

# **FRUIT NOTES**

Lake Ontario Fruit Program

Volume 13 Issue 15



June 26, 2013

### Pest Update - What am I seeing?

D. Breth



**Bacterial spot on peaches and plums:** This is a bacterial disease caused by *Xanthemonas campestris* on peaches, nectarines, Japanese plums, and apricots, but European plums are generally less susceptible than Japanese plums. Cultivars among these stone fruit crops vary widely in rating for resistance vs. highly susceptible. This is one disease if present in orchards you will not want to collect budwood from. The spots can occur on leaves and fruit, but bacteria overwinter on twigs invading through leaf scars in the fall. Infected cankers on twigs serve as primary inoculum source during the growing season. Periods of frequent rain during

late bloom to a few weeks after petal fall is when peaches and nectarine fruit are most susceptible to infection. Copper is used <u>during</u> leaf fall (not like leaf curl sprays after leaves fall) and is recommended again in early spring. Kocide is registered for use on bacterial spot at petal fall and during the growing season using .25-.5 lb./acre on peaches, but could result in defoliation due to copper phytotoxicity. Copper is only registered on apricots, plums, and prunes up to early bloom but you might still see some phyto. During the growing season, oxytetracycline, dodine plus captan (but watch for captan sensitivity in plum cultivars) and Ziram containing zinc have been used with varying success. Unfortunately, no oxytet is labeled for use on plums- only peaches and nectarines. Syllit is only registered for use on peaches for leaf

curl just before budswell. Ziram is registered on peaches, nectarines, and apricots, but not plums and prunes. See more on susceptible varieties: <a href="http://msue.anr.msu.edu/news/management">http://msue.anr.msu.edu/news/management</a> of bacterial spot on peac <a href="http://msue.anr.msu.edu/news/management">http://msue.anr.msu.edu/news/management</a> of bacterial spot on peac <a href="http://msue.anr.msu.edu/news/management">http://msue.anr.msu.edu/news/management</a> of bacterial spot on peac

### New/young trees:

The rains have certainly encouraged the weeds to grow in these new plantings and I have seen too much weed pressure stealing the nutrients and water, and then the deer come and steal the leader! The weeds will need to be burned back using paraquat with some Prowl or Surflan but be careful with this heat wave – I have seen some bark "cornflaking" from paraquat applications if there is no bark protection on green bark in new plantings.

I have also seen more fire blight in young plantings than I am comfortable with. These hot, and high humidity conditions are very good conditions for fire blight. Be careful when you send workers through to select leaders since any cutting and wounding (including deer feeding) can certainly spread fire blight down the row. Give them a roll of flagging tape so if they see a tree with fire blight, they can mark the tree, skip it, and remove infected trees at the end of the day. <u>Do Not</u> try to cut fire blight out of a new /young planting! Be very aware that



Cornell University Cooperative Extension

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#### Building Strong and Vibrant New York Communities

Cornell Cooperative Extension provides equal program and employment opportunities. NYS College of Agriculture and Life Sciences, NYS College of Human Ecology, and NYS College of Veterinary Medicine at Cornell University, Cooperative Extension associations, county governing bodies, and U.S. Department of Agriculture, cooperating. 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.

streptomycin is not the material of choice for protection at this time (unless you have a hail storm) since multiple shoot blight sprays are the reason why many other fruit growing areas have streptomycin resistance. Use low rates of copper formulation which have an "extended spray schedule" listed on the label and apply with low water volume especially in young trees.

When you think you are getting close to 18-24 inches of shoot growth, I would even try shutting down growth with Apogee (6-8 oz./acre) especially if you are already fighting fire blight in the planting although you will not likely get any benefit for about 2 weeks after application. If you have fire blight in young trees, please call Debbie (585-747-6039) and submit a sample for streptomycin resistance testing.

**Potato leafhoppers** have arrived and along with aphids can be controlled in nonbearing trees using imidacloprid, Assail or Calypso. **Obliquebanded leafroller** sprays will be necessary when we reach about 500-600 DD 43F after biofix, which in most sites is about June 7-10.

Codling moth egg hatch is heavy right now and trap numbers are hitting the "B" peak for the first flight. For those of you with a heavy population, continue to maintain insecticide coverage for the eggs that are hatching from the June 10 trap numbers (we have accumulated another 250 DD 50F since that flight) and then more eggs hatching from the "B peak". If you had high populations last season and trap counts continue to be high this season you will likely need a third spray for first generation of codling moth (maybe 4 if one of them got rained off in early June). If traps continue to catch more than 5 moths per trap per week, you should maintain insecticide coverage for this first generation so you can reduce the population in the second generation which we are typically trying to control in early August. If you do not control the first generation, the second generation sprays will be much more spread out and more difficult to control. Delegate, Altacor, Belt are still the best choices if

you have high CM pressure. Codling moth sprays will be well timed to coincide with leafroller sprays.

