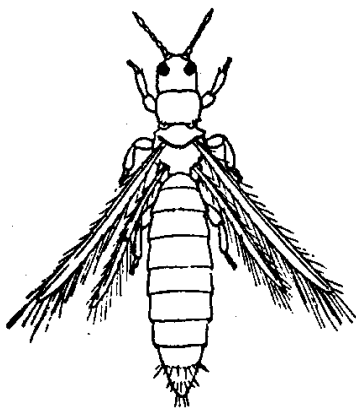


# PLANT & PEST ADVISORY

FRUIT EDITION \$1.50

JUNE 24, 1997



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## Warning! It Could Be a Thrips Year

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

**N**ectarine and peach growers could experience problems with Thrips at harvest this summer. Several factors are contributing to the build-up of Thrips in orchards I recently examined. These factors include: 1) lack of driving rain to physically reduce Thrips numbers; 2) lots of fruit touching each other, creating protected feeding areas for Thrips; and 3) flowering ground covers, especially clover, which provide necessary food and shelter for reproducing populations of Thrips. The end result is that many Thrips are present in some orchards and pose a risk if not monitored for and managed.

Management practices can be started now to reduce risk of Thrips damage at harvest. Keep the orchard floor clean of flowering weeds. Mow frequently to prevent the ground cover from flowering or clean-cultivate as needed. Be careful though, don't mow right before harvest because this will drive adult Thrips into the tree. White clover is a notorious plant for facilitating increases in Thrips levels. Try to keep it from flowering now, and plan to get rid of it this fall. Also, thin fruit so they do not contact other fruit. This reduces the amount of protected areas for feeding Thrips.

Monitor for Thrips in the tree by examining ripening fruit collected from lower outside branches. Collect samples from at least 5 areas by picking 10 fruit per area (minimum of 50 fruit). Look for the presence of Thrips and the characteristic "silvery" feeding damage. If 5 adult Thrips and feeding damage are found per 50 fruit, an insecticide may be warranted.

Options for chemical control of Thrips on nectarines and peaches are limited so it is important to minimize Thrips levels using the above management practices. If Thrips are present at harvest and control is warranted, New Jersey growers can use Lannate 90SP (0.5-1 lb/acre). Lannate 90SP has a 1-day pre-harvest interval (PHI) for nectarine and 4-day PHI for peach. It can only be used 3 times per year on nectarine. □

