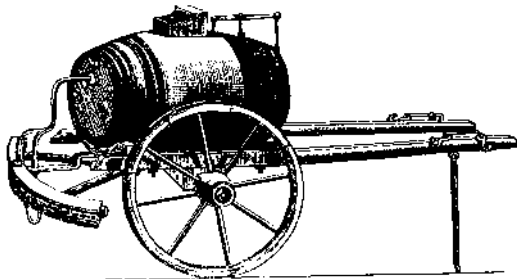


PLANT & PEST ADVISORY

FRUIT EDITION \$1.50

JUNE 17, 2003



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Pesticide Safety Around the Farm

Bill Coli, UMass Extension Farm Safety Coordinator

Reprinted from Healthy Fruit-UMASS Fruit News Letter, Vol. 11(9) June 3, 2003: <http://www.umass.edu/fruitadvisor/>.

Those of us who use pesticides certainly make every effort to do so in accordance with label conditions regarding rates, personal protective equipment (PPE), re-entry intervals (REIs), pre-harvest intervals (PHIs) and the like, and take pains to be sure that farm workers and family members are not exposed to pesticides. With the passage in 1996 of the Food Quality Protection Act (FQPA), additional attention has been paid by the EPA to concerns about worker exposure and potential dietary effects of pesticides on children.

However, studies conducted at the Pacific Northwest Agricultural Safety and Health Center (PNASHC) have indicated that children may be exposed to pesticides in other ways (See "Pesticides and Farming: Are Children in Harm's Way?" NIOSH Ag. Research Centers Update, Spring 2003, Vol. 1, No. 2). The PNASHC found "elevated" levels of agricultural chemicals in household dust in homes of agricultural workers compared to the general public. A recent report on the studies went on to add that "children of pesticide applicators also had higher levels of pesticide metabolites" in their urine than children whose parents did not work in agriculture.

Another PNASHC study of 44 pre-school children of non-agricultural workers who live in close proximity to sprayed agricultural areas found that levels of pesticide metabolites in their urine increased during the spraying season and returned to normal after the end of the season. Of course the situation in Massachusetts is likely very different from Washington State in terms of the size of agricultural areas being treated with pesticides. Nonetheless, as noted by the PNASHC study authors, it would still seem prudent to consider ways "to strike a proper balance between the risks and benefits of agricultural pesticide use", and minimize potential exposure of our families and our neighbors.

Applicators cannot completely avoid exposure to the chemicals that they apply. Exposure occurs during any of the many activities involved in the spraying operation, including transporting the pesticide, tank filling and mixing, container rinsing, sprayer maintenance, pesticide storage and early re-entry to treated areas.

Exposure can involve contact with pesticide vapors and aerosols, the concentrated pesticide formulation in a liquid, granular, or powder form, and the spray mixture itself. Workers absorb chemicals into the body

SEE PESTICIDE EXPOSURE ON PAGE 2

PESTICIDE EXPOSURE FROM PAGE 1

through the skin, eyes, respiratory (breathing) or digestive system (swallowing). Studies have shown that good personal hygiene practices reduce the risk of long term health effects.

General Recommendations

- Read and understand the product label and material safety data sheet before application.
- Bathe or shower after completion of pesticide application, including shampooing hair thoroughly and cleaning under nails.
- Put on clean clothing.
- Clothing worn during application must be washed daily after each use.
- Launder all clothing used for spraying separately from the family's regular clothes.
- Personal protection equipment should be cleaned daily after use.
- Discard any clothing that is heavily soiled with pesticide concentrate.

Preparation for Laundering

- Remove pesticide granules from cuffs and pockets outdoors (in the field).
- Discard (according to label instructions) any garment saturated with a full-strength chemical.
- Handle soiled clothing with chemical resistant gloves.
- Use disposable plastic garbage bags for temporary storage of pesticide-soiled clothes before washing.
- Pre-treat pesticide-soiled clothes with a laundry stain removal product intended for oily stains when an oil-base (emulsifiable) formulation has been used.
- Pre-treat heavily soiled areas.
- Read the pesticide label for information.
- Pre-rinse pesticide-soiled clothing: on pre-soak cycle of automatic washer or presoaking in a suitable container (dump water on field) or spray/ hose the garment outdoors (away from children and pets).

