1. Current Conditions

Weeks of benign weather and good rainfall are making for good fruit crop potential. Hopefully, there will be reduced disease pressure because of less inoculum buildup during last year's drought. See Dr. Hale's article below for silver linings to last April's freeze. Peaches at Nashville are at petal fall, Golden Delicious apples are at pink tip, Tifblue blueberries at early bloom, blackberries at 2-inch shoot growth, and grapes at budbreak. Canker diseases are going to be a problem for trees this year, following the drought stress of last year. Fungal cankers are more severe on drought-stressed trees and tend to show their effects in the year following the stress factor. There is a chance of frost at higher elevations on Sunday morning. (SB)

2. Peach Disease Control Reminders

Your trees are probably not yet at shuck split, and fungicide sprays applied at petal fall are of little to no value for scab control, but don't be late with your shuck split spray. Damage caused by peach scab infections that occur because of a lack of protection cannot be undone. Curative fungicides applied within 3-4 days of an apple scab infection are effective in arresting its development, but not so much with peach scab.

If you use copper, take steps to reduce phytotoxicity chances. At petal fall, the rate should be no more
than 0.5 lb metallic copper equivalent (e.g., 1.25 lbs Kocide 2000). At shuck split, the rate falls to 0.10-0.25 lbs metallic copper. The copper rate is reduced further at each growth stage because each stage is more sensitive than the previous. Apply copper only under good drying conditions and adjust spray tank water pH to 6.5 or higher. (SB)

3. Fungicides for Pears

We don't have a pear industry in the Southeast sufficient to justify the production of a spray schedule. However, there are a few trees, and some growers have noticed that the captan label does not include pears. This registration was lost as a result of the special review for this product. Captan is a very valuable fruit fungicide considering its broad spectrum of control and its freedom from resistance concerns. What should you use in its place on pears?

Commercial growers have several options -- Ziram, Topsin M, and the strobilurin products Sovran, Flint, and Pristine are broad-spectrum fungicides that would be suitable for use on pears during the spring or summer. Ferbam is also labeled but is not sold in Tennessee. Scala, Vangard, Procure, Rubigan, and mancozeb can be used during the spring, when the primary target would be pear scab. Mancozeb and maneb are sold in small containers for homeowner use, but cannot be used on home fruit trees. For home pear trees, copper and sulfur would be the only fungicide choices. (SB)

4. Strawberry Disease Reminders

Strawberries in full bloom plus rainy weather = Botrytis problems. They may not show up until harvest, but you need protection now. Keep up your fungicide spray program as best as you can. Elevate, Switch, and Scala are the best botryticides and are in different FRAC groups. It is best to rotate 3 different classes for resistance management.

If anthracnose is expected, include an appropriate fungicide in the schedule. If you are one of the few who were affected by the *C. gloeosporioides* type of anthracnose, your strategy will not differ appreciably from that of *C. acutatum* control -- basically, captan and strobilurins. The effects of Switch on Cg are not known. See the March 19 issue for details. (SB)

5. Tips for Fire Blight Control During Bloom

The bloom period is a key time for fire blight management in apple and pear. It is during bloom that the most damaging of the fire blight infections take place. It is also the time at which streptomycin (Agri-
mycin, Firewall, Streptrol) sprays are most effective . . . in fact, we no longer recommend streptomycin after bloom (unless there is a hailstorm) because of its lack of effectiveness against the shoot blight phase. The following points should help you to use streptomycin efficiently.

- Streptomycin works best when applied alone (not tank mixed with fungicides), under slow-drying conditions. The addition of a surfactant may improve its effectiveness.
- Streptomycin only protects open blossoms. Those that are not yet open need to be sprayed when they open. It is for this reason that sprays must be applied every 3 to 5 days during bloom, unless you are using the MaryBlyt program to guide you.
- Only fire blight-susceptible varieties need to be sprayed with streptomycin. This differs from the strategy for the use of delayed dormant copper sprays. Copper should be sprayed on all blocks in the orchard, because the objective is to kill epiphytic (on plant surface) fire blight bacteria. These can occur and multiply on the surface of any tree, resistant or susceptible. For a bacterium to infect a blossom and cause disease, however, the variety must be susceptible. Streptomycin is used to protect blossoms from infection, not to kill epiphytic bacteria.
- Streptomycin is most effective when applied the day before, or the day of, an infection. However, if you miss an infection period, you can still obtain some benefit. Streptomycin applied up to 48 hours after infection is better than no treatment. (SB)

6. What Level of Insect Pest Pressure to Expect in 2008?

The effect of the Easter freeze of 2007, which devastated most fruit crops in Tennessee, may have a silver lining in 2008. The drought was so severe that if trees had carried a crop last year, they would have been even more stressed and many more trees might have died. Also, direct fruit pests such as codling moth, plum curculio, and apple maggot need fruit for the larvae to feed and develop. Without commercial fruit, backyard fruit, or even wild host plants producing fruit last year, the levels of many of these direct fruit pests should be greatly reduced in 2008. The Oriental fruit moth is also a direct fruit pest but it can tunnel near the end of succulent cherry, pear, and cherry in May, June and July. This ability to develop for several generations without fruit will probably allow Oriental fruit moths to better survive the adverse conditions. Thus, populations of Oriental fruit moths should still have the potential to cause significant damage this year. We will know much more about current pest populations as we record pheromone trap catches this spring and compare them to past trap catches.

The potential for low pest pressure for several of the key pests may make this a good year to try mating disruption of codling moth and Oriental fruit moth, especially on apple where codling moth is usually considered the number one direct fruit pest.

In apples, Oriental fruit moth is much easier to control with mating disruption compared with codling moth. While moderate to high codling moth populations require that both mating disruption and insecticides should be used, low codling moth populations should not require the addition of an insecticide with the mating disruption. Mating disruption will not control infestations resulting from
immigrating fertilized female moths; hence, mating disruption alone is not recommended in blocks located adjacent to a likely source of immigrating moths such as abandoned orchards or bin storage areas. Note that mating disruption is effective only in blocks of 5 acres or more.

In apples, place codling moth pheromone (mating disruption) dispensers in the orchard before adults begin to fly in the spring and should be completed by no later than petal fall. Dispensers should be hung in the upper third of the canopy, because this is where mating occurs.

Season-long Oriental fruit moth mating disruption dispensers should be in the orchard around green tip of 'Delicious' apple cultivars. If insecticides are used for other pests at petal fall, this spray application should control first generation Oriental fruit moth. Thus, mating disruption of Oriental fruit moth can be delayed until just before emergence of the second or third generation adults (950 and 1850 DD after biofix, respectively).

In peaches, Oriental fruit moth mating disruption is effective only in blocks in excess of 5 acres with low populations. A one-year transition from insecticide only to a combination of insecticide and mating disruption may be required in situations with moderate to high Oriental fruit moth pressure. Accurately time insecticide sprays targeted at larval populations in April and May. Then, before moth flight begins in mid to late May, place in the upper third of trees 100 of the Isomate-M100 per acre for Oriental fruit moth (gives 90 days of control). A second application of Isomate M100 may be needed in early August. Monitor for fruit damage weekly, especially at the edge of the orchard where migrating females may lay eggs. Apply insecticides to areas or blocks with damage. (FH)

### 7. Pheromone Trap Catches

The biofix for RBLR at the Nashville location was March 13. Black cutworm, Oriental fruit moth, codling moth, obliquebanded leafroller, and variegated leafroller pheromone traps were put out at the Ellington Agricultural Center in Nashville last week. No moths have been caught yet. (FH)