

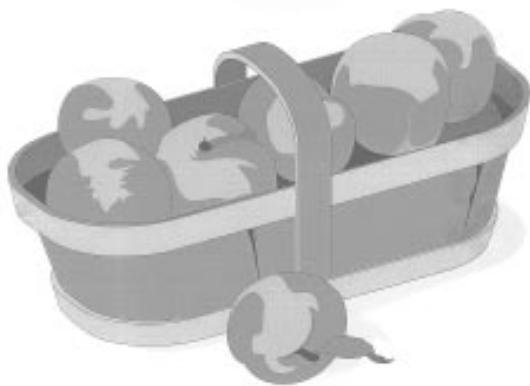
PLANT & PEST ADVISORY

FRUIT EDITION \$1.50

JULY 8, 1997

Summer Fusicoccum Management

Norman Lalancette, Ph.D., Tree Fruit Pathology



Many peach and nectarine orchards in New Jersey are now showing considerable shoot death and fruit loss from fusicoccum canker. The majority of infections that took place last fall and this past spring have girdled the shoots, resulting in dead or blighted branches. Any fruit distal to the cankers on these shoots has already fallen off or remains attached, slowly drying up and shriveling.

◆ Breaking the Disease Cycle

Although infection is minimal at this time, the cankers on these shoots are a major source of inoculum. Spores from these cankers will initiate infections on this year's new growth during the post-harvest leaf drop period. These newly infected shoots which are to bear fruit next season, will then die next summer, producing yet another "crop" of cankers to continue the disease cycle.

There are two ways to halt the disease cycle. The first method is to apply fungicides during any potential infection periods during the spring (see Spring Fusicoccum Control in Apr. 22 issue of P&PA) and post-harvest periods. The second method is to remove as much inoculum as possible, thereby reducing the likelihood and amount of infection that does take place. Given that neither of these approaches are 100% effective, both methods should be employed to obtain maximum control.

◆ Cultural and Labor Management

The obvious way to reduce inoculum is to prune out any cankered shoots. What is not so obvious is that the timing of this pruning operation is critical. If pruning is done too early, as I noticed last season, then many of the small, non-girdling cankers are missed! Early pruning may only remove half of the cankers, which is insufficient to have any effect on managing the disease.

So, why not wait and let the majority of the cankers kill the shoots so they're easy to find? In the meantime, any inoculum from these cankers will not cause new infections during the summer. Furthermore, since fusicoccum canker does not invade older branches, as does the cytospora canker fungus, you do not need to be concerned with major limb loss.

Pruning out diseased shoots takes a lot of man-hours and effective training. First, for reasons stated above, prune as late as possible during the summer, but prior to leaf-fall. Second, make sure workers cut 2-3 inches below the canker. I actually saw cuts above cankers! The dead shoots were gone, but the sporulating cankers remained! And, finally, prune during dry weather so that the cuts have time to heal before other

SEE FUSICOCIMUM ON PAGE 2

INSIDE

Summer Fusicoccum Management	1
Renovating Chandler Strawberries for a 2nd Harvest Season	2
Skin Discoloration in Peaches	2
Cider and Packing House Food Safety	2
NJ Peach Festival	3
The Plight of the Honeybee ...	3
Fruit IPM	4

Renovating Strawberries for 2nd Harvest

Peter R. Probasco, Salem County Agricultural Agent

Now that the strawberry harvest is over, it is time to renovate Chandler fields for next year. To do this you should mow off the fields about one inch above the plastic mulch. Now you are ready to thin the field to three crowns by cutting away about half the plant with an asparagus knife. This can be done by cutting down and to the side with the asparagus knife so as not to injure the remaining crowns of the strawberry plants. In research trials at the Rutgers Research and Extension Center in Bridgeton, we have been able to harvest 17,000 pounds of marketable strawberries the second season when they are renovated. The fruit will be slightly smaller than a new field of Chandlers but still very marketable.

One of the main costs in growing Chandler strawberries is the cost of the plants (17,400 plants/acre). With proper renovation after the harvest season, a grower can renovate a field for about \$500/acre. This is a low cost way to save a field for the second season. You still need to fertilize, spray for insects, diseases, and weeds, and winter protect with a row cover.

