

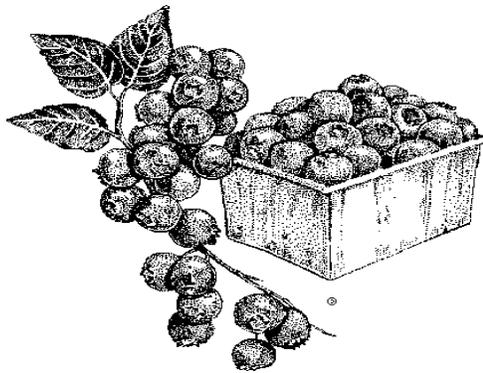
PLANT & PEST ADVISORY

FRUIT EDITION \$1.50

SEPTEMBER 17, 1996

Fruit IPM - Week Ending 9/13/96

Dean Polk, IPM Agent - Fruit



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◆ Apple

✓ **White apple leafhopper (WALH) and rose leafhopper (RLH):**

There is little change from last week, other than most nymphs have now matured into adults. Most controls work much better on nymphs than adults (see last week's newsletter for control suggestions).

✓ **Spotted Tentiform Leafminer (STLM):** Trap counts have increased this past week, indicating that the fourth generation flight is underway. Controls are not suggested for this flight. These adults will lay eggs which will produce fourth brood larvae. Many of these will overwinter in fallen leaves and emerge next spring as first flight adults.

✓ **Tufted apple budmoth (TABM):** All egg hatch has been completed, which means that all sprays for this insect should have already been applied (in all counties). Where a good control program was used few larvae should be present. However if larvae are present, they will continue to feed and cause damage. There is little that can be done to kill these larvae at this time.

◆ Peach

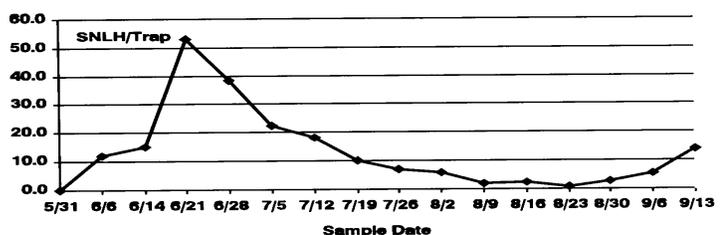
✓ **Lesser peachtree borer and peachtree borer (LPTB & PTB):**

Applications should be going on for both LPTB and PTB. See last week's newsletter for control suggestions. **Do not use concentrate sprays, or even dilute sprays with an airblast sprayer.** Pest surveys, IPM data and research have all shown that this is largely a waste of time, and does not give good control. Use of a handgun is mandatory if good control is desired.

◆ Blueberry

✓ **Sharpnosed leafhopper:** Second generation adults have increased again on most farms. If growers wish to time second generation leafhopper sprays to coincide with peak adult activity, they should probably plan to target the last week of September to the first week of October. □