Laundering

- Isolate pesticide-contaminated work clothes and wash them separately from the regular family laundry to avoid contamination.
- Do not overcrowd clothes in the washing machine.
- Use hot water (140°F) setting.
- Use full water level.
- Use normal wash cycle (about 12 minutes).
- Use more detergent than recommended by product label.
- Use fabric starch. Pesticide residues cling to the starch and are removed in the subsequent wash cycle when the starch is washed away.
- Choose a heavy-duty detergent (liquid or powder).
- Re-wash clothing two or three times.
- Line dry clothing to avoid contamination of the dryer and to allow sunlight to break down pesticide residues.

SEE LAUNDERING ON PAGE 5

Twilight Research Fruit Meeting

Thursday, June 26, 2003, 5:00 – 9:00 p.m.
**Rutgers Agricultural Research &
Extension Center (RAREC)**
121 Northville Road
Bridgeton, NJ (Upper Deerfield Twp.)

The program below will be followed while the attendees travel throughout the farm observing research trials and plots. A picnic supper will be provided after the tours and demonstrations.

Agenda:

5:00 p.m. Welcome and Introduction, Dr. Bill Nicholson, Director, RAREC

5:10: p.m. Current Research on Management of Bacterial Spot and Rusty Spot of Peach by Dr. Norman Lalancette, Specialist in Tree Fruit Pathology, and Laura Furman (graduate student), Rutgers Cooperative Extension (RCE)

5:30 p.m. New Trends in Tree Fruit Insect Management, Dr. Peter Shearer, Specialist in Tree Fruit Entomology, RCE

5:50 p.m. Reduced Risk Peach Insect Management Research Program (RAMP) by Dr. Atanas Atanassov, Research Associate in

Tree Fruit Entomology, RCE

6:10 p.m. New Sprayer Technology Demonstration by Dr. Ted E. Cottrell, Research Entomologist, USDA-ARS, Southeastern Fruit and Tree Nut Research Laboratory, Byron, GA



6:20 p.m. Demonstration of Proptec Horizontal Monoboom (Tower) Sprayer for Reduced Drift by Mike Ledebuhr, Ledebuhr Industries, Inc.

6:35 p.m. The IR-4 Fruit Program and Current Projects by Erin Hitchner, IR-4 File Researcher, RCE

6:45 p.m. Weed Control & Ground Cover Research by Dr. Brad Majek, Specialist in Weed Science, RCE

7:00 p.m. Peach Thinning and Peach Rootstock Research by Dr. Robert Belding, Specialist in Pomology, RCE

7:15 p.m. Adjourn and return to building

7:30 p.m. or earlier. Dinner at RAREC Picnic Pavilion
Program will go on rain or shine.

NJ Pesticide Units: 10 – 3 Units, 1A – 3 Units, Core – 1 Unit, PP2 – 3 Units

We need to have an approximate count for the meal. Please contact Jerome L. Frecon at RCE of Gloucester County at 856-307-6450 or e-mail gloucester@aesop.rutgers.edu. This meeting is not totally accessible to the physically impaired; please call one-day prior to the meeting to make arrangements. □

Prebloom Foliar Nutrient Sprays

Alice Wise, Viticulturalist, Long Island Horticultural Research & Extension Center, Cornell Cooperative Extension

Reprinted from Long Island Fruit & Vegetable Update, No. 12., May 30, 2003, Cornell Cooperative Extension.

There are some prebloom sprays useful in certain situations. Visual verification as well as petiole analysis can be helpful in diagnosis of deficiencies. It is a very good idea when applying foliar nutrients to leave an untreated section of vineyard if possible. This allows comparison of treated and untreated vines. The most common sprays are discussed below. Due to lack of solid data, organic options are not discussed however, there are a number of organic products containing micronutrients.

❖ Nitrogen – First and foremost, N fertilization should be addressed via ground application whether using a dry product or dripping in liquid N. Dr. Pete Christensen, emeritus professor at UC Kearney Ag Center, related at the '99 Ag Forum that grapes are relatively inefficient leaf feeders (vs. apples for example). It is not surprising therefore, that the vast majority of research trials have found little or no benefit to foliar-applied N. If vines are N-deficient, however, there might be a response. Some growers feel foliar N at this time of year helps sluggish growth. There are many different products from which to choose including organic options.