**Obliquebanded leafrollers** are flying and biofix for the degree-day timing model in early sites was Jun 6, and the rest of the flights started between Jun 6 and June 10. We have accumulated approximately 350 43°F and have first egg hatch, but it is still difficult to find them in terminals until about 400 DD 43°F with high populations. We will accumulate another 200 DD in the next 7 days by Jul 1 getting us to the 500-600 DD range for OBLR insecticide applications. Happy July 4<sup>th</sup>! Orchards with a lot of OBLR damage in the past should be starting now at early egg hatch for this pest and follow up 10-14 days later for the next spray.

**Scout for mites in tree fruit crops.** In apples, the treatment threshold will change from 2.5 mites per leaf to 5 mites per leaf starting in July. I am hearing about flare-ups and they should be treated before the bronzing and leaf drop.

**Plant/stink bugs** will be more active in stone fruit especially if disturbing the ground cover by mowing. Therefore be sure to apply insecticide before mowing so you do not drive the insects up into the trees.

Berry rots and bugs! These are especially good conditions for anthracnose in blueberries which are susceptible to infection even as green fruit which will remain latent until the sugars start to build in the fruit. Switch (0 days PHI), Pristine (0 days PHI), Quash (7 days PHI), or CaptEvate (0 days PHI) can be used in rotation on a 7-10 day schedule when we have warm, rainy weather. Indar has a **30 day** PHI. The first report of a single spotted winged drosophila (SWD) female was made in Ontario County, and more reports in the Hudson Valley but no egg laying detected yet in any berry crops in HV as of Tuesday, Jun 25. Stay tuned and the most up-to-date information will be posted on http://blogs.cornell.edu/swd1/. This website is packed with links to more information and SWD detection reports.

### The Truth in Black and White

Art Agnello

It is once again the time of year when we expect the first appearance of apple maggot (AM) flies in wild apple trees and abandoned orchards. Crop scouts and consultants have used traps to monitor AM populations for a long time, but this approach, useful as it is, nevertheless is not recommended in all cases. Some orchards have such high or such low AM populations that monitoring for them is not time-efficient. That is, in some blocks, sprays are necessary every season, often on a calendar basis; however, in some blocks the populations are so low that they are rarely needed at all. However, most commercial N.Y. orchards have moderate or variable pressure from this pest, so monitoring to determine when damaging numbers are present helps growers to apply only the number of sprays necessary to protect the fruit from infestation.

Sticky yellow panels have been in use for over 50 years, and these can be very helpful in determining when AM flies are present. Adult flies emerge from their hibernation sites in the soil from mid-June to early July in New York, and spend the first 7–10 days of their adult life feeding on substances such as aphid honeydew until they are sexually mature. Because honeydew is most likely to be found on foliage, and because the flies see the yellow panel as a "super leaf", they are naturally attracted to it during this early adult stage. A few of these panels hung in such an orchard can serve as an early warning device for growers if there is a likely AM emergence site nearby.

These adults begin searching for fruit after about 7-10 days of feeding when they are ready to mate and lay eggs. To attract the adult flies ready to lay eggs, traps have been developed in the form of a "super apple" — large, round, deep red, and often accompanied by the scent of a ripe apple — in an attempt to catch that first AM fly in the orchard. Because this kind of trap is so much more efficient at detecting AM flies when they are still at relatively low levels in the orchard, the traps can usually be checked twice a week to allow a 1–2-day response period (before spraying) after a catch is recorded, without incurring any risk to the fruit. Research done in Geneva over a number of years indicates that some of these traps work so well that it is possible to use a higher threshold than the old "1 fly and spray" guidelines recommended for the panel traps. Specifically, it has been found that sphere-type traps baited with a lure that emits apple volatiles attract AM flies so efficiently that an insecticide cover spray is not required until a threshold of 5 flies per trap is reached.

The recommended practice is to hang three volatile-baited sphere traps in a 10- to 15-acre orchard, on the outside row facing the most probable direction of AM migration (towards woods or abandoned apple trees, or else on the south-facing side). Then, the traps are periodically checked to get a total number of flies caught; dividing this by 3 gives the average catch per trap, and a spray is advised when the result is 5 or more. Be sure you know how to distinguish AM flies from others that will be

collected by the invitinglooking sphere. There are good photos for identifying the adults on the Apple Maggot IPM Fact Sheet (No.