# Fruit IPM

Dean Polk, IPM Agent, Fruit

## ◆ Peach

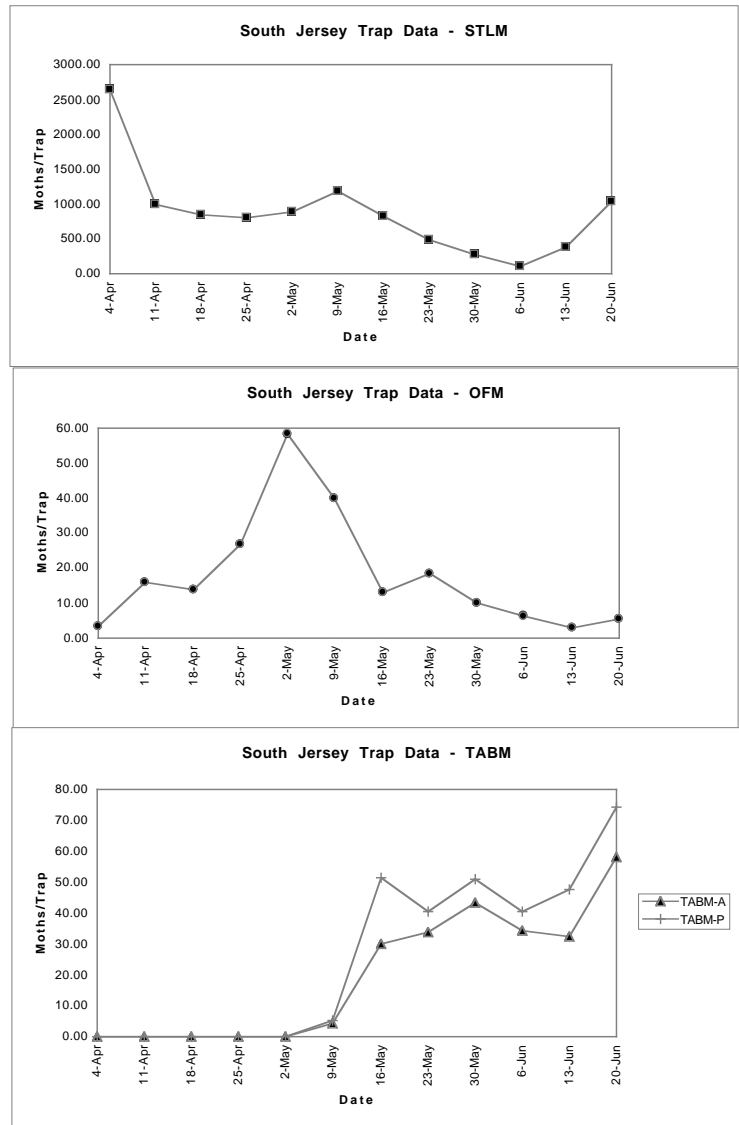
**Oriental Fruit Moth (OFM):** Adult counts increased slightly this past week, indicating the start of the second flight. Adult females will lay eggs on the foliage and fruit surface, which results in larval damage to both foliage (flagging) and direct fruit injury. While we have no reliable model to time sprays for the second through fourth generations, past experience has shown that trap counts above 6 to 8 males per trap represent high insect pressure and should be treated. Using these numbers, we are suggesting treatment on roughly 30% of scouted blocks in southern counties.

**Catfacing Insects:** Tarnished plant bug continues to be the most common catfacing insect present. Many nymphs have matured, and counts are the highest they have been all season. Highest counts range from 20 to 39 TPB per 50 sweeps in the ground cover. About 25% of the sampled blocks in the Camden/Atlantic/Burlington County area showed low levels of fresh injury. Insecticide sprays should be maintained for this insect where pressure is high.

**Tufted Apple Budmoth (TABM):** According to our model, TABM is about 80% hatched in southern counties. An application for this pest should have been during the early part of this week. Please see the degree day chart for the area closest to your farm. We are also experiencing high numbers of adults present in the traps, indicating that additional oviposition may occur during the near future. First through 3<sup>rd</sup> instar larvae have been seen feeding on peach fruit in Gloucester County.

**Rusty Spot:** New rusty spot lesions are still visible. However, past experience and the literature suggest that infections are not likely to occur after pit hardening. Therefore applications of Nova can stop over the next week on most varieties.

## ◆ Tree Fruit Graphs



## ◆ Apple

**Tufted apple budmoth (TABM):** See timing listed under peach, above.

**Codling moth (CM):** Treatments for the first generation have been applied in most areas. If trap counts remain above 5 moths per trap per week, then additional treatments are suggested. Codling moth trap counts are particularly high on several farms in northern counties (12-14 moths per trap). Growers with this kind of pressure should reapply insecticide for control.

**Spotted Tentiform leafminer (STLM):** Trap captures of adult moths has increased significantly over the past week. Some farms have levels in excess of 2,000 males per trap. As moths emerge, they mate and lay eggs. These hatch and produce the first sap feeding larvae of the second brood. Growers should apply insecticides to target young sap feeding larvae when the mine count

SEE IPM ON PAGE 3

exceeds .5 to 1 mine per leaf. Treatments should only be applied when the majority of miners (larvae) are sap feeders and visible only on the bottom of the leaf. We are suggesting that treatments be applied this week (if needed) in southern counties. Provado @6 oz/A and Vydate @2.5-3 pt/A have given the best control. Lannate will also control emerging larvae, but will kill mite predators, and therefore build mite populations if used at medium to high rates at this time.

