Cornell University Cooperative Extension

Eastern NY Commercial Horticulture Program

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Tree Fruit News

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Regional Updates*:

North Country—Clinton, Essex, northern Warren and Washington counties

Tree phenology: Apple = Full bloom on McIntosh north (Clinton County), approaching petal fall to the south (Granville, Washington County).

Current growing degree days 1/1/13 to 5/13/13	Base 43°F*	Base 50°F*
Chazy	430.7	231.5
Peru	407.5	229.9
South Hero, VT	423.6	231.8
Shoreham, VT	440.2	242.6

Pest focus—Apple: scab, rust, fire blight, mildew, mites and scale.

Capital District—Albany, Fulton, Montgomery, Rensselaer, Saratoga, Schenectady, Schoharie, southern Warren and Washington counties

Tree phenology: Apple=At and/or past petal fall on McIntosh depending on location, approaching petal fall on later varieties; pear=petal fall, peach=late bloom to early petal fall

Current growing degree days 1/1/13 to 5/13/13	Base 43°F*	Base 50°F*
Granville	406.9	216.4
North Easton	462.8	244.1
Clifton Park	412.0	215.9
Guilderland	405.5	206.0

Pest focus—Apples: scab, rust, mildew, mites, plum curculio, tarnished plant bug. Pears: Fabraea leaf spot, mites, plum curculio, and pear psylla

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Mid-Hudson Valley—Columbia, Dutchess, Greene, Orange, Sullivan and Ulster counties

Tree phenology: Apple=full bloom to petal fall; pear=petal fall to fruit set; peach, plum, cherry, apricot=late bloom to shuck split.

Current growing degree days 1/1/13 to 5/13/13	Base 43°F*	Base 50°F*
Hudson	333.4	168.3
Highland	510.6	262.6
Marlboro	462.6	228.9
Montgomery	470.1	239.2

Pest focus—Apples: scab, rust, mildew, mites, plum curculio, European apple sawfly, obliquebanded leafroller. Stone fruit: brown rot, plum curculio, oriental fruit moth and tarnished plant bug. Pears: Fabraea leaf spot, mites, plum curculio and pear psylla.

Coming Events

Coming Events: Range (normal ± std deviation)	Base 43°F*	Base 50°F*
McIntosh petal fall	446-524	230-280
American plum borer 1st catch	394-496	195-267
Codling moth first catch	401-575	202-312
Oriental fruit moth first flight peak	347-547	175-291
Spotted tentiform leafminer sapfeeders present	343-601	165-317

**All degree day data presented are BE (Baskerviile-Emin) calculations. Previous 2013 newsletter editions reported standard degree day data and not BE.*

Serving the educational and research needs of the commercial small fruit, vegetable and tree fruit industries in Albany, Clinton, Columbia, Dutchess, Essex, Fulton, Greene, Montgomery, Orange, Rensselaer, Saratoga, Schoharie, Schenectady, Sullivan, Ulster, Warren and Washington Counties

The Concept of Precision Chemical Thinning

By Terence Robinson, Cornell Dept. Horticulture.
Adapted by M. Fargione, ENYCH.

Chemical thinning is a critical aspect of producing consistent annual apple crops. Despite its importance and years of research efforts, chemical thinning remains highly unpredictable. Major sources of variability include spray chemical uptake rates, and environmental effects on tree physiology. Tree response to thinners seems to be related to carbohydrate balance and competition for carbohydrates between fruit, shoots, roots and wood.

Two new tools have recently been developed to help growers be more precise in their thinning efforts. The first is the **carbohydrate balance model,** developed by Dr. Alan Lakso of Cornell, which estimates the production and need for carbohydrate within the tree. This model enables growers to predict the results of future thinning applications based on weather forecasts. Growers using the model can adjust spray rates to try and optimize thinning effects. However, the carbohydrate balance model predictions are only as accurate as the weather forecasts it uses.

A second new technique, named the **apple fruit growth rate model**, allows growers to estimate the success of a thinning treatment soon after it is applied based on fruit growth rates. Fruitlets with slower growth rates tend to drop off. The model, developed by Dr. Duane Green and others, requires the measurement of fruitlet diameter at 3 and again at 7 days after the thinner is applied. This technique estimates how many fruitlets will survive the previous chemical thinning and allows growers to decide, in a timely fashion, if an additional chemical thinning treatment is needed.