102GFSTF-I8); check the web version at: <u>http://www.nysipm.cornell.edu/factsheets/tre</u> <u>efruit/pests/am/am.asp</u>.

A variety of traps and lures are currently available from commercial suppliers, among them: permanent sphere traps made of wood or stiff plastic, disposable sphere traps made of flexible plastic, and sphere-plus-panel ("Ladd") traps. The disposable traps are cheaper than the others, of course, but only last one season. Ladd traps are very effective at catching flies, but are harder to keep clean, and performed no better than any other sphere trap in our field tests. Brush-on stickum is available to facilitate trap setup in the orchard. Apple volatile lures are available for use in combination with any of these traps. These tools are available from a number of orchard pest monitoring suppliers, among them:

• Gempler's Inc., 100 Countryside Dr., PO Box 328, Belleville, WI 53508; 1-800-382-8473, Fax, 1-800-551-1128 <u>http://www.gemplers.com/</u>

• Great Lakes IPM, 10220 Church Rd. NE, Vestaburg, MI 48891; 800-235-0285, Fax 989-268-5311 http://www.greatlakesipm.com

• Ladd Research Industries Inc., 83 Holly Court, Williston, VT 05495; 800-451-3406, Fax 802-660-8859 <u>http://www.laddresearch.com</u> By preparing now for the apple maggot season, you can simplify the decisions required to get your apples through the summer in good shape for harvest.

Insecticides for control of apple maggot include: Assail, Calypso, Imidan, and pyrethroids such as Baythroid, Danitol, and premixes which include a pyrethroid, Endigo and Voliam Xpress. Be sure to use the rate that is on the pesticide label for apple maggot control. Delegate and Altacor will suppress apple maggot in low pressure situations when used for codling moth but not be sufficient for control under high pressure.

### Hand Thinning for Precision Crop Load Management

Stephen A. Hoying and Terence L. Robinson

Hand thinning to improve fruit quality is a common practice in the apple industry across the United States. It is viewed as the last chance to reduce crop levels to acceptable levels. Hand thinning is widely practiced because of the fear of over-thinning chemically. It is viewed as a necessary evil especially for high valued cultivars such as Honeycrisp and Gala. However, when significantly more fruit remains than is needed to produce a quality fruit crop it can be very expensive. The object is to accomplish most of the thinning using pruning and chemical thinning with hand thinning as a final "touch up".

The practice of hand thinning can be beneficial to increase fruit size and color by singling fruit within the cluster, by balancing the number of resting spurs with fruitful ones ensuring return bloom, by improving pest control by exposing clustered fruit, and in young trees by balancing continued growth with cropping to help fill out the canopy.

Hand thinning can take place anytime during the growing season between fruit set and harvest. Early hand thinning, before fruit bud initiation, will not only help prevent bienniality but give the maximum fruit size improvement. Hand thinning later in the growing season only helps to marginally increase fruit size and can be used to grade fruit by removing damaged fruit but will not contribute to return bloom.

### **Procedures for Precision Hand Thinning**

- Select 15-20 representative trees throughout the block to be hand thinned and count all the fruit that remain on the tree after chemical thinners have had their effect.
- Refer to the previous calculations made prior to pruning that determined the total number of apples desired per tree to achieve the fruit size and yield desired.
- Subtract the desired number of fruit from the total number of fruit counted per tree to determine the number of fruit that need be removed from each tree.
- 4. First single all fruit on the tree and then recount to see how close the number of remaining apples is to the targeted fruit number. Calculate how many fruit still need to be removed to reach the target number of fruit.
- 5. Finish by removing additional apples to reach the final target. Remove the smallest apples first, then space fruit apart.

### An example:

- Counts from 20 representative trees show that there are 154 fruit remaining on the tree after pruning and hand thinning. The target number of fruit needed to produce 1200 bushels of 100 count fruit from the previous example was 100 fruit per tree.
- 2. By subtracting 100 fruit from the 154 fruit remaining we know we must remove 54 fruit.
- 3. By singling fruit we find that we remove 36 fruit therefore we need to remove an additional 18 fruit in each tree.
- 4. We then choose 18 more fruit to remove selecting those that are the smallest fruit or those that are clustered and touching.

The simplest method for thinning is to use some sort of an area template so that people who are hand thinning know how many fruit should be within a smaller but specific area of the tree. In trellised blocks this might be the area between two adjacent trees and two adjacent trellis wires. For example, a four wire trellis will have 3 sections between wires and a 5 wire trellis will have 4. The distance between the tree trunks equals the area occupied by an individual tree. Therefore counting all the apples between the tree trunks will equal all the apples on a single tree. From our previous example, we know that we want 100 apples on each tree. If we have 3 sections then we must have 33 apples in each section of the 4 wire trellis and 25 apples in each section of the 5 wire trellis (a few additional apples will be between the bottom wire and the ground and above the top wire). It is very simple to count the number of apples in each section and adjust the amount of hand thinning to achieve this target.