**Aphids (apple aphid, spirea aphid):** Aphid colonies are building in many orchards. However, these green aphids (as opposed to rosy aphids) should be tolerated until at least 50% of the terminals are infested with large size colonies. There are many predators which will attack aphids, and can often keep them suppressed until new tissue starts to harden off, and aphids start to decline. This usually happens during the first to second week of July. Use of Lorsban 50W as a cover insecticide for budmoth and other Leps will also suppress aphids, thus helping to avoid the extra expense of additional aphicides. If growers are treating for spotted tentiform leafminer, then those treatments will also kill aphids.

**Mites:** European red mites are increasing in many blocks, along with populations of the small black ladybird beetle, *Stethorus punctum*. The predator is present at ratios of up to 2:1 (predators per 3 minute count vs. mites/lf). Predator populations in ratios of 2 to 2.5:1 will control mite populations about as fast as the best miticides. Predators should be encouraged by not using insecticides that kill them. Medium to high rates of Lannate, Sevin, and pyrethroids are the worst offenders at this time of year.

**Fire Blight:** Several blocks of both apples and pears were scouted with significant numbers of fire blight strikes. Strikes should be removed as soon as possible 10 to 12" below visible symptoms. Pruners should be sterilized with bleach or copper. Trees should be oversprayed with copper or streptomycin. These treatments should be applied within 24 hrs. of an infection period as long as strikes are present in the orchard.

**Tree Fruit Pest Degree Day Accumulations Since 1<sup>st</sup> Catch - 6/23/96**

Site	Biofix/1 <sup>st</sup> Catch Date & DD - TABM		Biofix/1 <sup>st</sup> Catch Date & DD - CM	
Hammonton - At. Co.	5/2	903	5/9	613
Hardingville - Glou. Co.	4/30	937	4/30	682
Bridgeton - Cumb. Co.	5/1	930	5/2	665
Princeton - Mercer Co.	5/12	784	5/5	609
Oldwick - Hunt. Co.	5/17	700	5/16	518
Hackettstown - War. Co.	5/22	619	5/9	550
<b>Spray target after biofix/1<sup>st</sup> catch</b>	<b>Alt Mid Appl. at 490 (0-5% hatch), 625 (25-30% hatch), 763 (50-55% hatch), 898 (75-80% hatch) (1<sup>st</sup> brood), and 2228 (0-5% hatch), 2415 (25-30% hatch), 2605 (50-55% hatch), 2795 (75-80% hatch) (2<sup>nd</sup> brood)</b>		<b>250 DD plus 2 weeks later (1<sup>st</sup> generation), 1250-1300 DD plus 2-3 weeks later (2<sup>nd</sup> generation)</b>	

◆ **Blueberry**

**Leafrollers and other Leps:** Pupae and newly emerging adults are present. These include both redbanded leafrollers and obliquebanded leafrollers. Egg masses were scouted last week, indicating that emerging larvae should be present in the near future. We should see redbanded leafroller larvae before we see obliquebanded leafroller larvae. RBLR larvae are entirely green, including the head.

**Cranberry fruitworm (CBFW):** Low levels of fruitworm injury were seen in about 4% of our samples on 3 farms. No additional treatments are needed for this pest at this time.

**Sharpnosed leafhopper (SNLH):** Trap catches of adults have increased since last week. This indicates that nymphs are maturing, and adults are moving from bush to bush. Stunt disease can be transmitted any time now that adults are flying.

**Aphids:** Aphid populations increased significantly last week to up to 10 times the levels seen the previous week. Highest infestation levels were found in the Hammonton area where up to 37% of the terminals were found with aphids.

**Plum curculio:** PC larvae were seen in berries from several sites. While larvae were found in the fruit, it should be noted that many were exiting or about to exit the fruit. Most of these were likely on fruit near field borders, since this is where the majority of egg scars have been noted. These will not be a problem in most Duke, Bluecrop and later varieties, since the larvae will not be present. However, growers should be particularly aware of scarred and collapsed berries from Weymouth and Bluetta fields, since these may harbor larvae, and are not permitted in export shipments.