Precision chemical thinning involves first assessing the current crop potential based on the number of flower clusters on representative trees, and then calculating a target for the desired number of fruit per tree at harvest. The desired yield will vary based on variety, tree age and marketing considerations. Successive thinning sprays are applied with rates based on the carbohydrate model predictions, each followed by a rapid assessment of the thinning results using the apple fruit growth rate model, until the final target fruit number is nearly achieved. A typical precision thinning strategy might go as follows:

1. Calculate the desired fruit number per tree at harvest. At pink (or up to petal fall), calculate the current crop potential by counting the initial number of flower clusters on 5 representative trees. The potential crop is estimated to be 5 times the number of clusters found (because there are generally 5 fruit per cluster). The difference between the current crop potential and the desired number at harvest is the amount that must be removed by chemical and mechanical thinning.
2. Apply a chemical thinner spray at 60-80% full bloom and again at 2-3 days after petal fall. Adjust the rate of thinner used based on thinning needs and the carbohydrate model prediction of tree sensitivity.
3. Assess the effect of the thinner toward reaching the target fruit number using the fruit growth rate model. This requires measurements *of the same fruit* on 15 clusters from each of 5 trees at 3 days and again at 7 days after thinner was applied.
4. Re-apply another thinning spray at 10-12 mm fruit size if the remaining crop load is well above the desired target fruit number.
5. Re-assess the effect of this thinner application by measuring the remaining marked fruit and entering their diameter into the fruit growth rate model.
6. A final chemical thinner application can be applied at 16-20 mm fruit size if needed.

Terence Robinson Describing Precision Thinning to Apple Growers at Peru Meeting, May 9, 2013. *Photo: K. Iungerman*

In 2013, the carbohydrate balance model was installed on the Northeast Environmental and Weather Application (NEWA) website. Growers can easily access and use this model (http://newa.cornell.edu/index.php?page=apple-thin) to predict how to adjust thinner rates based on Table 1 on the next page.

The fruit growth model requires considerable effort to count fruit clusters, and to mark and measure 75 fruitlets per block for the repeated fruit measurements. Dr. Robinson has suggested growers may want to make measurements on 2 varieties (a hard-to-thin variety like

(Continued on page 3)

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Gala and an easy-to-thin cultivar like McIntosh) that could then guide decisions for other varieties. The time requirement necessary to adopt the fruit growth model technique may discourage some growers from using this tool. However, the economic impact of optimal crop load adjustment has been estimated to be worth $5,000 to 8,000 per acre in some circumstances.

Source: Robinson, et al., "Precision Chemical Thinning", 2013 Eastern Apple Precision Orchard Management Summit Proceedings, Pp. 25-31, Cornell Univ. Geneva, NY

Table 1. Decision rules for using the output of the carbohydrate balance model to adjust chemical thinning rates. Growers can run the model using local weather station data by visiting: http://newa.cornell.edu/index.php?page=apple-thin.

4-Day Average Carbohydrate Balance	Thinning Recommendations
+ 20 g/day to 0 g/day	Increase chemical thinning rate by 30%
0 g/day to -20 g/day	Apply standard chemical thinning rate
-20 g/day to -40 g/day	Decrease chemical thinning rate by 10%
-40 g/day to -60 g/day	Decrease chemical thinning rate by 20%
-60 g/day to -80 g/day	Decrease chemical thinning rate by 30%
< than -80 g/day	Do not thin (many fruits will fall off naturally)

Note: Growers interested in trying the fruit growth rate model can obtain more detailed instructions and a copy of Dr. Robinson's Excel spreadsheet (to help with the calculations) from Kevin Iungerman or Mike Fargione.

Sound and Fury - The 17-Year Cicada Arriving On Schedule

By Peter Jentsch, Cornell Dept. Entomology. Adapted by Kevin Iungerman, ENYCH

Brood II of the 17-year cicada, *Magicicada septendecim,* is slated to arrive in the mid-Atlantic and areas of eastern NY next week. Full emergence of this insect is expected to last for two weeks, as nymphs emerge from the ground in the late hours of the day to climb tree trunks, vines and grasses, telephone poles and lampposts to conduct a final molt into the adult form. The adults will then fly off to complete maturation, feed a bit, and begin daytime (diurnal) "singing" to call to prospective mates.