❖ Zinc – Considered essential for proper cluster development, berry set and formal shoot growth. Deficiency is seen early summer. New leaves are smaller, distorted and may be chlorotic with darker green veins. Straggly clusters and shot berries may also occur. Soil application of Zn is less effective because Zn is tightly bound in soil. Zinc sulfate, zinc oxide and chelated Zn are used as foliar sprays; follow label for rates. Apply one time 2 weeks prior to bloom. Some western grape growers consider zinc an essential springtime spray.

❖ Boron – Deficiency is seen as stunted zigzag growth and death of shoot tips, poor set with shot berries, often flattened or oblong. Soil treatment is effective since boron (B) moves with the soil water, however this is best applied in the fall or with the spring herbicide. For foliar sprays, use 0.2 lb./a actual B (Solubor is 20% B, so 1 lb. Solubor = 0.2 lbs. actual B) in 1 or 2 prebloom sprays, 8-12" and/or early bloom. There should be a minimum of 2 weeks between sprays to minimize the chance for phytotoxicity. Boron toxicity can easily cause leaf scorching/distortion and shoot stunting. This has been seen locally on a number of occasions though the culprit has more often been ground applied boron. Boron interferes with the dissolving of water-soluble packets used for certain pesticides. When tank mixing, dissolve the packet thoroughly in the spray tank and then add B to the spray mix.

❖ Manganese – Deficiency is seen mid-late summer starting as interveinal chlorosis on basal leaves. A herringbone pattern is characteristic. At soil pH's >6.0, e.g. properly limed soils, Mn availability in the soil is relatively low. Where a deficiency is confirmed by petiole analysis, foliar applications of manganese sulfate (2-3 lbs./100 gal.) are recommended as a corrective measure. Other manganese products used at label rates may also be effective. Foliar manganese oxide materials are considered to be less effective.

Submitted by Jerome L. Frecon, Agricultural Agent. □

Blueberry Pollination

Gary C. Pavlis, Ph.D., Agricultural Agent

Reprinted from Long Island Fruit & Vegetable Update, No. 12 – May 30, 2003, Cornell Cooperative Extension.

In fields where poor pollination is feared because of poor bee activity, visual symptoms should be checked before investing in gibberellin sprays to promote set of berries. If a large percentage of flowers are turning purple instead of dropping while still white, this is a sign of poor pollination. Lack of rapid growth of the ovaries and their discoloration also are indicative of pollination failure. Already, "red caps" are beginning to fall from Weymouth and Earliblue bushes. This is a designation given to unpollinated berries which turn reddish and/or yellowish and then drop. A small amount of drop is expected and occurs even with good crops. If your estimate of the number of unpollinated flowers (purple flowers plus red cap) is less than 20 percent it may not be profitable to spray with gibberellin. It is almost always profitable to use this spray on varieties which are not attractive to honey bees: Earliblue, Coville, Berkley, Stanley, 1316-A and Concords. The best timing is when two thirds of the blossoms have dropped. This spray (Pro Gibb-80 oz per acre with sticker, or Gibrel) is absorbed through the skin of the ovary making it unnecessary for the flower and pistil to be attached.

The following guidelines help in determining whether Gibberellin is needed:

1. Bee activity has been consistently poor. Unless at least an average of 20 bees can be seen actually entering flowers in a 10 minute period, pollination will be below normal.
2. Flowers are hanging for long periods and turning purplish (wine color) before dropping. When pollination is progressing well, blossoms drop while still bright white in color. A vigorous shaking of canes should cause a shower of white corollas dropping to the ground.
3. Ovaries are rapidly swelling soon after flowers drop and are staying green, not turning yellowish or reddish in color.

Submitted by Jerome L. Frecon, Agricultural Agent. □

Protecting Fruit from Apple Scab in Orchards with Visible Scab Lesions

Dave Rosenberger, Ph.D., Specialist in Tree Fruit Plant Pathology, NYAES, Cornell Cooperative Extension.

Reprinted from *SCAFFOLDS Fruit Journal*, Geneva, NY Volume 12, No. 14, June 16, 2003, Cornell Cooperative Extension: <http://www.nysaes.cornell.edu/ent/scaffolds>

Edited for New Jersey conditions by Dean Polk and Win Cowgill, Agricultural Agents.