Blueberry - SNLH Trap Record 1996 Abandoned Sites



Insect Trap Captures											
Week Ending	7/5	7/12	7/19	7/26	8/2	8/9	8/16	8/23	8/30	9/6	9/13
Tree Fruit - Southern Counties											
RBLR	36.7	20.3	9.7	5.3	10.9	21.7	20.5	29.1	20.1	25.3	30.0
STLM	1071	854	1039	1476	1341	959	756	612	343	428	958
TABM-A	10.7	4.8	6.7	19.1	21.0	21.3	24.5	19.3	12.9	25.1	10.5
CM	0.2	0.3	1.2	3.2	2.0	2.1	1.1	0.8	1.3	0.7	0.4
AM	0.1	0.0	0.13	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1
OFM	3.7	2.9	5.9	5.6	3.1	3.0	4.3	9.8	9.9	14.2	38.8
TABM-P	8.6	9.7	7.7	20.0	30.6	19.6	19.6	12.0	21.7	13.5	27.5
LPTB	36.8	30.7	22.5	12.4	17.4	23.6	23.6	43.7	67.3	54.6	30.6
PTB	3.2	3.5	3.4	5.8	3.9	3.9	3.9	4.1	5.0	3.5	3.0
Tree Fruit - Northern Counties											
RBLR	19.2	8.4	0.4	17.6	1.5	1.4	8.5	5.8	23	23	19.3
STLM	794	627	557	620	787	1302	1393	659	1099	1340	544
TABM-A	10.0	3.2	1.1	1.1	0.2	1.6	2.0	0.5	5.0	14.0	7.1
CM	5.1	2.4	6.1	7.6	4.7	9.3	7.9	1.7	7.0	3.5	2.7
AM	.02	0.7	0.4	0.0	0.3	0.1	0.2	0.1	0.2	0.1	0.0
OFM	4.9	4.3	3.2	3.6	3.4	7.2	4.9	3.8	3.8	7.0	6.5
TABM-P	20.0	10.0	0.0	0.0	0.0	0.2	2.2	0.8	8.0	13.0	2.6
LPTB	9.5	9.8	7.0	18.7	3.7	8.0	4.4	5.1	7.4	8.5	3.5
PTB	8.0	6.2	4.1	9.3	5.5	7.0	6.6	1.6	4.3	2.5	0.4
Blueberry - Atlantic County											
RBLR	6.5	45.4	16.9	8.4	6.4	5.1	5.1	3.0	7.8	11.6	4.8
OBLR	2.3	0.8	0.7	3.0	3.5	0.4	0.7	0.5	0.6	0.5	0.3
CBFW	0.08	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SNLH	1.2	0.8	0.2	0.3	0.4	0.5	0.1	0.2	0.4	1.0	2.3
BBM	0.2	0.3	0.1	0.1	0.2	0.4	0.6	0.5	0.6	0.2	0.9
OB	774	1451	1173	450	182	71	36	29	9.3	1.5	--
Burlington County											
RBLR	73.4	45.0	9.9	3.1	1.2	5.0	6.9	8.0	21.0	16.0	11.2
OBLR	7.0	1.0	0.3	0.9	0.6	0.5	2.0	1.3	2.8	0.5	0.8
CBFW	0.0	0.1	0.0	.08	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SNLH	1.8	1.6	0.9	0.1	0.6	1.9	0.6	0.3	5.3	4.6	6.5
BBM	0.2	0.2	0.4	0.3	0.5	2.6	0.3	0.2	0.1	0.0	0.03
OB	449	840	663	356	112	51	37	14.6	4.9	0.2	--
Abandoned Fields (both counties)											
RBLR	47.0	34.0	10.0	8.0	0.5	5.0	0.8	1.5	7.0	12.3	2.0
OBLR	15.5	4.0	1.0	1.5	2.0	0.5	0.8	0.5	1.8	1.5	0.5
CBFW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SNLH	22.5	18.3	10.0	6.9	6.0	1.9	2.2	0.9	2.7	5.4	14.1
BBM	6.8	37.0	47.0	19.5	8.3	2.6	1.2	2.1	1.0	0.0	0.7
OB		435	191	122	51	51	4.0	6.0	6.0	--	--

Insect key: RBLR = redbanded leafroller, STLM = spotted tentiform leafminer, TABM = tufted apple bud moth, CM = codling moth, AM = apple maggot, OFM = oriental fruit moth, LPTB = lesser peachtree borer, PTB = peachtree borer, OBLR = oblique banded leafroller, CBFW = cranberry fruitworm, SNLH = sharpnosed leafhopper, BBM = blueberry maggot, OB = oriental beetle.

Insect Degree Day Accumulations as of 9/14							
Insect	Site & County						
	Biofix Date plus Degree Days Since Biofix						
	Bridgeton Cumb.	Hammonton. Cam.	Hardingville Glou.	Richwood Glou.	Princeton Mercer	Oldwick Hunt.	Morristown Morris
TABM ₄₅ 2nd Gen	5/4 - 3387 Hit 2228 Aug 4-1st trt Hit 2415 Aug 11-2nd trt Hit 2605 Aug 18-3rd trt Hit 2795 Aug 25-4th trt	5/3 - 3378 Hit 2228 Aug 4-1st trt Hit 2415 Aug 11-2nd trt Hit 2605 Aug 18-3rd trt Hit 2795 Aug 25-4th trt	5/2 - 3403 Hit 2228 Aug 4-1st trt Hit 2415 Aug 10-2nd trt Hit 2605 Aug 18-3rd trt Hit 2795 Aug 24-4th trt	5/2 - 3405 Hit 2228 Aug 4-1st trt Hit 2415 Aug 10-2nd trt Hit 2605 Aug 18-3rd trt Hit 2795 Aug 24-4th trt	5/13 - 3050 Hit 2228 Aug 10-1st trt Hit 2415 Aug 18-2nd trt Hit 2605 Aug 24-3rd trt Hit 2795 Aug 31-4th trt	5/20 - 3033 Hit 2228 Aug 16-1st trt Hit 2415 Aug 23-2nd trt Hit 2605 Aug 29-3rd trt Hit 2795 Sept 6-4th trt	5/23 - 2890 Hit 2228 Aug 21-1st trt Hit 2415 Aug 27-2nd trt Hit 2605 Sept 4-3rd trt Hit 2795 Sept 10-4th trt
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 + 2 - 3 weeks later; 2nd generation at 1250 - 1300 °D after biofix + another spray 14 to 21 days later.							