After renovating, you should turn on the drip irrigation for several hours to get the plants growing again. Once new growth has started, a disease spray for leaf spots should be applied (Benlate, Syllit or Topsin M). The renovated field should look fine by September when new fruit buds will begin again. □

FUSICOCCUM FROM PAGE 1

pathogens can enter the tissue.

One final comment: don't worry about identifying fusicoccum canker for the pruning operation. There's dead shoot tips from winter injury and from bacterial spot, as well as blossom blight cankers. It won't hurt to remove these as well! In fact, pruning out the blossom blight cankers, some of which are sporulating now, will help reduce brown rot inoculum during the preharvest fruit susceptibility period. □

Skin Discoloration in Peaches

Jerome L. Frecon, Gloucester County Agricultural Agent

Skin discoloration is also called inking or black staining. It is a frequent problem in all peach producing areas. Because of our very dry summer, precautions should be followed to avoid a flare-up. According to Dr. Carlos Crisosto, University of California Cooperative Extension Postharvest Physiologist, and Dr. Tony Hopfinger, former Rutgers Cooperative Extension Specialist in Pomology, the following practices are recommended:

Since any abrasion renders the fruit more susceptible, treat fruit gently. Do not harvest in the rain and avoid hauling fruit long distances and over bumpy roads. Keep picking containers free of dirt and avoid dust contamination. Use harvesting equipment that reduces bruising and keep the equipment clean.

Since heavy metals like iron, copper, and aluminum have been implicated, avoid spraying them during the final swell or fruit maturation process. Check the pH of the hydrocooling and grading water to maintain neutrality and reduce metals if the water is contaminated (ag agents have info on this). Dr. Crisosto also has found certain fungicides contaminated with heavy metals and has requested manufacturers remove these contaminants. Until this is done, he recommends the following pre harvest interval for these fungicides:

- Z.I.P.^r - 25 days;
- Benlate^r - 12 days;
- Rovral^r - 7 days;
- Funginex^r - 3 days;
- Ronilan^r - 1 day;

Also, follow label precautions with copper compound used to control bacterial spot.

Varieties with dark red skin color are prone to more skin discoloration.

Dr. Crisosto also recommends that in conditions of possible high incidence of skin discoloration that packaging be delayed 48 hours after grading to reduce the shipping of fruit with possible problems. This is probably very difficult for many packing houses. □

Cider and Packing House Food Safety

Jerome L. Frecon, Gloucester County Agricultural Agent

The June issue of [Great Lakes Fruit Growers News](#) is an important issue for anyone in the cider business. If you don't subscribe or have access to this paper, important news about cider/food safety is part of the WWW page for the Virtual Orchard at: <http://orchard.uvm.edu/>.

The articles contained are: "Cider House Safety Rules"; "Earth-bound Food Safety Has Space Age Origins"; "State Responses Center in Education Setting Standards"; and "Where to Obtain Cider Malerno Equipment".

There is no doubt the cider farm industry is going to be watched closely and monitored for its food safety practices. □

New Jersey Peach Festival

Jerome L. Frecon, Gloucester County Agricultural Agent

Each year the New Jersey Peach Promotion Council along with the New Jersey Peach Festival Association sponsors a festival to promote peaches and educate people about the peach industry. This year "the Festival" will be held on July 24th, 25th, and 26th at the Mullica Hill 4-H Fairgrounds on Route 77 near Mullica Hill, New Jersey in conjunction with the Gloucester County 4-H Fair. Southern New Jersey Peach growers/shippers will receive a separate letter informing them about the festival. If you do not receive this letter, please contact my office at (609) 863-0110 and we will mail you information about the festival.

Part of the festival's educational exhibit is the Grower/Shipper Pack Competition. The rules of this competition will be the same as in 1996. We need all growers/shippers participating to educate and promote peaches.

There are 4 categories of competition: Commercial, Select, Specialty and Largest. Only the winner of the Commercial category will be eligible for the Governor's Cup, symbolic of the best box of peaches packed by a grower/shipper. We are emphasizing this because it truly represents how a grower/shipper packages his peaches for the wholesale market. Each winner in a category will get a \$50 gift certificate at one of four popular restaurants in southern New Jersey. Packs in the Commercial, Select and Specialty can be either 1/2 bushel (22 to 25 pounds) or in the 3/4 bushel category (38 to 40 pounds).