Keeping **apple scab** under control is proving very difficult this year in orchards where primary scab was not completely controlled during April and early May. Over the last 30 days at the Hudson Valley Lab, we have recorded 17 separate wetting events for a total of 228 hours of wetting and 5.8 inches of rain. Unfortunately, this period of extended wetting started after petal fall just when fruit and leaves are at peak susceptibility for apple scab infection. Very similar conditions were found in Northern New Jersey.

What is the best approach for keeping apple scab off of fruit in orchards with a moderate level of active scab on leaves? Unfortunately, there is no simple answer to this question.

Under New Jersey conditions we have always felt it essential to "burn out" the active infection to protect the fruit from scab inoculum still active on the leaves.

Below are four options to consider, *but note that under New Jersey conditions* option number one had not been effective in burning out active scab lesions, which is a consideration on cultivars susceptible to fruit scab like McIntosh.

The specifics of the orchards involved should be considered when choosing among the options noted below. There is significantly more risk of getting scab on fruit of susceptible cultivars such as McIntosh and Ginger Gold than on more scab-resistant cultivars such as Empire and Delicious. Therefore, captan alone might suffice for the more resistant cultivars, whereas an SI-plus-captan might be warranted for McIntosh blocks.

Similarly, vigorous young trees that are still actively growing have the potential for several more cycles of leaf scab, whereas older orchards with a heavy crop will soon set terminal buds. The SI-captan combination is more likely to pay for itself in orchards with vigorous terminal growth because the SI's can quickly reduce the amount of inoculum available for infecting new leaves (unless, of course, the scab is SI-resistant).

Option 1: Make at least two applications of captan alone at the maximum label rate per acre. Applications at this time of year can be 10-14 days apart unless

rainfall (>1.5 inches) removes captan residues before 10 days have elapsed. Captan is very effective for protecting fruit, especially when combined with high temperatures of 80-85°F.

However, if cool wet weather persists into July, then continued applications (more than two sprays) using high rates of captan may be essential. If weather becomes more normal (hotter and drier), then the risk of fruit infection will subside until September when scab might become active again.

Option 2: Apply captan at maximum label rates as noted above, but tank-mix the high rate of captan with an SI fungicide (Nova, Rubigan, or Procure). The full rate of captan is needed because the SI's will shut down scab on leaves but will do little to protect the fruit. This option is considerably more expensive than Option 1. It will prove more effective than Option 1 *if* orchards do not contain SI-resistant populations of scab and *if* weather stays cool and wet for another month. Option 2 also provides extended control of mildew. However, if weather become hotter (days > 80-85°F) and drier, then Option 1 will probably work just as well as the more expensive Option 2 for controlling scab.

Option 3: Apply captan at 50% of maximum label rates in a tank-mix with Flint or Sovran. Flint and Sovran will provide better protection of fruit than the SI fungicides, so a half-rate of captan should be adequate. The fact that Sovran and Flint bind to cuticular waxes should make them more resistant to wash-off than captan.

However, Sovran and Flint will be less effective than the SI fungicides (in the absence of resistance) for arresting incubating but still invisible infections in leaves. Thus, the trade-off here is potentially better control of fruit scab with Sovran or Flint compared with greater reduction of total inoculum when SI's are applied to leaves with incubating lesions. It is very difficult to predict which option (2 or 3) will result in the least fruit scab. In two years of trials where I tested these products on trees with visible scab, I got better control with the SI's in one year and with the strobilurins (Sovran, Flint) in the other. The variation is largely due to the details of exactly when the products are applied within the scab incubation period. Be aware, however, that where Sovran and Flint have been used alone (without any contact fungicide) to stop previous scab epidemics in Michigan and Western NY, the results have generally been less than satisfactory.

Thus, I personally would gamble on options 1 or 2 rather than option 3.

Option 4: Apply captan at 50% of maximum label rate in combination with a full rate of dodine (Syllit).