To estimate apple numbers on individually staked trees is not as simple but because of the relatively small number of apples on each tree is not an onerous task. In this case, make quick counts of the number of fruiting shoots on each tree and divide the number of apple by the number of shoots to determine how many

apples should be on each shoot. The typical tall spindle will have 20-25 fruiting shoots per tree. Therefore if our target is 100 fruit per tree there should be 4 to 5 apples per shoot. Simply have people who are hand thinning reduce fruit numbers to 4-5 per shoot by first singling fruit on spurs then by spacing fruit where they are touching along each shoot. Recount and adjust hand thinning depending on the results to achieve the targeted number of fruit per tree. Hand thinning is not new and is widely practiced; however implementing a procedure to count fruit and reduce fruit number to a targeted number is new for most growers. Improving precision by counting and targeting fruit numbers will improve profitability. Fruit growers could implement this or a similar method to accurately count fruit and see an immediate impact on their profitability.

#### **Economic Example**

Estimates are made and the targeted numbers of fruit that need to be removed are 54 fruit per tree. To get this estimate would require 1.5 hours of counting and recording data or about \$15 which is essentially insignificant. Grower A counts fruit and readjusts hand thinning to achieve his goal resulting in 1200 bushels of 100 count fruit for a return after packing and sales charges of \$19,200. The cost of hand thinning for grower A was \$500/acre so the net is \$18,700/acre. Grower B does only touch up thinning to breakup multiple fruit per spur. This reduces the crop to 145 apples per tree and because of the high fruit number per tree fruit size is reduced to 140 count fruit with only a modest increase in yield to 1253 bushels per acre. This increase in yield and reduction in fruit size returns Grower B \$17,545 in this example. His cost of hand thinning for this block was \$100/acre. The net return then was \$17,454. By not accurately counting apples and hand thinning to the most profitable crop load Grower B left more than \$1,091 in the orchard. As is evident from this example the consequences of not accurately hand thinning is very costly!

## Predicted CA McIntosh Cutoff Dates

Craig Kahlke

NEWA Weather	Predicted CA	Predicted CA	
Station	Cutoff Date	Cutoff Date	
	2013	2012	
Albion	Sept. 20	Sept. 8	
No. Appleton	Sept. 23	Sept. 8	
So. Appleton	Sept. 22	NA	
Williamson-Motts	Sept. 22	Sept. 5	
Knowlesville	Sept. 18	Sept. 5	
South Sodus	Sept. 20	Sept. 6	
Lyndonville	Sept. 19	Sept. 6	
Williamson-	Sept. 21		
DeMarree		Sept. 5	
Ransomville	Sept. 20	Sept. 6	
Somerset	Sept. 21	Sept. 6	
Lafayette	Sept. 20	Sept. 4	
Baldwinsville	Sept. 19	Sept. 3	
Ashwood	Sept. 20	Sept. 7	
Kendall	Sept. 21	NA	
Sodus-DeBadts	Sept. 21	NA	
Medina	Sept. 20	NA	
AVG. CA Cutoff	Sept. 20	Sept. 5	
AVG. CA Cutoff (last 5 yrs AVG) Sept. 18			
AVG. CA Cutoff (25 yr AVG) Sept. 23			

Table 1.	Predicted McIntosh CA Cutoff Dates.	
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This prediction model is used to estimate the latest dates by which McIntosh should be harvested if they are going to be stored under CA conditions. Averaging the last dates for CA cutoff from the earliest inland sites to the latest lake sites is also called the centering date. These equations (Information Bulletin 221, Cornell Cooperative Extension, by David Blanpied & Ken Silsby, http://ecommons.library.cornell.edu/handle/ 1813/3299) are based on the temperatures in the 30 days following full bloom. Despite swings in dry and wet weather, along with temperatures, the season is shaping up to be near the "new" average. While the model shows it to be about 3 days earlier than the 25-yr average, it is 2 days later than the 5-yr average.

Viewing Table 1, the predicted CA closing dates for Mac CA storage are about 15 days later than last year, which was of course the earliest one since 1945. The average McIntosh cutoff centering date for 16 weather station sites this year was September 20, with a range from September 18 on the earliest sites in the LOF territory to September 23 for weather stations closet to the lake.