The Select category will consist of yellow fleshed peaches in both packs hand selected and packed for the festival. In both categories three classes of peaches will be judged: a 2 3/4 inch and up, and a 2 1/2 inch and up, and a 2 1/4 inch and up. Each class winners receive a 1st, 2nd and 3rd place ribbon and plaque.

The Specialty category will consist of two classes: white fleshed peaches, and nectarines-white or yellow fleshed. Both can either be in a 1/4 bushel pack (12-14 pounds) or 1/2 bushel pack (22-25 pounds). First, 2nd and 3rd place ribbons and plaques will be awarded in each class.

The final category will be the Largest Peach. This category will consist of only one class in which a 1st, 2nd and 3rd place ribbon and plaque will be given.

All peaches in the Commercial category will be picked by myself and Linda Vorsa, consultant to the New Jersey Peach Promotion Council and Treasurer of the Peach Festival Committee, no earlier than 24 hours before judging on Thursday, June 24th at 4 p.m. All other packs for the categories can be picked up at the same time or delivered to the festival judging tent. All fruit will be judged by inspectors from the New Jersey Department of Agriculture - Jersey Fresh Quality Grading Program.

All awards will be presented on the main stage Friday, July 25, 1997 between 5 and 7 p.m.

There will also be a wide variety of peach educational displays and other events, fresh peaches, peachy goods and peach foods at the festival. □

The Plight of the Honeybee

Peter W. Shearer, Ph.D., Tree Fruit Entomology

Honeybees pollinate about \$10 billion worth of crops annually, making them important contributors to agriculture. However, a recent United States Department of Agriculture (USDA) Agricultural Research Service (ARS) bulletin reported several disturbing facts about the honeybee. First, about 50% of commercial hives were lost during recent years because of **tracheal** and **varroa mite** infestations. Additionally, mite attacks and the cold 1996 winter combined to kill about 90% of wild honeybee populations in some areas of the country. The result is that honeybee populations have declined tremendously.

Fortunately, USDA ARS researchers have found what appears to be a promising tactic for reducing the impact of the **varroa mite**. They discovered that by installing starter sheets (the plastic honeycomb sheets that honeybees use to make cells for brood and honey storage) with smaller cells than those normally used, honeybee survival increased in **varroa mite** infested hives. Researchers are also trying to develop strains of mite-resistant honeybees.

New Jersey farmers can also help the honeybee. Farmers should remove flowering weeds that may capture insecticide drift and notify area beekeepers before applications of bee-toxic insecticides are made. Remember, PennCap-M can no longer be applied in New Jersey fruit orchards if flowering weeds are present in the ground cover. □

Fruit IPM

Dean Polk, IPM Agent, Fruit

◆ Peach

Oriental Fruit Moth (OFM) and Catfacing insects:

The second adult OFM flight is peaking. Second flight eggs are being found and are hatching at this time. Any farm with trap counts above 6 to 8 moths per trap should be applying insecticide for OFM. If trap counts represent minimal insect populations, then no insecticide is needed for OFM. If catfacing pressure is also minimal, then insecticide can be either deleted or alternate middle applications stretched to 10 to 12 days between sprays on mid to late season varieties. Unfortunately, catfacing insect pressure from both tarnished plant bugs and stink bugs continues in many orchards. About half our sample sites show catfacing insect activity, with fresh injury present in a few areas. Continued dry weather tends to make peach fruit more "inviting" to the insects as weeds in the ground cover dry up.

Thrips (western flower thrips and flower thrips):

Clover in the cover crop is again a nuisance in this case. We are finding many thrips in clover cover crops. Try this quick sampling method in irrigated blocks where the clover is still lush. Gently pick 6 to 10 flower heads with stems, and beat them against a horizontal flat white surface. You will probably see a number of small yellowish insects 1/16" long. There may be several species of thrips in your sample, the 2 most common being flower thrips and western flower thrips. Western flower thrips is usually the more injurious insect. Thrips will cause injury both during shuck split to shuck fall, and again during final swell (silvering injury). The last 1 to 2 weeks before picking is the most critical time when this silvering injury occurs, particularly for nectarines. Treatments were listed in a thrips article in a previous edition.