This is an extremely risky approach because we cannot accurately predict which orchards have dodine resistance. However, if you have not used ANY dodine, not even in the first spray of the season, for at least 10 years, then this approach might be very effective. Only one spray of dodine should be applied and the follow-up

SEE APPLE SCAB ON PAGE 5

Nectria Twig Blight

Dave Rosenberger, Ph.D., Specialist in Tree Fruit Plant Pathology, NYAES, Cornell Cooperative Extension

Reprinted from SCAFFOLDS Fruit Journal, Geneva, NY Volume 12, No. 14, June 16, 2003, Cornell Cooperative Extension:

<http://www.nysaes.cornell.edu/ent/scaffolds>

Technical Editor's Note: Several samples of apple from two orchard locations: Rutgers Snyder Farm, Hunterdon County, and Middlesex County are suspected to be Nectria canker. The samples mimic fireblight with the typical shepherd's crook. However, the cultivars were Enterprise (highly tolerant to fireblight) and Empire (rarely gets fireblight) which lead us to believe we were dealing with Nectria. Samples have been submitted to the Rutgers Diagnostic lab for conformation. Growers may also wish to use the Rutgers Plant Diagnostic Laboratory (a fee based service) to confirm disease problems:

<http://www.rce.rutgers.edu/plantdiagnosticlab>.

Nectria Twig Blight is caused by the fungus *Nectria cinnabarina*. Symptoms of this disease appear in orchards during June and are easily confused with the shoot blight phase of fire blight. With both diseases, scattered terminal shoots wilt and produce a typical shepherd's crook at the end of the affected shoot. Fire blight infection is a serious problem, whereas the Nectria twig blight rarely causes economic damage.

The best way to differentiate the two diseases is to check for characteristic symptoms of Nectria twig blight. *N. cinnabarina* usually infects twigs through apple fruit stems that were left in the tree during the previous year's harvest. Infections are more common following years when rapid temperature drops in late fall or early winter may have contributed to winter kill of the infected stems. The fungus moves from the infected fruit stem into the subtending node. Sometime during June of the following spring, the fungus succeeds in girdling the stem at the node and the shoot beyond that node wilts and dies. Unlike fire blight infections, the *Nectria* infection rarely extends more than one or two inches beyond the node. The margins of *Nectria* cankers are usually more distinct than are margins of fire blight cankers at this time of year.

Within several weeks (by mid-July), nodes infected by *N. cinnabarina* will develop orange sporodochia, a kind of spore-producing structure.

The presence of orange sporodochia on nodes below wilted twigs further differentiates these infections from fire blight.

Nectria twig canker is most common on terminal-bearing cultivars such as Rome Beauty, but it also occurs occasionally on other varieties such as Fuji and Empire. Fungicide sprays are not effective for controlling Nectria twig blight. Dead twigs can be removed during summer pruning or during dormant pruning the following winter. Leaving infected twigs in the tree during summer and fall does not have any significant effect on the spread of this disease because the disease is more limited by fall/winter weather conditions than by presence of inoculum. *N. cinnabarina* colonizes many species of trees and shrubs, so inoculum is available from many sources other than apple trees.

Submitted by Win Cowgill, Agricultural Agent. □

LAUNDERING FROM PAGE 2

- Run the empty washer through a full/wash rinse cycle afterward.

Instructions for Cleaning Protective Equipment

- Wear rubber gloves while cleaning equipment.
- Wash hard hat or waterproof hat, goggles, face shield, apron, boots with hot soapy water, rinse and dry.
- Wash the respirator face-piece only. Before cleaning, remove the cartridges.
- Wash the respirator in warm soapy water, rinse and air-dry.
- Check seals and valves for signs of damage or wear.
- Store the respirator and cartridges in a sealed plastic bag.
- Last wash your gloves with hot soapy water, rinse and dry.
- Inspect and replace any worn or damaged protective equipment.

Adapted from the Institute of Rural and Environmental Health, University of Saskatchewan by Craig Hollingsworth.

Submitted by Win Cowgill, Agricultural Agent. □

APPLE SCAB FROM PAGE 4

spray should be the full rate of captan because a single spray of dodine may be enough to re-select for dodine-resistant strains that survive at low levels in most orchards. *Note: we also have dodine resistance throughout New Jersey.*

Unfortunately, some orchards may already have so much scab that spending more money for fungicides will only increase costs for a crop that is already lost. In cases where a significant number of fruit already have visible scab, one must assume that additional fruit may soon develop symptoms from infections that occurred last week unless heroic measures have already been employed to save the crop. There is no point in spending big dollars for SI or strobilurin fungicides for a crop that will not pay for itself.

