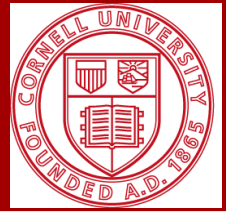




Photo: T. Marston

# FRUIT NOTES

## Lake Ontario Fruit Program



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### Spotted Wing Drosophila Update

Juliet Carroll, Fruit IPM Coordinator

From Scaffolds, July 21, 2014

Spotted wing Drosophila (SWD) is a destructive vinegar fly (fruit fly) recently introduced to North America from Asia. Females can slice directly into ripening fruit to lay eggs; about 7 to 16 per day. When populations build in late summer and early fall, soft fruit such as fall raspberry, blackberry, blueberry, elderberry, grapes, plums, cherries and peaches can be at risk of severe infestation.

Cornell University and Cornell Cooperative Extension established a SWD monitoring network in 2012. In 2014, monitoring for SWD is being done in Albany, Cayuga, Chautauqua, Chemung, Clinton, Columbia, Dutchess, Erie, Herkimer, Livingston, Monroe, Niagara, Onondaga, Ontario, Orange, Orleans, Rensselaer, Saratoga, Schuyler, Seneca, St. Lawrence, Steuben, Suffolk, Tompkins, Ulster, Washington, Wayne, Wyoming, and Yates Counties. Traps are checked once per week and results are posted on the SWD blog, <http://blogs.cornell.edu/swd1/>, which you can subscribe to for email alerts.

Four SWD, the first reported for of the 2014 growing season, were captured the week ending July 9. Two females in ripening summer raspberry in Suffolk County; one male in summer raspberry in Onondaga County; and one female in summer raspberry in Cayuga County.

Eleven SWD were captured the week ending July 17. One female in blueberry and one female in summer raspberry in Niagara County; one male in blueberry and one female in summer raspberry in Schuyler County; three females in summer raspberry, two SWD in woods, and three SWD in blueberry in Ontario County.



Photo: J. Carroll

SWD male and female



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*Building Strong and Vibrant New York Communities*

Diversity and Inclusion are a part of Cornell University's heritage. We are a recognized employer and educator valuing AA/EEO, Protected Veterans, and Individuals with Disabilities.

Every effort has been made to provide correct, complete, and up-to-date pesticide recommendations. Nevertheless, changes in pesticide regulations occur constantly, and human errors are still possible. These recommendations are not a substitute for pesticide labeling. Please read the label before applying any pesticide.

On Monday, traps in Monroe County had 3 SWD females. These are in the red raspberries adjacent to the blueberry field.

Sustained trap catch is a milestone often used in IPM for timing management tactics against insect pests. Insect traps in the SWD monitoring network are checked once per week until adult SWD have been caught for two consecutive weeks at that location, indicating sustained trap catch.

On the blog, we post SWD first catch reports. Some of these reports may not prove to be first sustained trap catch because SWD adults are not caught the following week. This was the case for the traps in Suffolk, Onondaga, and Cayuga Counties. No SWD adults were caught at these locations the week ending July 16, and in Suffolk County, no infested fruit was detected.

This indicates that SWD populations are still very low in NY. Cultural practices such as removing overripe berries from the planting, clean picking, dragging equipment across the ground to squash and break up dropped berries, etc., may provide some benefit, particularly in crops that are nearing the end of the harvest window, such as summer raspberries. Also, remove alternate weed hosts, pokeweed and bittersweet nightshade; from the area before these weeds develop fruit. Consider creative approaches to sanitation in U-pick plantings such as providing a discount on purchased fruit when the customer brings in an extra bucket of damaged and over-ripe fruit to the counter for disposal.

Keep track of fruit ripening in other susceptible crops and plan to protect these with insecticides in the coming weeks. [Berry insecticide tables](#) and [tree fruit and grape insecticide tables](#) are found on Cornell Fruit Resources. SWD populations and damage can increase dramatically with favorable weather and susceptible ripe fruits. Insecticide control requires frequent applications (5-7 day interval), so plan spray programs carefully to maintain coverage and optimize the utility of the applied materials. Rotate insecticide mode-of-action to avoid insecticide resistance.

More information on SWD can be found on the Cornell Fruit Resources' [SWD website](#), [www.fruit.cornell.edu/spottedwing](http://www.fruit.cornell.edu/spottedwing). An up-to-date distribution map for NY and the Eastern US can be found on the Cornell Fruit Resources [SWD Distribution page](#), courtesy of the Southern Region IPM Center and the University of Georgia Center for Invasive Species and Ecosystems Health. And don't forget to subscribe to the blog, <http://blogs.cornell.edu/swd1/>.