**Blueberry maggot:** Although not reflected in our trap counts, maggot flies are flying. We picked up 8 flies per trap on one Hammonton farm last Thursday 6/19. Flies are also being found in abandoned sites. Treatments are normally applied about 10 days after first capture. Therefore insecticides should be applied for maggot. We are using a provisional treatment level of one fly per trap. If commercial farms have traps with more than one fly per trap, treatment is suggested.

SEE TRAP AVERAGES ON PAGE 4

◆ **Trap Averages**

**South Jersey Tree Fruit**

Week Ending	RBLR	STLM	TBM-A	CM	AM	OFM	TBM-P	LPTB	PTB
5/2	30.8	885	0.06	0.04	—	56.9	0.08	—	—
5/9	25.3	1177	4.5	1.0	—	39.5	3.0	—	—
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

**North Jersey Tree Fruit**

Week Ending	RBLR	STLM	TBM-A	CM	AM	OFM	TBM-P	LPTB	PTB
5/2	40.2	1080	0.0	0.01	—	3.3	0.0	—	—
5/9	22.2	980	0.0	0.3	—	26.2	0.0	—	—
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

**Blueberry**

Atlantic Co.

Week Ending	RBLR	OBLR	CBFW	SNLH	BBM
5/2	107	—	—	—	—
5/9	27.5	0	0	—	—
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

Burlington Co.

Week Ending	RBLR	OBLR	CBFW	SNLH	BBM
5/2	33.4	—	—	—	—
5/9	14.0	0.2	0	—	—
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

## Maryland State Horticultural Society Summer Orchard Tour

*Submitted by Jerome L. Frecon, Gloucester County Agricultural Agent*

*The following article was excerpted from the Maryland State Horticultural Newsletter.*

The Maryland State Horticultural Society's 1997 Summer Tour will be held on Tuesday, July 1. During the morning, the group will visit two direct-market operations in suburban Clinton, MD. We will be hosted at Cherry Hill Orchard by the Gallahan family. Cherry Hill features about 30 acres of pick-your-own peaches and apples. In addition, they grow small fruits and vegetables. Cherry Hill Orchard sells their crops retail at the farm. The second morning stop will be Parker Farms which is also located in Clinton. Parker Farms grows an array of small fruits and vegetables which are marketed on-farm wholesale, and retail at farmers' markets.

Clinton is located just six miles south of the Nation's Capitol. Tobacco was once the dominant crop grown

here. As tobacco acreage decreased in the past decade, the number of family horticultural enterprises expanded to take advantage of the opportunity to direct-market fruits and vegetables to the population of the Washington, DC area. The morning tour will be co-hosted by the Maryland Vegetable Growers Association.

The afternoon will be spent touring the University of Maryland's new Plant Sciences Building. The building tour will highlight the University's facilities for conducting research and education programs in fruit crops. Participants will see a variety of facilities and hear University faculty members discuss their research and teaching programs.

Cost for registration including bus tour and luncheon is \$25.

Tour participants will ride on chartered, air-conditioned buses. Growers from outside Maryland are invited to join us on the buses.

Contact: Robert Black, Treasurer of the Maryland State Horticultural Society, 301-271-4513 or Chris Walsh, Assistant Secretary at 301-405-4351. Send check and reservation information to: Robert A. Black, Treasurer, Maryland State Horticultural Society, 15308 Kelbaugh Road, Thurmont, MD 21788. □

# June is Peak Tick Season

Deborah Smith-Fiola, Ocean County Agricultural Agent

Last summer's mild weather allowed for optimal survival and host finding for the northern deer tick (now known as the black legged tick), the vector of Lyme disease.

Because of the 2-year life cycle of this tick, last year's larvae have overwintered to molt into the nymph stage, which has peak activity in late May and June. The majority of all Lyme disease cases are the result of the bite of a nymph, usually this time of year.