The cicada can move very rapidly into orchards to begin egg laying in the 1- and 2-year old "productive fruiting wood for 5–6 weeks, which can result in severe economic damage: loss of fruit from limb breakage; severe damage to newly planted trees; loss of the central leaders, scaffolding limbs, and short fruiting "darts"; and cumulatively, an overall loss of early returns on high-density planting systems.

During their prior emergence in 2008, we observed the OPs were not as effective as the pyrethroids in residual repellency, knockdown and direct mortality. We found 5-day intervals of the pyrethroid Asana XL 0.66EC at 14.5 fl oz/A to be an effective management strategy against the insect. Remember that these are very large insects with a hefty body mass and will require the highest labeled rates of a pyrethroid to maintain effective control and repellent residual.

Estimates of the 17-year cicada populations in regional "hotspots" are expected to range from 3,380 to 1,498,000

17 Year Cicada. *Source Scaffolds, Vol. 22, No 8 May 13, 2013.*

per acres. In 1982, Chris Maier from the Department of Entomology, Connecticut Agricultural Experiment Station, studied an emergence of *Magicicada septendecim* in Connecticut. Chris marked 4,800 cicadas to find the emergence occurred between 15 May and 30 June, with 95% of the nymphs emerging between 6:00 and 9:00 p.m.

Birds are not an especially good predator of cicada with regard to orchard benefit. Chris reported that bird numbers remained low while cicada numbers were at their peak, yet when cicada numbers began to decline after egg laying, the birds began to intensively feed. Orchards should be monitored closely for adult activity and applications made in a timely fashion to reduce injury.

Source: Peter Jentsch, "The 17-Year Cicada Arriving On Schedule" Hudson Valley Insect Pest Management Update, Scaffolds, V22, N8, May 13, 2013

Anticipating and Counteracting the Inevitable Cast: The Petal Fall Pest Review

By Art Agnello (also Peter Jentsch), Cornell Dept. Entomology. Adapted by Kevin Iungerman, ENYCH

We enter into the petal fall period with a warming temperature trend, which will enable all the "old faithful" insect pests at this time, and this review serves to prepare our defenses for the inevitable.

Overwintering Plum Curculio adults move into orchards from hedgerows or wood edges when temperatures exceed 60°F. Adult females oviposit (i.e. lay eggs) in fruit both day and night but feed mostly at night. Depending on temperature, these adults remain active for 2–6 weeks after petal fall. Orchards nearest to woodlands, and hedgerows are most susceptible to attack. As these adults are not highly mobile, Fruit damage is usually most common in such edge areas.

Plum Curculio and ovipostion scar.

Initial post-bloom sprays for plum curculio control should begin at petal fall. In cherries and other stone fruits that are already at shuck fall, sprays should start (or should have started, as appropriate) at the first opportunity. Because the PC oviposition cycle varies according to temperatures and weather patterns, growers are often unsure how many additional post-petal fall sprays will be necessary to maintain protective chemical residues to avoid fruit damage. To guide decisions in this regard, an oviposition model was developed to ascertain when control sprays cease to be necessary.

The oviposition model caries the assumption that spray residues need to be maintained on fruit and foliage only until PC adults stop immigrating into orchards, a time that corresponds to 40% of the oviposition cycle being completed and to 308 DD (base 50°F) being accumulated after McIntosh petal fall. To make the most of this information:

1) Treat the entire orchard at petal fall with a broad-spectrum insecticide.

2) Start calculating the accumulation of DD after petal fall of Macs (base 50°F) using the NEWA Apple Insect Models page (http://newa.cornell.edu/index.php?page=apple-insects) and entering the petal fall date for your area.

3) No additional sprays are necessary whenever the date of accumulation of 308 DD falls within 10–14 days after a previous spray.

Despite the impending loss of the organophosphate (OP) azinphos-methyl (Guthion) insecticide, there fortunately exist a good number of alternatives PC management options.