## New Hire Checklist

Alison DeMarree

**1. At hiring**, the farm employer should make a folder for each employee and include:

- \_\_\_\_\_ A. Emergency Contact Form: Whom to contact on behalf of the employee
- \_\_\_\_\_ B. I-9 Employment Eligibility Verification
- \_\_\_\_\_ C. W-4 Federal Employee Withholding Certificate
- \_\_\_\_\_ D. IT-2104 New York State Employee's Withholding Allowance
- \_\_\_\_\_ E. **NYS LS-309 or LS-309S** Pay Notice & Work Agreement for Farm Workers upon hire AND annually by February 1 of each year. Give one copy to the employee and keep a copy of the employee signed form in your files for 6 years.

**OR AL790.1 for H-2A workers**

- \_\_\_\_\_ F. Acknowledgement of receiving OMB #1215-0146 (Housing Terms & Conditions) – at recruitment or at hire
- \_\_\_\_\_ G. Signed authorization for any deduction other than those required by law. This must be for employee’s benefit and has a maximum of 10% of gross wages (**NYS no longer allows payroll deductions for loan repayment to farm employers**)
- \_\_\_\_\_ H. For Youth: Please note: employers must obtain permission to pay special training wages below the minimum wage and strictly follow the regulations.
- Date of birth for youth employed at youth rate
  - Work Permit for youth under 16 yrs. is available from their school. Growers must have a copy of the work permit on file. The work permit will list you as the student’s employer.
    - Are prohibited from hazardous work (see 4)
    - No more than 3 hours on a school day; 18 hours in a school week; 8 hours on a non-school day; or 40 hours in a non-school week. Pay strict attention to the regulated hours as they change based upon time of year.
- \_\_\_\_\_ I. NYS Department of Taxation and Finance New Hire Report filed within 20 days.
- \_\_\_\_\_ J. Health Insurance Notice: Forms available from federal website – ALL employees must receive a notice that you DO or DO NOT provide health insurance (separate forms) upon hire regardless of the number of employees you hire.
- If you have fewer than 50 FTEs you are **required to notify the employee that they are required to obtain federally approved health insurance for themselves or face fines.**
- They may find Health insurance at <https://nystateofhealth.ny.gov/>

**2. First Day Job Training and Orientation**

- \_\_\_\_\_ A. Tell the employee who their supervisor will be. We recommend only one supervisor per person.
- \_\_\_\_\_ B. Show where the information is kept on:
- List of hazardous conditions (see 8).
  - Location of Material Safety Data Sheets (MSDS) for all chemicals.
- \_\_\_\_\_ C. Show location and use of personal protective equipment required for use on the job
- \_\_\_\_\_ D. Keep a file on job training, especially as it relates to safety (when it was done, and what was taught). Have employees acknowledge that they understood the training on a training acknowledgement roster at the completion of training. We recommend that equipment operation training have a checklist of skill competencies, and check-off acknowledging that the employee is competent in that skill before the employee is allowed to operate tractors or specific pieces of equipment.
- \_\_\_\_\_ E. Procedures in the event of injury or illness. How to call the ambulance and location of the closest Hospital
- \_\_\_\_\_ F. Worker Protection training if they will be near pesticide applications, and higher level if they will be applying pesticides. We recommend that all employees applying chemicals are certified by NYS DEC as private applicators for the type of crop on which they will be apply pesticides
- \_\_\_\_\_ G. Notify all employees that **NYS requires you to give employees a 30 minute lunch hour/break after 6 hours of work.** All employees MUST take this break after working 6 hours (no working through the lunch hour break!).

### 3. Farm Employee Pay Issues – be sure to include for each payroll period:

#### \_\_\_\_\_ A. *Employee Wage Statements*

- Name and address of employer
  - Name of employee
  - Rates paid
  - Gross Wages
  - Deduction and allowances
  - Net wages
  - Number of hours worked (even if piece rate as must cover minimum wage no matter what). If a piece rate, you also need number of pieces produced, piece rate paid, and size or weight of piece rate units.
- If any of your production is sold out of state, you must also have the employee's address on the wage statement (under the federal Fair Labor Standards Act).
- Daily hours offered and hours worked for H-2A workers and domestic workers doing the same work as the H-2A employees

#### \_\_\_\_\_ B. *Payroll Records*

- Name and address of employee
- Social Security number
- Total hours worked daily and weekly
- Daily start & end times for each employee if any of your production is sold out of state (Fair Labor Standards Act)
- Gross wages, deductions, net wages
- Allowances claimed as a part of minimum wage
- Cash advanced
- Wage rates
- If paying by piece rate, keep record of units produced daily and weekly for each employee along with size or volume of containers
- Daily hours offered and hours worked for H-2A workers and domestic workers doing the same work as the H-2A employees

