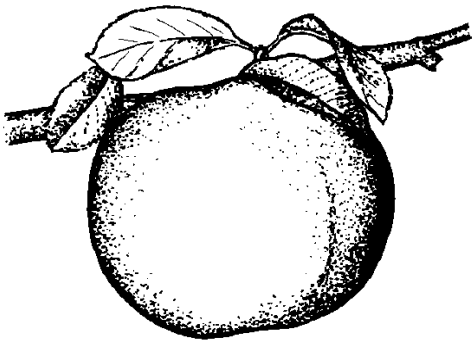
RUTGERS COOPERATIVE EXTENSION AT THE NEW JERSEY AGRICULTURAL EXPERIMENT STATION

PLANT & PEST ADVISORY

FRUIT EDITION $1.50 JULY 30, 1996



INSIDE

Nectarine Skin Disorder

Robert Belding, Ph.D., Pomology

Fruit injury has been observed on Summer Beaut and Eastern Glo nectarines. On Summer Beaut, the injury appears in a ring around the tip, and always on the bottom of the fruit. Injury is now becoming obvious because the area around the injured skin does not turn red leaving an obvious yellow ring. Eastern Glo damage is in a blush area rather than a ring. The blush is roughened, cracked skin with some loss of red color.

On both varieties, injury resembles russet found on apple, where cells below the cuticle have died and the plant responds with a callus growth. Wounded areas do not expand with growing fruit and cracks develop. The injury occurred early in development probably just after fruit emerged from the shuck.

Possible causes for this disorder this year include both weather injury and insect damage. Chemical injury has basically been ruled out due to the wide number of orchards affected and the mild chemicals used. The wet weather this spring resulted in greater than normal russetting on apple and one possibility is that this nectarine injury is similar to apple russet. Russet occurs when water from rain or dew enters the epidermal cells causing them to burst and die. The plant responds with a waterproof suberin layer which is the observed russet. It is possible that this disorder was caused by our unusual combination of water and changing temperatures.

On nectarines, thrips also cause skin injury when epidermal cells are pierced by feeding. Commonly, early season thrips injury results in a netting pattern and damage does not usually crack with expanding fruit. Late season damage takes on typical silvering of nectarine skin.

This is a banner year for rare disorders. We have also seen an unusual disorder on apples from central NJ, Monmouth and Mercer counties. Cracks or gaps on the calyx and sides of apples appeared early in the season. Unlike the more common lateral cracks (around) caused by frost or expansion, these cracks or gaps were longitudinal (top to bottom) and associated with seed. When explanations fails, blame the weather. Our weather this spring for a few weeks following bloom included wet, dry, hot and cold. ❑

Gleanings . . .

Rick VanVranken, Atlantic County Agricultural Agent

◆ NJ Farmers Against Hunger

The NJ Agricultural Society, in cooperation with Rutgers Cooperative Extension, The Bonner Foundation and USDA's summer AmeriCorps program, is sponsoring this program to glean and rescue surplus produce for distribution to those in need throughout New Jersey. If you have questions or would like to donate produce or volunteer with the program, call the NJ Farmers Against Hunger office at 1-800-809-9693. Transportation and containers for produce are available through the program.

◆ Wildlife Damage Control

The NJ DEP Division of Fish, Game & Wildlife announced a special September Canada Goose Season will be open statewide Sept. 3-30. The goose permit is available by sending a 3" x 5" index card with your name, full mailing address, EVENING phone number, and date of birth to: NJ Div. of Fish, Game & Wildlife, CN 400, Trenton, NJ 08625-0400, Attn. Goose Permits. Farmer deer permits are available at division offices as well as Rutgers Cooperative Extension county offices.

◆ Ag Export Market Potential

In case you missed one of the NJ Farm Service Agency sponsored seminars this past Monday, the USDA Foreign Agriculture Service (FAS) is bullish on ag exporting. Minister Counselor for Agricultural Affairs Frank Padavano, currently stationed in Rome, Italy, presented statistics about the growth potential of ag exporting at several stops across the state. While US consumption of ag products has remained almost level over the past ten years, the export market has almost tripled (exports of fresh fruits and vegetables and related products has more than tripled), and is expected to be quadrupled by the year 2000. The FAS produces a starter packet called the AgExport Action Kit available from AgExport Connections, FAS, USDA, AgBox 1052, Washington, DC 20250-1052, or you can visit them on-line at http://www.fas.usda.gov. ❑

Peach Tree Damage From Excessive Soil Moisture and Wind

Jerome L. Frecon, Gloucester County Agricultural Agent

Some vigorous and healthy young trees have been lost to recent heavy rainfall and wind. In most cases trees either snapped at the soil line, or fell over because of limited root development and anchorage. In examining the trees closely, it was obvious top growth far exceeded root growth, causing the trees to be very top-heavy.