The OP phosmet (Imidan), at its highest labeled rates (5.5 lbs/A), performs similarly to Guthion, with contact and curative properties. The pyrethroids, such as Baythroid, Danitol, and Warrior, as well as pre-mix formulations containing the pyrethroid group, also have good contact efficacy, with additional repellent activity. Pyrethroids tend to be more effective in cooler temperature ranges, lose residual efficacy against PC sooner then do the OPs, and may require the highest labeled rates and closer re-application intervals for optimal effectiveness. Lorsban 75WG can still be used at petal fall in tart cherries (but is no longer labeled for this use in apples); Calypso, Avaunt and Actara are effective for plum curculio in apples and pears; Avaunt is also another PC labeled option in stone fruit. Delegate and Altacor have some PC activity, but they should not be considered as first choice options in high-pressure blocks.

European Apple Sawfly adults emerge about the time apple trees come into bloom, when they lays eggs in apple blossoms. Young larvae begin feeding just below the skin of the fruits, creating the signature spiral-feeding scar so typically seen at harvest around the calyx end. Feeding larva usually tunnel toward the seed cavity, usually causing fruit to abort. The secondary feeding activity of a single sawfly larva can injure all the fruit in a cluster, causing stress on that fruit to abort during the traditional

(Continued on page 5)

(Continued from page 4)

"June drop" period. A conspicuous mass of wet, reddish-brown frass will mark the larval exit hole and may contaminate adjacent fruits and leaves with an unsightly exudate.

Sawfly Feeding Scar on Apple. *Photo by K. Iungerman*

In blocks of trees where petal fall has occurred on one variety but not yet on others, the earlier variety is likely to sustain some curculio or sawfly injury until an insecticide can be applied. Some newer insecticides with activity against both plum curculio and sawfly -- Calypso, Avaunt and Actara -- may have a slight advantage over conventional OPs in this case. Assail represents another control option (it will also do a good job against rosy apple aphid and spotted tentiform leafminer at this timing). To minimize honeybee hazard, apply any pesticides only when no bees are actively foraging on blooming weeds (evening is better than early morning).

Obliquebanded Leafroller larvae overwinter as 1st or 2nd stage caterpillars and most are likely still relatively small. It would be prudent to have a quick look in problem blocks to determine whether a treatment against the overwintered brood should be included in your petal fall plans. Scout the blossom clusters or foliar terminals for larvae feeding within both the flowers and rolled leaves; a 3% infestation rate could justify an application to minimize overwintered fruit damage and help reduce summer populations.

Among the selective insecticides available, Intrepid has been successful at this timing, and the B.t. products, which include Dipel, Deliver, Agree, Biobit and Javelin, can be used while blossoms are still present. Proclaim has recently been shown to be very effective at the petal fall timing and it provides activity against early season mites. Delegate, Altacor, and Belt all offer very good efficacy against OBLR and the internal leps as well. Pyrethroids such as Asana, Baythroid, Danitol, Warrior, Proaxis or Leverage may be effective, depending on past use history, but be aware of their broad-spectrum effects, as they can work both for- and against-you in controlling pests but impairing the conservation of beneficial mites and insects.

Oriental Fruit Moth biofix data is spread out across NY again this year, with May 1 as a proposed date in the earliest WNY sites; others have yet to record any moth captures. Moderate temperatures forecast for this week will likely continue an indistinct pattern of emergence. Use the NEWA Apple Insect Models page to chart current degree day (base 45°F) progress towards the threshold at which to apply a protective spray; in apples a total of 350, and in peaches 170. To maximize the efficacy of 1st brood control, peach growers should use one of the suggested options from the Cornell Guidelines starting at petal fall, backed up 10–14 days later. In apples, in addition to Delegate, Altacor, and Belt, a number of the petal fall selection of insecticides will do an acceptable job of controlling this generation, including the OPs, pyrethroids, Intrepid, Assail, Avaunt, and Calypso.

Source: Art Agnello, "Chillin' Til Petal Fall". Added Plum Curculio content from Peter Jentsch, "Curculio Cometh" Hudson Valley Insect Pest Management Update, both in Scaffolds, V22, N8, May 13, 2013.

Fontelis Fungicide Registered in New York

By Dave Rosenberger, Cornell Dept. Plant Pathology

Fontelis, a new SDHI fungicide from DuPont, has just received a Special Local Need 24(c) label for applications on apples, pears, and stone fruit in New York State (except that it cannot be used on Long Island). On apples and pears, Fontelis is labeled at rates of 16 to 20 fl oz/A to control scab, mildew, rust diseases, and Alternaria leaf spot. On stone fruit, it is labeled at 14 to 20 fl oz/A for control of brown rot (both blossom blight and preharvest), peach scab, and powdery mildew.