Also an issue is the re-entry considerations for captan, which is now 96 hours if hand-work needs to be done in an apple block.

Submitted by Win Cowgill, Agricultural Agent. □

Fruit IPM

Dean Polk, Fruit IPM Agent

Peach

✓ **Oriental Fruit Moth (OFM):** We are now at just over 900 DD since biofix in southern counties, about 835 DD in central counties, and just over 700 DD in northern counties. Second generation treatments will be due at degree day accumulations of 1100–1200DD, and again at 1450-1500 DD. This will be about 6/25 in southern counties, and about 6/29-30 in central counties.

✓ **Tarnished Plant Bug (TPB) and Other Catfacing Insects:** Low amounts of catfacing injury were seen this past week. Since adults are present in the orchard, growers should be aware of any ground cover operations that can move insects into the trees. With the recent rains, many growers will wish to mow in the near future. Given the fact that adult TPB are present, mowings should always follow recent insecticide applications.

✓ **Thrips:** Thrips (adults) are being seen in clover ground cover in southern counties, and are starting to move into the trees and onto the fruit. One block of Eastern glo nectarines was seen yesterday with low numbers of thrips starting to get established. Growers in this instance should plan on including a thrips material in their next cover spray, or budgeting 2 applications for thrips prior to mid July.

✓ **Plum Curculio (PC):** The 340DD spraying cutoff (last sprays applied within 10-14 days after cutoff) was reached last week in southern and central counties, and today in northern counties. No new fruit injury was seen this past week.

✓ **Green Peach Aphids (GPA):** GPA are still present, but are at less than 6 colonies per tree in most cases. One orchard in the southern part of the state and one site in the northern section still show populations (7-8 colonies per tree) above treatments level.

✓ **San Jose Scale (SJS):** Crawlers started to emerge early last week, and continue to emerge this week. Those growers who had scale problems last year should pay particularly close attention to this pest. If you were not able to get a good oil plus insecticide application on the dormant stage, then an application for the crawler stage is suggested. These applications should go on now in problem orchards.

✓ **Bacterial Spot:** Recent bacterial spot leaf symptoms showed up by Friday of last week. They were water soaked spots and had not progressed to shot holes yet. Only in one orchard where black tip had been noticed were the symptoms advanced to the shot hole stage. This orchard also had a suspect fruit lesion. Last week's hot and humid weather along with frequent heavy downpours made for optimum conditions. Gloucester County had several rain events culminating with 1.3" rain Thurs. evening and 2" rain Friday evening. Both were heavy

downpours. Dave Schmitt surveyed several Gloucester County sites on Saturday and found slight to moderate infections in some very susceptible orchards. Most were clean or had slight amount of symptoms. Orchards with sensitive varieties such as Laurol, Jersey Queen, and Blake should be covered prior to heavy rains. Recent reports on Tuesday indicate that new infections are widespread. One grower used a supplemental spray of Tencop *alone* @ a full 8oz./Ac and showed no phyto on the leaves. Growers should have a full cover protection of either Mycoshield or copper prior to predicted rain events.

✓ **Tufted Apple Budmoth (TABM):** Additional alternate middle sprays (standard insecticides) will be due in southern counties on or about (6/15 – 2nd spray), 6/20-21 (3rd), and about 6/25-26 (4th). These will be due in central counties on or about 6/14-16 (1st), 6/21 (2nd), 6/26-27 (3rd), and about 7/1-2 (4th). The 1st and 2nd treatments are due in northern counties on or about 6/19 and 6/24. If using Intrepid, then time 2 full cover sprays at 500 to 650DD (10-30% hatch), and again at 805-855DD (60-70% hatch). The first of these targets is just past (6/11-16) in southern counties, with the 2nd due around 6/22-24. In central counties the first target will be between 6/16-6/22, with the 2nd target falling around 6/29-7/2.