Some of these young trees may have had "too much of a good thing". These good things were too much nitrogen and water, resulting in too much growth. This fast top growth may not be consistent with short or long term health and survival. These fast growing trees have less extensive root systems. Substantial root growth and carbohydrate storage do not occur until shoot growth slows. When fertilizer and water are plentiful, top growth receives priority and extends the growing season. This accelerated top growth utilizes the plant's resources leaving few to devote to the production of support structures like bark, lignin, and cellulose.

Greater care must be taken in reducing early heavy fertilizer application and directing excessive moisture away from the trunk by planting trees on a 6 inch berm. Accelerated growth in the nursery is handled by staking. This is probably not a cost effective process in our orchards. While mounding may provide some immediate support, it may have a negative result of reducing root growth. A partial mound may be an acceptable compromise with the anticipation of wind.

Central leader trained trees or those with untrained growth and nonselection of scaffold branches are more top heavy, and prone to breakage and falling. Trees with a "low head" through the selection of 3-4 scaffold branches are better able to cope with excessive wind and rain. ❑

Peach Prices Today and Yesterday

Jerome L. Frecon, Gloucester County Agricultural Agent

Most growers are packing and shipping fruit in 25 pound or approximately 1/2 bushel boxes. Some are shipping most of the 2 1/4 inch and smaller fruit in 38 pound boxes. Most fruit of US No 1 Extra is bringing at the point of first sale from $10 to $16 for 2 1/4 inch up, and $14 - $20 for 2 1/2 inch up. Even 2 inch up fruit is bringing about $8.00 to $12.00 per box. Looking at average prices per pound, this equates to .32 to .48 cents for 2 inch up fruit, .40 to .64 cents for 2 1/4 inch up fruit, and .56 to .80 cents per pound for 2 1/2 inch up fruit. These are pretty decent prices and hopefully will be as strong throughout the growing season.

One grower recently gave me his sales book from the 1978 sales season. Most peaches that season were being sold for the following prices: 2 inch up U.S. No. 1 Extra peaches were sold from $6.50 to $8.00 per 38 pound box or .17 to .21 cents per pound. 2 1/8 inch peaches were $11.00 to $12.00 or .29 to .32 cents per pound. 2 1/4

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Grower-Shipper Competition

Jerome L. Frecon, Gloucester County Agricultural Agent

The winners of the Grower/Shipper Competition at the New Jersey Peach Festival held last week were:

COMMERCIAL CATEGORY - Boxes of peaches in this category represent samples of peaches equivalent to those shipped to supermarkets and retailers. All entries were yellow fleshed peaches. Every winner in this category was a different farm. The rules were changed in 1996 to give everyone an equal opportunity to win the Governor's Cup.

2 1/4 inch & up diameter in size
1st Place - JerZee Orchards, Glassboro, NJ
2nd Place - Moods Orchard & Farm Mkt., Mullica Hill, NJ
3rd Place - Summit City Farms, Glassboro, NJ

2 1/2 inch & up diameter in size
1st Place - Anthony Curcio & Son, Hammonton, NJ (Best of Category)
2nd Place - Mt. Pleasant Orchards, Richwood, NJ
3rd Place - Lucy Grasso Farms, Mullica Hill, NJ

2 3/4 inch & up diameter in size
1st Place - Damminger Farms, Richwood, NJ
2nd Place - Circle M Farms, Mullica Hill, NJ
3rd Place - Larchmont Farms, Elmer, NJ

The highest score in this category is awarded the Governor's Cup. *Anthony Curcio & Son, Hammonton is the 1996 winner.*

SELECT CATEGORY - Boxes in this category are hand selected by growers for the competition and represent the very best quality. All entries were yellow fleshed peaches.

2 1/4 inch & up diameter in size
1st Place - Mt. Pleasant Orchards, Richwood, NJ
2nd Place - JerZee Orchards, Glassboro, NJ
3rd Place - DeCou's Hilltop Orchard, Shiloh, NJ

2 1/2 inch & up diameter in size
1st Place - DeCou's Hilltop Orchard, Shiloh, NJ (Best of Category)
2nd Place - Mt. Pleasant Orchards, Richwood, NJ
3rd Place - Lucy Grasso Farms, Mullica Hill, NJ

2 3/4 inch & up diameter in size
1st Place - Mt. Pleasant Orchards, Richwood, NJ
2nd Place - Donio Farms, Hammonton, NJ
3rd Place - Zee Orchards, Glassboro, NJ

SPECIALTY CATEGORY - Boxes in this category represent special varieties white fleshed peaches and fuzzless peaches called nectarines. Fruit can be hand selected by the growers.