The deer tick nymph is the size of a poppy seed. It has a black head and a black dorsal shield behind its head. The abdomen is creamy white and translucent before it feeds - after a blood meal, the abdomen darkens and swells. It takes 3 to 4 days for a nymph to finish feeding on an animal and completely engorge with blood — whereupon it swells to the size of a sesame seed, and drops off the host. This is how deer tick populations spread: they hitch a ride on an animal host such as a bird, feed for a few days, then drop off wherever that bird may have flown.

Research shows that 85% or more deer tick nymphs are found in the woods, typically in 4 - 6 inch high vegetation. This location offers the likelihood of finding a small animal to feed upon. Ticks don't fly, jump, or fall from trees. They find a host by crawling up low vegetation and *waiting* for an animal to walk by — then they grasp onto the skin/clothing, and crawl up. Knowing this, beware of walking in tall grass or the shrubby undergrowth in the woods. Widen trails to 6 feet or more to avoid brushing against vegetation. Some homesites will clear cut the shrubby understory layer of the adjacent forest to somewhat reduce the tick potential by mowing or bushhogging - but this has to be repeated annually (or else regrowth occurs along with increased wildlife and increased ticks!)

Not every tick carries Lyme disease. In order to transmit the disease as they feed, nymphs need to pick up the disease when they were a larva from an infected animal. The infection rate thus varies annually, typically from 10% to 25-30%. (Note that adult ticks have a higher infection rate [up to 45% in Hunterdon County last year]). Even if infected, research shows that the deer tick still must feed at least 24 hours to transmit the disease bacteria from its body to yours. Translated: this means that approximately one out of four ticks may be infected and able to transmit Lyme disease - if it feeds more than a day. So the trick is to *remove ticks as soon as possible!*

Remove ticks only with tweezers. Bent, 'needle-nose' tweezers are preferred. Other methods, including using your fingers, petroleum jelly, a hot match, etc. may traumatize a tick - and a traumatized tick is likely to regurgitate its gut contents, which may include the Lyme disease bacteria. Grasp the tick under the head, and S-L-O-W-L-Y and firmly pull it out. Disinfect the wound with antiseptic. Save the live tick for identification (put it in a sealed container with a moist cotton ball in a cool spot). The Rutgers Plant Diagnostic Lab (908-932-9140), many county extension offices, the State Health Dept. and NJ Labs (a private company in New Brunswick) all identify ticks (the latter two for a charge which includes determining if infected).

Lyme disease symptoms include: a migratory rash (2" or more in diameter; appearing on 60% of victims, usually noticed 2-3 days after a bite); fatigue, memory loss, joint pain and inflammation, headache,

difficulty concentrating, and flu-like symptoms. Symptoms may progress to mimic other, more severe diseases. See a doctor! Deer ticks and other ticks are now known to transmit other, less common diseases. Ehrlichiosis (HGE), has been identified since 1984, and was diagnosed in 8 people in New Jersey last year, with 2 deaths. Suspect ehrlichiosis if you have Lyme-like symptoms (fever, fatigue, chills, headache, muscle pain) early in the day, but by evening symptoms are severe, to the point of entering the hospital.

For more information, see your doctor and/or call your county agent for the free RCE bulletin, "Prevent Tick Bites, Prevent Lyme Disease." □

## Fruit Meeting Calendar

**July 1, 1997** - Maryland State Horticultural Society Summer Orchard Tour  
Contact: Robert Black, 15308 Killough Rd., Thumont, MD 21788

**July 24 - 26, 1997** - NJ Peach Festival, Rt. 77 - 4-H Fairgrounds, Mullica Hill, NJ  
Contact: Jerry Frecon, RCE of Gloucester County, 1200 N. Delsea Drive, Clayton, NJ 08312, 609-863-0110.

**July 31, 1997** - Pennsylvania Tree Fruit Growers Field Day, Penn State Fruit Research and Extension Center, Biglerville, PA  
Contact: Dr. George Greene 717-677-6116

**Sept. 11, 1997** - Variety Showcase and Open House, Rutgers Fruit Research and Extension Center, Cream Ridge, NJ  
Contact: Dr. Joe Goffreda 609-758-7311

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