Weather Summary for the Week Ending 8am Monday 9/16/96

Keith Arnesen, Agricultural Meteorologist

Temperatures averaged much above normal. Extremes were 91 degrees at Pomona on the 11th and 45 degrees at Newton and Charlotteburg on the 16th. Weekly rainfall averaged 0.68 inches north, 0.56 inches central, and 1.23 inches south. The heaviest 24 hour total was 1.95 inches at Cape May Court House on the 12th to 13th. Estimated soil moisture, in percent of field capacity, this past week averaged 82 percent north, 74 percent central, and 55 percent south. Four inch soil temperatures averaged 69 degrees north, 72 degrees central, and 73 degrees south.

The following table contains meteorological information since the start of the growing season March first. The table is updated each Monday and the following is an explanation for each column.

Week=total rainfall for the previous 7 days ending Monday morning

Total=total rainfall since March 1st

Dep=departure from normal of rainfall since March 1st. A negative sign indicates below normal and no sign indicates above normal.

Mx=highest temperature for that 7 day period

Mn=lowest temperature for that 7 day period

Avg=average temperature for that 7 day period

Dep=departure from normal of the average temperature for that 7 day period

Total=total number of growing degree units since March 1st

Dep=departure from normal of growing degree units

%fc=percent of field capacity (soil moisture)☐

Late Season Leafhoppers

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

White apple leafhopper and rose leafhopper levels are reported to be high in some apple orchards (see Dean Polk's Sept. 10, Plant & Pest Advisory article). Other NJ Agricultural Agents are indicating that leafhopper problems still exist, especially in some pick-your-own apple orchards. It is important to note that two problems occur when leafhopper problems are high at harvest. First, there are cosmetic problems due to the speckling of the fruit with leafhopper frass (insect fecal matter). This can severely diminish the appearance of the crop. Secondly, pick-your-own customers (as well as professional pickers) object to lots of leafhoppers flying around their faces. Realize that some people have aversions to insects and, as far as pick-your-own customers go, one leafhopper up the nose may be all it takes for the customer to call it quits leaving them with a bad experience and the grower without a sale.

A good early leafhopper control program should have prevented these late season problems. However, it is obvious that rescue treatments are needed in some orchards. Leafhopper control this late in the season is difficult because several materials have long pre-harvest intervals (PHI) and/or are not as effective against leafhopper adults. Listed below are materials that are effective against leafhoppers along with their associated PHI's (in parentheses). These include: Carzol (7), Provado (7), M-Pede (0), Sevin (1), Lannate (14), Vydate (14), and Asana (21). If control measures are used, good coverage is essential.☐

WEATHER SUMMARY FOR THE WEEK ENDING 8AM MONDAY 9/16/96										
WEATHER STATIONS	R A I N F A L L			TEMPERATURE				GDD	BASE50	MON
	WEEK	TOTAL	DEP	MX	MN	AVG	DEP	TOT	DEP	%FC
BELVIDERE BRIDGE	.41	26.70	.13	86	50	67.	3	2432	-23	77
CANOE BROOK	.83	30.06	2.17	88	52	68.	4	2825	362	96
CHARLOTTEBURG	.86	35.03	6.87	85	45	65.	4	2421	465	96
FLEMINGTON	.45	31.99	5.28	85	48	66.	2	2621	96	74
LONG VALLEY	.70	28.57	-.32	82	49	66.	4	2380	211	82
NEWTON	.83	29.75	3.79	85	45	65.	4	2367	157	78
FREEHOLD	.55	28.47	2.49	86	48	68.	2	2682	7	93
LONG BRANCH	.64	25.38	-.94	87	51	70.	4	2672	54	88
NEW BRUNSWICK	.71	32.03	5.67	87	49	69.	3	2769	-43	84
PEMBERTON	.17	33.05	6.39	89	49	69.	3	3075	329	45
TOMS RIVER	.70	27.74	.84	89	54	70.	3	2704	81	60
TRENTON	.57	37.10	12.14	87	48	67.	0	2769	-148	71
CAPE MAY COURT HOUSE	3.39	31.16	7.86	88	54	72.	3	2864	229	91
DOWNTOWN	.92	25.60	1.09	88	50	70.	3	2981	3	61
GLASSBORO	.59	30.74	5.04	86	54	69.	2	3077	180	60
HAMMONTON	.69	25.22	-.46	89	51	71.	4	3013	107	49
POMONA	.91	25.79	2.36	91	51	71.	5	2848	136	58
SEABROOK	.63	28.57	5.02	90	52	70.	2	3024	79	52
ATLANTIC CITY MARINA	1.47	23.75	1.24	89	49	70.	2	2709	37	75
WOODSTOWN	.51	27.56	2.33	89	50	71	NA	3127	NA	NA