### 4. Hazardous Agricultural Jobs

- Operating a tractor of over 20 PTO horsepower, or connecting or disconnecting an implement or any of its parts to or from such a tractor;
- Operating or working with a corn picker, grain combine, hay mower, forage harvester, hay baler, potato digger, feed grinder, crop dryer, forage blower, auger conveyor, unloading mechanism of a non-gravity-type self-unloading wagon or trailer, power post-hole digger, power post driver, or non-walking-type rotary tiller;
- Operating or working with a trencher or earthmoving equipment, fork lift, potato combine, or power-driven circular, band or chain saw;
- Working in a yard, pen, or stall occupied by a bull, boar, or stud horse maintained for breeding purposes; a sow with suckling pigs; or a cow with a newborn calf (with umbilical cord present);
- Felling, bucking, skidding, loading, or unloading timber with a butt diameter or more than 6 inches;
- Working from a ladder or scaffold at a height of over 20 feet;
- Driving a bus, truck or automobile to transport passengers, or riding on a tractor as a passenger or helper;

- Working inside: a fruit, forage, or grain storage designed to retain an oxygen-deficient or toxic atmosphere; an upright silo within 2 weeks after silage has been added or when a top unloading device is in operating position; a manure pit; or a horizontal silo while operating a tractor for packing purposes;
- Handling or applying toxic agricultural chemical identified by the words "danger," "poison," or "warning" or a skull and crossbones on the label;
- Handling or using explosives; and
- Transporting, transferring, or applying anhydrous ammonia.

## Pest Update

Art Agnello and Deborah Breth

**San Jose Scale** trap catch is increasing in Geneva traps. So we will be planning well-timed summer sprays at 1st and peak (7-10 days later) crawler activity normally late July to early August. Suggested insecticides effective for summer crawlers include Admire, Assail or Imidan rated as moderate in efficacy. Movento, Esteem, or Centaur are rated high in efficacy. Two sprays are typically needed against first and peak (7-10 days later) crawler activity in both generations. Endigo, Leverage, and Voliam Xpress also have moderate efficacy on SJS. Suggested action threshold: 1-2 crawlers/trap (sticky tape around limb). The addition of horticultural oil will improve performance of Assail. Movento must be used with a spray adjuvant having spreading and penetrating properties; most effective when used at petal fall to first cover. Spray coverage must be great!

**Dogwood Borer** peak hatch will be roughly: July 31 for which trunk sprays are necessary.

**Codling moth** development as of July 21: 2nd generation adult emergence at 7% in Geneva and 2nd generation egg hatch at 0% in Geneva. The 2nd generation 7%

CM egg hatch: July 31 is the target date for first spray where multiple sprays are needed to control 2nd generation CM. But if high trap counts last week, maintain insecticide residues.

**Apple maggot adults** are flying and red ball traps will be helpful in determining the need for specific insecticides that will control maggot adults. Delegate and Altacor have some activity against apple maggot but should not be relied upon for high pressure from apple maggot near abandoned sites. Imidan, Assail and Calypso will provide better control of AM under high pressure, as well as pyrethroids on a tighter schedule. Watch preharvest intervals.

**Black Stem Borer update:** We have been trapping this insect in several sites across the region and there was a peak emergence in early June. Trap captures continue this week indicating we are catching the adults that emerged from the first generation of eggs. In orchards where this pest has infested trees, Art Agnello reminded me that Warrior II and Grizzly are labeled for "tree borer species" but we have no experience or efficacy data for these insecticides against this pest. Art Agnello, Kerik Cox, and I are working on this pest to better understand the biology and identify viable controls. [If you see these pests call us so we can document the economic damage and](#)

continue work on this pest and get some funding to expand our efforts to work on this pest. For more information on this pest, read [Scaffolds](#).

**Summer disease** pressure is pretty high with the consistent rainfall this season. [Dave Rosenberger reviewed the recommendations in Scaffolds back on Jun 23.](#) Topsin M (12-16 oz./a) + Captan: Standard treatment for SBFS and summer fruit rots, but late-season applications of Topsin M are not acceptable for some markets, and the Topsin M label limits applications to a total of 64 oz/A/year. Captan plus a labeled phosphite fungicide: This combination is just as effective as

Topsin + Captan against SBFS, but the phosphites have little or no activity against black rot. Inspire Super + Captan: Inspire Super is very effective against SBFS, but like the phosphites, it is less effective than Topsin or strobilurin fungicides for controlling fruit rots. Flint + Captan, Pristine + Captan, and Merivon + Captan all provide nearly equivalent control of both SBFS and summer fruit rots. The latter two have better long-term residual activity than Flint and are therefore preferred for the last spray in August or September, when a long residual is needed to cover the gap until harvest.