On all crops, Fontelis is restricted to no more than two sequential applications before switching to a fungicide with a different mode of action, and the maximum amount

(Continued on page 6)

(Continued from page 5)
that can be applied annually is 61 fl oz/A. Fontelis has a minimum preharvest interval of 28 days on apples and 0 days on stone fruits.

Fontelis provides apple growers in New York with a new fungicide chemistry (new mode of action) that can be used against apple scab and powdery mildew. Including Fontelis in fungicide rotations to replace a DMI or QoI fungicide may help to extend the useful lifetime for these older chemistries. The best timing for Fontelis applications will be during the window between tight cluster and first cover, with earlier timings preferred where rust diseases are a concern or where mildew pressure is very high. Like the DMI and QoI fungicides, Fontelis is absorbed into leaves, has limited systemic activity, and can provide a day or two of post-infection activity. As noted below, however, it should NOT be used in post-infection sprays to cover missed infection periods. Fontelis should not be applied in the rain, as it needs to dry on the leaves to be fully effective.

On apples, Fontelis should always be tank-mixed with a contact fungicide both for scab resistance management and for enhanced efficacy. The enhanced efficacy with contact fungicide tanks mixes presumably derives from better redistribution of the contact fungicides to new leaves than occurs with Fontelis alone. When tank-mixed with either captan or mancozeb, the low label rate of Fontelis (16 fl oz/A) has provided control of apple scab at levels equivalent to what one would expect from combinations of Flint plus a contact fungicide.

At the Hudson Valley Lab, we tested Fontelis in 21 different treatments between 2005 and 2012 using various rates and tank mixes. In those trials we measured its effectiveness against apple scab in a total of 123 different assessments (spur leaves, terminal leaves, fruit scab, etc.). In 29% of those assessments, Fontelis performed better than programs involving captan, mancozeb, or captan-mancozeb combinations used alone. Fontelis was less effective than contact fungicides alone in 3% of the assessments (mostly in trials where Fontelis was used alone), and it provided scab control comparable to the contact fungicide programs in 68% of my trials. A major advantage of using Fontelis in combination with a contact fungicide is that Fontelis will provide mildew control whereas captan and mancozeb do not.

For powdery mildew on apples, Fontelis has performed at about the same level as Flint. It has been better than Inspire Super in some trials, but less effective than Rally, Indar, and other DMI fungicides (except where the powdery mildew is already DMI-resistant). Mildew control with Fontelis can be enhanced by applying it at 20 fl oz/A.

Adding low rates of sulfur with Fontelis in a 3-way mix that also includes captan or mancozeb should enhance activity against mildew and may be useful for resistance management, but combinations with sulfur have not yet been evaluated in university trials. Applying Fontelis with 0.5% or 1% oil enhanced mildew activity in some trials, but mixtures with oil would preclude using it in combination with sulfur or captan and therefore are not considered very useful.

Fontelis provides adequate control of rust diseases (about like Flint), but it is much less effective against rust diseases than the DMI fungicides. Rust control should be petty good if Fontelis is tank-mixed with mancozeb but it may be marginal if Fontelis is mixed with captan. Our observations suggest that, like Flint and mancozeb, Fontelis has only protectant activity against rust diseases. By comparison, the DMI fungicides provide at least 96 hr. of postinfection activity against rust diseases on fruit, and they may provide more than 7 days of postinfection activity against rust on leaves. As a result, DMI fungicides consistently provide better rust control than any other class of fungicide.

Fontelis is rated as being more susceptible to resistance development than the DMI fungicides, so we can be virtually certain that apple scab and mildew will become resistant to Fontelis rather quickly if the product is abused.

Resistance management is part of the rationale for always mixing Fontelis with a contact fungicide when using it in scab control programs and for not using it in reach-back sprays. Even more important, however, is that Fontelis should NEVER be used as a "clean-up" fungicide in blocks where primary scab has already appeared on leaves. Attempting to arrest scab epidemics with Fontelis will almost certainly result in less-than-satisfactory disease control as well as rapid selection for resistance.