Fuzzless peaches or nectarines
1st Place, Easternglo - Zee Orchards, Glassboro, NJ (Best of category)
2nd Place, Easternglo - Moriuchi Farms, Moorestown, NJ
3rd Place, Easternglo - Larchmont Farms, Elmer, NJ

White fleshed peaches
1st Place, LaWhite - DeCou's Hilltop Orchards, Shiloh, NJ
2nd Place White Lady - Circle M Farms, Mullica Hill, NJ
3rd Place, Lady Kim - Larchmont Farms, Elmer, NJ

LARGEST CATEGORY - Individual peaches in this category are hand selected by growers and individually weighed to determine the largest size and best score.

1st Place, 540 grams - Mood's Orchard & Farm Mkt., Mullica Hill, NJ
2nd Place, 450 grams - Damminger Farms, Richwood, NJ
3rd Place, 420 grams - (Two) Mt. Pleasant Orchards, Richwood, NJ; DeCou's Hilltop Orchard, Shiloh, NJ

All winners receive a ribbon and a plaque. The best score in each category wins a $50. dinner gift certificate. ❑

Prices from page 2

inch peaches were $12.00 to $13.00 or .32 to .34 cents per pound. Practically no 2 1/2 inch and up peaches were sold that year even in Rio and Jerseyqueen season. Over the years we've either learned to grow larger peaches or size them better.

While we are getting good prices today, I wonder if we made greater profits 18 years ago when peaches were priced at .17 to .34 cents per pound. ❑

Blueberry Pests

Sridhar Polavarapu, Ph.D., Entomology and IPM

Blueberry maggot (BBM): Trap catches of adults in abandoned fields in Burlington County have increased to an average of 106-146 flies per trap. Adult catches in commercial fields in both Atlantic and Burlington Counties have remained very low, averaging between 0-2 flies per trap. These low trap catches in commercial fields may reflect light pest pressure this year. Where trap catches have been low, growers should consider extending their insecticide spray intervals to 14 days.

Redbanded leafroller (RBLR): Moth catches in pheromone traps have started to increase in both Burlington and Atlantic Counties. This is the beginning of the third and last generation adult flight. The eggs laid by the third generation moths will begin to hatch in the second week of August. Larvae web leaves and ripe berry clusters together and feed by remaining inside this shelter. RBLR overwinters as pupa on the soil surface or in the leaf litter. RBLR larvae in this generation do not cause damage of any consequence. If insecticide use is withheld, natural enemies can greatly reduce RBLR larval populations in the third generation.

Sharpnosed leafhoppers (SNLH): The second generation of SNLH nymphs are now maturing into adults. Adults have been trapped from a few commercial fields in Burlington County. This is the very beginning of the second generation adult activity. Adult catches on the yellow sticky boards are not expected to peak for another 2-3 weeks. SNLH is the vector of the mycoplasma-like organism (MLO) that causes blueberry stunt. Growers should be on the look out for stunt infected bushes and remove them before the peak of SNLH activity. ❑

Fruit IPM

Week Ending 8/2/96

Dean Polk, IPM Agent - Fruit

◆ Apple

Spotted tentiform leafminer (STLM): Sap feeding larvae that progressed into tissue feeders last week are now emerging as adults. This is the start of the third adult flight. A number of farms have leafminer populations (in the leaves) above treatment level. This includes farms in southern and northern counties. Most of these blocks did not receive Provado or Agrimek earlier in the season. Treatment is advised only if the majority of miners are visible just from the underside of the leaf surface (sap feeding larvae), and if there is a total of at least .5 to 1 mine per leaf. Since most larvae are either tissue feeders or have pupated, now is not the time to treat for this insect.

Tufted apple budmoth (TABM): Trap counts of adult males have started to increase. This is the start of the second adult flight. Females are emerging along with males and will mate and lay eggs during most of August. Degree models predict that sprays should be applied starting at the end of this week in southern counties, and by the end of next week in northern counties. Since mites and mite predators should not be the concern that they were in June and early July we can use materials that are less selective, yet more effective for TABM control. Where TABM is a problem, Lannate @ 1 to 1.5 pt/A + an O.P. is suggested (Guthion @ .5 - .75 lb/A or Lorsban 50W @ 1 to 1.5 lb/A or Imidan @ 1 to 1.5 lb/A). Treatments should be applied every other middle about every 7 days. If significant rainfall occurs immediately after application, then re-application is suggested. A total of 4 alternate middle sprays is needed.