Evaluation of Mechanical Thinners on Bloom/Fruit Removal and Yield of Encore Peaches

Bobby Boozer, Bill Dozier, and Jim Pitts, Alabama Agricultural Extension
Submitted by Jerome L. Frecon, Gloucester County Agricultural Agent

Proper fruit thinning is necessary in peach production to obtain marketable size fruit. Most peaches are thinned by hand, which is costly and labor intensive. Mechanical shakers, which are used in some heavy fruiting years, can thin fruit but are not always consistent in performance. Recently, a mechanical rope thinner was introduced to growers for thinning during bloom.

AAES researchers at the Chilton Area Horticulture Substation (CAHS) evaluated the bloom thinning ability of the peach rope thinner in a grower block of Encore peaches. The mechanical rope thinning equipment consisted of a rotating cross beam, 10 feet in length, with 12-foot ropes doubled and spaced five inches apart along the beam. This equipment was mounted on a front-end loader. Objectives were to determine the percent of blooms removed, where bloom removal was occurring within the fruiting canopy, and how mechanical rope thinning compared with mechanical shaking on yield and size of fruit.

Because of the versatility of the peach rope thinner, three different operation methods were used: single pass,

There was a strong trend toward increasing total yield by use of the mechanical rope thinner, compared to the mechanical shaker (see table). Fruit weight increased after the double-pass, rope thinner operations. However, extremely dry weather during the growing season is believed to have reduced overall treatment effects.

The Mechanical Rope Peach thinner appears to be a viable option for peach producers to use for removing excess fruit during the bloom stage. Being able to alter the number of passes, speed of tractor and rotation rate of ropes gives producers options to how much thinning they want to accomplish. Blooms can easily be counted from five to ten shoots positioned five feet or higher within the fruiting canopy and recounted after rope thinning operation is performed. Average bloom removal can be calculated and adjustments can be made to thinning. Touch up hand thinning will still be required, but more of the touch up work will be closer to the ground, which should reduce the time needed to perform the task. □

Percent, Number, and Position of Blooms/Fruit Removed by Four Thinning Treatments

Treatment	Percent removed per shoot	Number removed by position on tree				Total yield	Average fruit weight
		Left	Right	High	Low		
	pct.	no.	no.	no.	no.	lb.	oz.
Mechanical Shaker	72	18	17	15	20	101.43	4.73
Mechanical Rope Thinner							
2-pass, clockwise & counter ""	57	15	15	17	13	119.07	5.08
2-pass, clockwise only	55	12	15	15	12	116.87	5.02
1-pass	42	9	13	11	10	114.66	4.44

double pass, and bi-directional double pass. All operations were performed at the same rate of speed. These methods were compared to the mechanical shaker, which was operated based on guidelines used by the CAHS.

Results showed that the mechanical rope thinner can remove an average of 42% of the blooms when operated at 2 mph and 1.5 revolutions per tree with a single clockwise pass. Using the same tractor speed and speed of rotation, the mechanical rope thinner removed 55% of the blooms with two clockwise passes. Making two passes - one clockwise, one counter-clockwise - produced 57% bloom removal. All three rope thinning methods removed more blooms from above five feet of the fruiting canopy. Also, the single pass and double pass methods removed slightly more blooms on the right side of scaffold limbs. The mechanical shaker, which was used 30 days after full bloom, removed 73% of the fruit; a higher percent of the fruit was removed from below five feet within the fruiting canopy.

New Jersey Farmer's Direct Marketing Association Twilight Meeting

Date: Wednesday, October 2, 1996

Time: 6:00 pm

Location: Ort Farms
25 Bartley Road
Long Valley, NJ

Contact: Peter Nitzsche
Morris County Agricultural Agent
(201) 285-8300

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