Tufted Apple Budmoth (TABM): Treatments that targeted the first generation TABM are over. While adults may be still found in pheromone traps, no fresh egg masses have been seen. Most larvae are half grown at this point.

◆ Apple

Tufted apple budmoth (TABM): Larvae have been found in about half the blocks sampled in the Gloucester to Cumberland County area. Some locations had from 3 to 4% fruit injury. As first generation larvae mature and feed more on the fruit, the level of fruit injury will increase. It is almost impossible to contact the larvae with insecticide at this point. Therefore growers with TABM problems should plan on high volume Lannate sprays or Confirm for the second generation. Pyrethroids used after mite pressure has dissipated in August is another possible choice.

Codling moth (CM): While insect pressure is low on most farms, insecticide for CM should be included when

trap counts exceed 5 moths per trap per week. One block was seen in Gloucester County with a low percentage of injured fruit.

Spotted Tentiform leafminer (STLM): Trap captures from the second adult flight are still high. Timing for treating the second brood is now in Mercer County and north, as most of the miners are in the sap feeding stage in those areas. When most of the larvae are sap feeders and there is a total count of .5 to 1 mine per leaf, treatment is suggested.

Aphids (apple aphid, spirea aphid): Aphid colonies are still present and have increased some. Growers should delay treatment until at least 50% of the terminals are infested. Small numbers of aphids on the fruit for a short period of time does nothing to detract from yield or quality. Aphids should be tolerated to a degree, especially since populations should decrease from the hardening of plant tissue over the next couple of weeks.

Leafhoppers: Nymphs of what looks like white apple leafhoppers are starting to appear in a number of blocks. As these develop, two rows of spots will become visible on the dorsal surface of older nymphs. These are second generation rose leafhoppers (RLH), dispersing in from multiflora rose and other wild hosts. The first generation is found on multiflora rose and brambles. Damage will appear identical to that caused by white apple leafhopper (WALH). A combined threshold of 3 leafhoppers per leaf is our treatment level.

Mites: Red mites have increased in a number of red delicious and other blocks. Predators have kept up with ERM in some cases, and in others they have not. Where Pyramite is used the full labeled rate for ERM goes from 4.4 to 6.6 oz/A concentrate, or up to 8.8 oz/A dilute. In most cases, growers are using 4.4 oz in 100 gal of water per acre. Higher rates are needed if the target is twospotted spider mite, or a concentrate rate of 6.6 to 13.2 oz/A.

SEE IPM ON PAGE 5

Tree Fruit Pest Degree Day Accumulations Since 1st Catch - 6/30/96

Site	Biofix/1 st Catch Date & DD - TABM		Biofix/1 st Catch Date & DD - CM	
Hammonton - At. Co.	5/2	1330	5/9	968
Hardingville - Glou. Co.	4/30	1361	4/30	1034
Bridgeton - Cumb. Co.	5/1	1361	5/2	1022
Princeton - Mercer Co.	5/12	1194	5/5	947
Oldwick - Hunt. Co.	5/17	1098	5/16	846
Hackettstown - War. Co.	5/22	1013	5/9	876
Spray target after biofix/1st catch	Alt Mid Appl. at 490 (0-5% hatch), 625 (25-30% hatch), 763 (50-55% hatch), 898 (75-80% hatch) (1st brood), and 2228 (0-5% hatch), 2415 (25-30% hatch), 2605 (50-55% hatch), 2795 (75-80% hatch) (2nd brood)		250 DD plus 2 weeks later (1st generation), 1250-1300 DD plus 2-3 weeks later (2nd generation)	

◆ **Blueberry**

Leafrollers and other Lep's: The Obliquebanded leafroller (OBLR) flight has peaked in both Burlington and Atlantic Counties. Females deposit up to 900 eggs on the upper leaf surfaces. These are hatching now, with larvae completing their development by mid to late July. Redbanded leafroller adults are also laying eggs, with larvae completing development slightly later in the month.

