
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*Biofix for RBLR in Obion County estimated to be on March 2 (trap not out early enough).
**Biofix for OFM in Obion County on March 26.

The *Fruit Pest News* URL is: [http://web.utk.edu/~extepp/fpn/fpn.htm](http://web.utk.edu/~extepp/fpn/fpn.htm)

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