Codling moth (CM): Second generation codling moth sprays should have been applied starting last week. A second treatment (equivalent to both sides or a full spray) is usually needed 2 weeks after the first treatment. With frequent rains an additional application may be needed. If at least 1 full application was made, followed by 1 week of minimal precipitation, and subsequent trap counts are less than 5 moths per trap, additional applications are not justified. However in many areas in northern counties trap counts exceed 5 moths per trap, indicating pest pressure above treatment threshold.

Sooty blotch and Fly speck (and Scab): With the frequent rains, and warm humid weather conditions have been ideal for secondary summer scab infections and summer diseases. Some fly speck is showing up in both northern and southern counties. Fungicide combinations of Captan + Benlate are suggested for control. Research done in the Hudson Valley has shown that Benlate gives longer residual control that Topsin M. Therefore, 8 to 12 oz of Benlate plus Captan @ 3 to 4 lb/A is suggested. Growers with processing blocks and **White rot or Black rot problems** should use Captan (50W) at 6 lb/A (possibly 8 lb/A in full size trees).

◆ Peach

Oriental fruit moth (OFM): OFM adults are in their 3rd flight. Trap numbers on many farms are minimal, indicating low pest pressure. Exceptions include those areas near abandoned farms and poorly sprayed blocks.

Tufted apple budmoth (TABM): See apple section for TABM summary. **Lorsban 50W is not labeled for peach use.** Otherwise all suggestions for apples apply to peaches and nectarines.

Flower thrips and Western flower thrips (WT and WFT): Late season silvering, or thrips injury is present on nectarines in southern counties. WT and WFT have rasping mouthparts, and feed on the surface of the fruit skin during the final swell phase. Much of this feeding can be seen during the last week before picking. Both Carzol and Lannate are effective for thrips management, but only Lannate may

be used during final swell. Carzol has a 21 day PHI, while Lannate has a 4 day PHI on peaches and a 3 day PHI on nectarines.

Brown rot: Low levels of brown rot continue to be present on early varieties. Under our present wetting conditions and warm humid air, it is best not to base a program on sulfur. Captan at 4 lb/Ac (or higher in large thick trees) should be used on most varieties. Combinations using Captan + Rovral, Ronilan, Orbit, Indar or other SIs should be started *at least* 3 weeks preharvest. Please be aware of recent changes in the preharvest intervals for Rovral and Ronilan (repeat from 2 weeks ago). **Hail and peaches** - Some areas in the southern part of the State experienced recent hail storms. The standard recommendation has been to apply a systemic fungicide as soon as possible after the storm. Benlate @ 1 lb/A has been used in the past, but should not be relied upon given its history of resistance problems. If fruit was subjected to hail and had no protective fungicide cover, 1 application of Captan @ 3-4 lb/A + Orbit @ 4 oz/A is suggested. If the fruit did have a fungicide cover then Indar @ 2 oz/A may be used in place of Orbit. Rovral and Ronilan may also be used with Captan, but Orbit gives good after-infection control.

◆ Blueberry

Sharpnosed leafhopper: Trap catches are minimal at this time. Treatments for SNLH will not be a concern until the peak of the second adult flight during late August or early September.

Blueberry Maggot: Trap captures have decreased significantly over the past 2 weeks. However, significant populations are still present in abandoned fields. Trap captures in commercial fields have remained below 1 fly per trap on most farms. Laboratory counts of maggots in boiled berry samples have indicated "0" maggots in all sampled fruit, with the exception of 1 field.

Oriental Beetle: Adult activity is decreasing, with counts roughly half of what they were 1 to 2 weeks ago. Most eggs have been laid as larvae enter the ground and top root zone of the plant.

Anthracnose: Berry samples are being incubated and disease levels recorded over the length of the season. Recent data has shown that 15 samples out of 66 showed some level of anthracnose infection. The highest level recorded so far was 1.5% from a Burlington County field.