Aphids: Aphid populations have increased and are present in about 66% of our samples. We sample aphid populations as a percent of new growing terminals that are infested with 1 or more aphids. We have seen a tendency on several farms where Elliott is more heavily infested than other varieties. This may be partially due to the fact that Elliott has shown a more vigorous growth habit, with more fresh growing shoots per bush. On 1 farm Bluecrop fields showed almost 0% infested terminals while Elliott fields showed up to 10% infested

terminals. Coincidentally, that same farm has an Elliott field heavily infected with scorch disease.

Sharpnosed leafhopper (SNLH): First generation SNLH adults have peaked, although we should still see activity over the next several weeks. Treatments applied for blueberry maggot and aphids should also target SNLH at this time.

Blueberry maggot: Adults are present at very low levels in managed fields, although some managed sites have up to 4 to 5 maggot flies per trap. Populations in wild sites are still increasing, thus peak activity has not been reached.

Mummy berry and Anthracnose: Mummy berry is present in harvested fruit in about 33% of our samples, but at low levels. Anthracnose infested fruit has been noted in only 1 site to date. Post harvest berry samples are being collected from as many sites as possible to analyze for insects and disease incidence.

◆ **Trap Averages**

South Jersey Tree Fruit

Week Ending	RBLR	STLM	TBM-A	CM	AM	OFM	TBM-P	LPTB	PTB
5/16	7.0	822	30.2	2.6	—	12.9	50.6	0.7	—
5/23	2.8	478	33.8	9.3	—	18.3	40.4	28.1	0.02
5/30	0.8	270	43.4	3.7	—	9.6	50.2	19.1	0.05
6/6	0.0	96	34.1	1.9	—	5.8	40.0	30.2	0.2
6/13	0.1	390	32.6	2.2	—	2.6	44.4	21.4	0.04
6/20	3.1	1036	58.0	4.9	—	5.4	74.3	19.9	0.5
6/27	26.9	1169	52.2	3.7	—	13.8	69.9	31.1	0.4
7/4	47.4	1517	45.9	1.9	.11	10.3	51.3	29.6	1.2

North Jersey Tree Fruit

Week Ending	RBLR	STLM	TBM-A	CM	AM	OFM	TBM-P	LPTB	PTB
5/16	10.7	902	1.0	1.3	—	6.0	0.1	0.1	—
5/23	2.0	157	1.9	1.2	—	4.1	0.6	0.9	—
5/30	2.4	252	5.8	2.6	—	6.7	2.6	0.5	0.1
6/6	0.3	26	3.0	3.1	—	4.8	2.3	5.3	0.6
6/13	0.05	268	8.4	3.5	—	4.2	6.8	21.6	1.5
6/20	0.1	374	21.1	5.5	0.0	2.5	19.2	22.3	1.5
7/4	1187	552	43.5	5.3	0.0	2.1	6.4	2.0	12.2

Blueberry

Atlantic Co.

Week Ending	RBLR	OBLR	CBFW	SNLH	BBM
5/16	7.4	0	0.5	—	—
5/23	1.5	0	2.6	—	—
5/30	0.5	0.5	12.0	—	—
6/6	0	3.1	8.1	—	—
6/13	0.2	8.3	2.2	0.0	0.0
6/20	35.1	14.0	0.6	0.5	0.0
6/27	105	13.4	0.6	1.8	.02
7/4	97	3.4	0	1.5	.04

Burlington Co.

Week Ending	RBLR	OBLR	CBFW	SNLH	BBM
5/16	5.6	0	0.3	—	—
5/23	1.8	0	0.9	—	—
5/30	0.06	0.4	5.6	—	—
6/6	0	0.4	2.9	—	—
6/13	0.8	6.1	2.2	1.5	0.0
6/20	4.0	12.8	0.8	2.6	0.0
6/27	36	6.5	1.1	2.9	0.3
7/4	47	1.8	.06	1.2	0

Wild Sites

Week Ending	At. Co. SNLH	Burl. Co. SNLH	At. Co. BBM	Burl. Co. BBM
6/27	—	8.7	—	0
7/4	13	14.7	0	11

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