Apple

✓ **Codling Moth (CM):** Trap counts have increased and codling moth is becoming more active. Recent research done by Dr. Larry Hull in Pennsylvania has resulted in a new and improved codling moth model, which proposes that treatments be based on timings and insecticide type. Treatments should be applied full cover. If using standard insecticides (OPs, Carbamates, pyrethroids, and Avaunt), then treat at 250 DD after biofix and again at 550 DD (about 14+ days later). Timings would be backed up to 150DD and 450DD if using Assail, Confirm, or Intrepid. Our current degree day accumulations stand at: Southern Counties – 484DD, should be 550 by 6/21; Central Counties – 401DD, should be 550 by 6/24; Northern Counties – 307DD, should be 550 by about 6/22. The first treatments should have already been applied in all areas.

✓ **Green and Spirea Aphids (GAA, SA):** Aphid populations continue to increase, but most colonies are small with young predator populations. Given the efficiency of aphid predators, it may be well worth it to tolerate a few additional aphids.

✓ **Spotted Tentiform Leafminer (STLM):** First brood miners are mature, and are pupating and emerging as adult moths (see increased trap count for this week in southern counties). These will start to lay eggs in the near future. As those eggs hatch and the first sap feeding larvae emerge, 2nd brood mines will start to become visible on the undersides of the leaves. When an average of .5 to 1 total mines per leaf are present, then treatments

SEE IPM ON PAGE 7

IPM FROM PAGE 6

for STLM are justified. At the present time, populations are low and treatments are not needed.

✓ **Apple Scab:** Additional infections were seen this past week. With the recent heavy rains that provided the most recent infection periods, additional infections may become visible in about 10 days. Back to back SI or Strobilurin fungicides can deactivate scab lesions now present. For a full discussion of after infection/establishment scab control, please see accompanying article by Dave Rosenberger. Use extreme caution if using Syllit or Syllit combinations (option 4 in Dave’s article).

Blueberry

✓ **Redbanded Leafroller and Other Leps.:** Populations remain low with 31% of samples showing some fruit injury. No injury over .3% has been noted. The highest level seen relative to blossom/fruit clusters was .3 larvae per 100 clusters.

✓ **Cranberry Fruitworm (CBFW):** Trap counts have decreased slightly since last week. No additional sus-

pected fruit feeding has been seen.

✓ **Aphids:** Aphid populations have increased again this week. Aphid populations increased from being found in 73% of samples, up from 68% the previous week. Our benchmark of ‘over 10% of terminals infested’, remains at similar levels as seen last week. Some mixing problems have been reported with Provado use. Therefore, some growers have switched to Lannate for aphid control. However, the level of control is not as good.

✓ **Thrips:** Thrips numbers remain at low levels, and are present in about 26% of samples. About 6% of samples show thrips on terminal shoots along with the aphids. No visible injury is being seen that can be attributable to thrips.

✓ **Blueberry Maggot:** We now have a network of several hundred yellow sticky traps that have been placed for blueberry maggot adults. These are all on commercial farms, including 1 organic site. The first maggot adult should be present in traps any day.

Insect Trap Captures

Tree Fruit - Southern Counties

Week Ending	LPTB	PTB	OFM	TABM-P	AM	CM	DWB	OFM-A	STLM	TABM
5/9			56				129	137		
5/16			33	8			60	181	10	
5/23	44		17	10	2		20	55	5	
5/30	20		4	30	1		8	23	8	
6/6	35		4	32	2		12	13	16	
6/13	47	5	3	26	4		3	325	18	

Northern Counties

Week Ending	LPTB	PTB	OFM	TABM-P	AM	CM	DWB	OFM-A	STLM	TABM
5/23			6.3	4.1	4.6			59.3	10.6	
5/30			8.3	2.6	3.7			75.0	3.2	
6/6			8.2	6.4	5.6			7.0	6.0	
6/13	58.5		12.6	15.0	7.3			10.0	11.4	

Blueberry - Atlantic County

Week Ending	CBFW	RBLR	OBLR	SNLH	OB	BBM
5/9		83.6				
5/16	0.2	21.2				
5/23	0.05	4.0				
5/30	0.18	0.3				
6/6	0.08	1.0				
6/13	1.65	2.13				

Burlington County

Week Ending	CBFW	RBLR	OBLR	SNLH	OB	BBM
5/9		11.4				
5/16	0	6.4				
5/23	0.05	1.8				
5/30	0.2	0.3				
6/6	2.6	0.3				
6/13	3.36	0.0				

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