Insect Trap Captures

Wk Ending 6/21	6/28	7/5	7/12	7/19	7/26
Tree Fruit - Southern Counties					
RBLR	26.8	54.8	36.7	20.3	9.7	5.3
STLM	1876	1734	1071	854	1039	1476
TABM-A	59.4	37.4	10.7	4.8	6.7	19.1
CM	4.3	1.4	0.2	0.3	1.2	3.2
AM	1.0	0.0	0.1	0.0	0.13	0.0
OFM	8.4	8.0	3.7	2.9	5.9	5.6
TABM-P	46.3	30.0	8.6	9.7	7.7	20.0
LPTB	102.2	55.1	36.8	30.7	22.5	12.4
PTB	3.5	7.0	3.2	3.5	3.4	5.8
Tree Fruit - Northern Counties					
RBLR	9.8	25.5	19.2	8.4	0.4	17.6
STLM	1085	932	794	627	557	620
TABM-A	32.2	25.5	10.0	3.2	1.1	1.1
CM	11.5	7.5	5.1	2.4	6.1	7.6
AM	—	.04	.02	0.7	0.4	0.0
OFM	9.5	6.3	4.9	4.3	3.2	3.6
TABM-P	52.0	3.7	20.0	10.0	0.0	0.0
LPTB	74.8	30.4	9.5	9.8	7.0	18.7
PTB	13.2	16.3	8.0	6.2	4.1	9.3
Blueberry - Atlantic County					
RBLR	178	141	6.5	45.4	16.9	8.4
OBLR	31.0	15.0	2.3	0.8	0.7	3.0
CBFW	1.2	0.02	0.08	0.1	0.0	0.0
SNLH	2.3	2.1	1.2	0.8	0.2	0.3
BBM	0.2	0.16	0.2	0.3	0.1	0.1
OB	403	831	774	1451	1173	450
Burlington County					
RBLR	41.5	96	73.4	45.0	9.9	3.1
OBLR	46.5	21.4	7.0	1.0	0.3	0.9
CBFW	2.9	0.8	0.0	0.1	0.0	.08
SNLH	7.9	7.5	1.8	1.6	0.9	0.1
BBM	0.0	0.11	0.2	0.2	0.4	0.3
OB	—	509	449	840	663	356
Abandoned Fields (both counties)					
RBLR	38.3	70.0	47.0	34.0	10.0	8.0
OBLR	59.0	34.5	15.5	4.0	1.0	1.5
CBFW	1.7	0.0	0.0	0.0	0.0	0.0
SNLH	53.2	38.5	22.5	18.3	10.0	6.9
BBM	0.0	3.2	6.8	37.0	47.0	19.5
OB				435	191	122

Insect Degree Day Accumulations as of 7/29

Insect	Site & County Biofix Date plus Degree Days Since Biofix						
	Bridgeton Cumb.	Hammonton. Cam.	Hardingville Glou.	Richwood Glou.	Princeton Mercer	Oldwick Hunt.	Morristown Morris
OFM_{45}	4/20 hit 200 on 5/2 hit 400 on 5/19	4/5 hit 200 on 4/27 hit 400 on 5/13	4/19 hit 200 on 5/1 hit 400 on 5/18	4/17 hit 200 on 5/1 hit 400 on 5/18	4/19 hit 200 on 5/3 hit 400 on 5/19-20	4/22 hit 200 on 5/9 hit 400 on 5/22	4/24 hit 200 on 5/14 hit 400 on 5/24
$TABM_{45}$ 2nd Gen	5/4 - 2053 Predict 2228 about Aug 3	5/3 - 2062 Predict 2228 about Aug 3	5/2 - 2078 Predict 2228 about Aug 4	5/2 - 2081 Predict 2228 about Aug 3	5/13 - 1899 Predict 2228 about Aug 10	5/20 - 1762 Predict 2228 about Aug 15	5/23 - 1637 Predict 2228 about Aug 15
CM_{50} 2nd Gen	5/8 - 1598 hit 1250 on 7/15	5/8 - 1598 hit 1250 on 7/15	5/8 - 1600 hit 1250 on 7/15	5/8 - 1602 hit 1250 on 7/15	5/11 - 1545 hit 1250 on 7/17	5/20 - 1408 hit 1250 on 7/22	5/20 - 1375 hit 1250 on 7/24

All reported accumulations based on Skybit Inc. data with some ground verification. OFM base = 45, max = 90, TABM base = 45, max = 91, CM base = 50, max = 88.

Spray targets based on: OFM: 200 °D after biofix and again 200 °D later (first generation only)
TABM: (A.M. sprays) 490, 625, 763, 898 - 1st gen. and 2228, 2415, 2605, 2795 °D after biofix - 2nd gen.
CM: 250 °D after biofix and again 2 - 3 weeks later; 2nd generation at 1250 - 1300 °D after biofix + another spray 14 to 21 days later.