## **Sunburn – Will Your Apples Be Using Sunscreen this Season?**

Mario Miranda Sazo

Heat stress and/or high solar radiation can induce in-field damage to apples (here referred to as “sunburn”). Considerable research on sunburn has been done in dry climates like Washington State, but damage levels and control techniques have not been well-studied in humid, eastern orchards. Sunburn is not always easy to see or obvious on the skin. It can range from a cosmetic (light severity) issue to severe eventual decay (very severe) affecting the most profitable varieties (in the orchard and during storage). I am not aware of any academic research and/or extension effort on this topic in the Northeast or elsewhere. Damage levels in NY appear to be significant in some areas with our warming climate (particularly the Hudson Valley) and more recently in the Lake Ontario Fruit region in the past three years. This issue has increased with the introduction of more susceptible varieties and narrow canopy growing systems. Fresh apple varieties including Honeycrisp, Fuji, Jonagold, Crispin, and Gala are susceptible to sunburn and are very profitable varieties.

Sunburn of apples is a physiological disorder caused by heat and/or light stress. In the orchard, direct

sunlight under hot air conditions can increase skin temperature of exposed fruit by 25-30° F. This means that under very average weather conditions sunburn can occur and significantly result in large economic losses to growers. In recent years, fruit growers from Western NY and the Hudson Valley have mentioned the increase of fruit sunburn due to hotter summers. Dr. Dave Rosenberger has also observed a greater incidence of bitter rot in the Hudson Valley. He believes that sun-exposed fruit on drought-stressed trees may be particularly susceptible to bitter rot because they may overheat more than fruit on trees with an adequate water supply. Honeycrisp and newer bi-color cultivars may be more likely to show increased susceptibility to bitter rot following heat stress, probably because some cultivars are more prone to heat stress damage and/or are more susceptible to bitter rot than other cultivars.

While sunburn controlling products are needed, specific rates and timing of such products are very important as to not adversely affect fruit finish or delay fruit maturity. The federal labeled rates of sunburn products are not necessarily correct for the

Northeast. Some growers have had significant profit loss of high value varieties due to fruit finish issues such as russet or lenticel damage when too much of a sunburn material was applied. More research needs to be done on varieties that typically have large lenticels, such as Gala, Fuji, Honeycrisp, and SweeTango. The priorities of these trials would be to decrease sunburn while not damaging the lenticels or delaying fruit maturity. Production of these varieties is increasing which will drive the need for high quality fruit for maximizing profit in the future. Most of the new varieties coming to market in the next few years have at least one of these varieties as a parent. This makes it even more critical to define correct rates and timings of sunburn materials now for these varieties already in production under NY apple growing conditions. I am sure more WNY fruit growers will continue trying "sunblock" materials (kaolin material, calcium

carbonate material) to reduce sunburn on sensitive cultivars this 2014 season. Some material labels suggest first applications be made at around this timing. Other labels suggest the first application at 7, 8, 9 weeks after full bloom with a second application 7 to 10 days later. I have very limited experience in our climate with these materials, but some growers have informed me that some of these sprays delayed color development, maturity, and affected fruit finish. My best advice is to read the label and follow directions for the several sunblock materials available in the market. Keep an eye on the updated forecasts in case you plan on testing these materials on limited areas this season. Don't forget to leave an untreated area for comparison. Please call me to evaluate sunburn control during August and before harvest.

## Apple Summer Pruning

Mario Miranda Sazo

**Note:** I recommend you wait more as new shoot growth will occur with the last rainfall occurred in the last few days.

Dr. Lakso reminds growers that excess summer pruning can have a significant inhibition of canopy photosynthesis and support for final sizing of the crop. This may not be so important if you have a light crop, but if it is a heavy crop that is already struggling to make size, excess summer pruning may hurt. His research has also found that leaves that are shaded most of the season lose photosynthetic capacity so even after they are re-exposed by summer pruning they don't recover. So even if the tree can capture about the same amount of sun energy, it can't make as many carbohydrate as before. As canopies have become denser this season, an excessive summer pruning could cause

significant losses in canopy photosynthetic activity

which results in a potential shortage of carbohydrate supply for final fruit size. Please consider the following recommendations as prepared by Steve Hoying: (1) summer prune very carefully this 2014 season!, (2) if done improperly, you can remove too much new shoots on the main trunk which are critical as replacement branches for limb renewal pruning of Tall Spindle and Vertical Axe apple trees, (3) Do not summer prune apple trees until they have filled their allotted space (you can start @ August 10-15), (4) Start summer pruning AFTER the terminal bud shoots have stopped growing, (5) Generally, early maturing varieties should be pruned first, (6) Do as little cutting as possible when summer pruning, and (7) Cut into two year old or older wood.

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# "Congrats Alison and Steve"