It should be cautioned that this is only a model, a prediction to the overall maturity timing so far. As most of you are aware, strong, dominant weather patterns could significantly alter fruit maturity in either direction. The proper way of interpreting these dates is to use them to decide the time frame to start bringing in harvest labor if McIntosh is your first high acreage variety. The LOFP harvest maturity program will again start sometime in August and continue until the end of the harvest season. The report will include current apple maturity indices, anticipated harvest windows for principle varieties, and weekly internal ethylene analysis for determining preharvest drop.

### Save the Dates

July 16 – 17 - IFTA Summer Study Tour, Gettysburg, PA. Registration, itinerary, other info at <u>https://ifruittree.site-ym.com/default.asp?page=2013StudyTour</u>

**August 1 – Summer Fruit Tour,** NYSAES, Geneva- see the last issue (issue 14) for detailed info. Preregistration is required for the \$30 rate, register on-line at: <u>http://is.gd/ffd2013</u> For sponsorship and exhibitor information, contact Debbie Breth at 585-798-4265 or <u>dib1@cornell.edu</u>.

August 6 – Cornell University Storage Workshop, Ithaca, NY – Full Program and registration in this issue!

### STORAGE WORKSHOP - 2013 August 6<sup>th</sup> Ithaca, NY

#### PROGRAM

- 8.00-8.30: Registration
- 8.30-9.15: Honeycrisp-update on air & CA Storage (Watkins, Mattheis, DeEll)
- 9:15-9.35: DPA contamination in storages (Zanella)
- 9.35-9.55: Prediction of storage disorders wit new technologies (Mattheis)
- 9.55-10.15: Updates from DECCO (Holowid)
- 10.15-10.40: Refreshment break
- 10.40-11.10: Gala and Empire browning (Mattheis, Watkins)
- 11.10 -11.30: Carbon dioxide injury with & without DPA (Watkins)
- 11.30-12.00: Decay control in the absence of postharvest drenches (Rosenberger)

- 12.00-12.20: Updates from PACE (Felicetti)
- 12.20-1.20: Lunch
- 1.20-2.10: Dynamic CA and other new storage technologies (Zanella)
- 2.10-2.30: Minimizing energy and maximizing quality (Schaefer)
- 2.30-3.00: Impacts of glyphosate on internal browning: conclusions from four years of research (Rosenberger)
- 3.00-3.15: Afternoon break
- 3.15-3.30: NY1 and NY2 (Watkins)
- 3.30-4.15: Recommendations for 2013, and ask the 'experts' (Watkins, Rosenberger, DeEll, Mattheis, Zanella)

Pesticide credits are being applied for.

### We thank AgroFresh, Decco, Pace and Storage Control Systems for their sponsorship.

**REGISTRATION:** Cost of the workshop is \$70/person if paid by July 30<sup>th</sup> . \$80 after July 30<sup>th</sup> and at the door. *Only payments BEFORE July 30<sup>th</sup> will include lunch.* 

### NOTE – NEW LOCATION: 146 Morrison Hall, Tower Rd. Cornell University.

**GETTING TO Morrison Hall:** Please check out the following web site: http://www.cornell.edu/maps/ Morrison Hall is on the Corner of Judd Falls Rd and Tower Rd. Parking is available on the diagonal corner.

**BBQ:** You are invited to attend a free BBQ on August 5<sup>th</sup> from 6 – 9PM at the Cornell Orchards. (\$15/registrant's guest or without registration before July 30.)

### Lake Ontario Fruit Program Cornell Cooperative Extension 12690 NYS Rt. 31 Albion, NY 14411

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- Storage Workshop 2013
- Storage Workshop Registration Form

**LODGING:** A block of rooms is being held

at a conference rate at the Best Western. Rooms are \$109 plus tax (free breakfast and free shuttle to CU) and must be booked by July 9<sup>th</sup> to guarantee that rate. Phone 607/272-6100. Please state that you are attending the Storage Workshop.

### FURTHER INFORMATION:

Inquiries should be addressed to Max Welcome, Department of Horticulture, 134 Plant Science Building, Cornell University, Ithaca, NY 14853, phone 607/255-5439, email <u>mw45@cornell.edu</u>

Registration Form			
Storage Workshop - August 6th Fee: \$70 if postmarked by July 30 <sup>th</sup>			
\$80 after July 30 <sup>th</sup>			
Name:	Please make check payable to:		
Address:	Please send form and check to:		
City: State: Zip code:	Maxine Welcome/Storage Workshop		
Telephone:	Department of Horticulture		
e-mail:	Cornell University, Ithaca, NY		
Affiliation:	14855		
BBQ: yes no			