High rates of captan or combinations of captan and dodine are far better options for arresting scab epidemics, although post-infection applications of dodine are also less than ideal for resistance management as it relates to dodine. Ultimately, Fontelis should be viewed as another "super protectant" fungicide that, in most situations, will provide activity similar to that of Flint, but with the advantage of doing so via a different mode of action.

Source: Dave Rosenberger, "Fontelis Fungicide Registered in New York", email to K. Iungerman, May 13, 2013, and also in Scaffolds, V22, N8, May 13, 2013

Brown Marmorated Stink Bug Emergence and Vigilance Begins

By Peter Jentsch, Cornell Dept. Entomology. Adapted by Kevin Iungerman, ENYCH

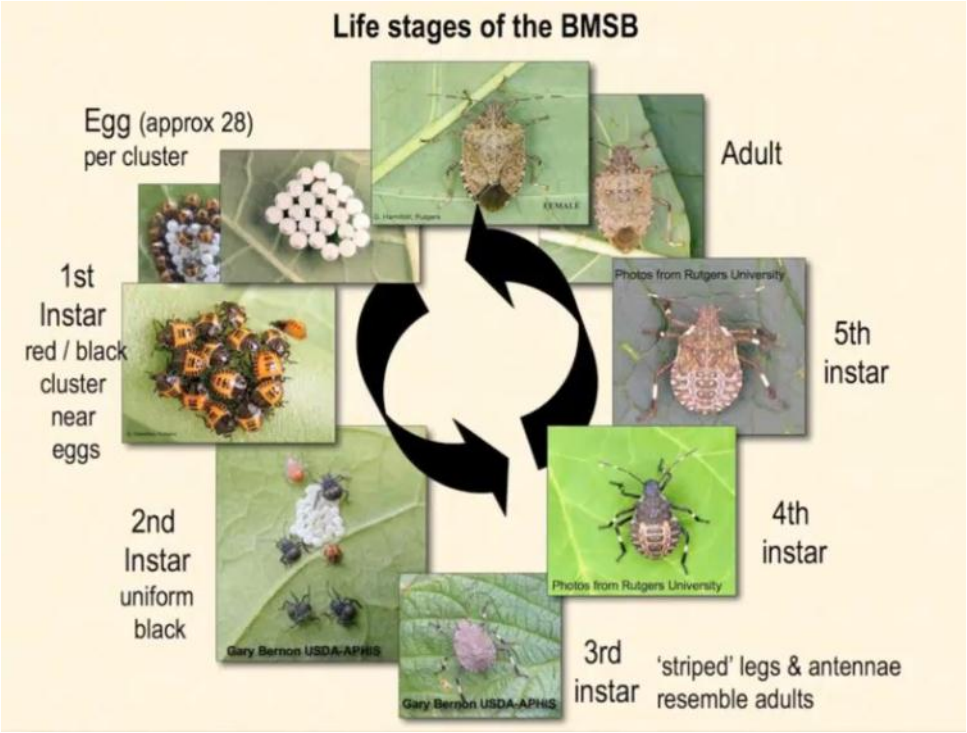
The first adults of the BMSB were captured in specialized traps along agricultural borders in the Hudson Valley at Hopewell Junction (4 adults) and at Highland (26 adults) as they emerged from overwintering sites over the weekend of 5 May. Such results should not be used as a trigger for insecticide applications, since BMSB, an arboreal insect, lives in wooded areas and will be attracted to the monitoring lures and not necessarily to orchards.

BMSB adults have not been found in pome or stone fruit trees this season. (Watch for further information releases when the HVL team sees BMSB moving into tree fruit.) As stone fruit develop ahead of apple, scouting for BMSB along the orchard border of peaches and cherries is recommended this week. As the insect tends to reside in the upper canopy, scouting for BMSB in the tops of the tree is recommended.

As there are no established thresholds for BMSB, and feeding damage takes two to three weeks to fully reveal itself, protectant applications will need to begin prior to fruit injury, observations of 1 adult per 100' of tree fruit row along the wooded edge can be a conservative starting point to begin a management program. Three management strategies should be considered to best manage this pest once it threatens tree fruit. The use of directed orchard perimeter and alternate row middle applications have been successfully employed in the mid-Atlantic tree fruit growing regions to reduce BMSB damage and management costs.

1. **Directed Perimeter Applications:** When BMSB are found along the perimeter of the orchard, a directed application along the perimeter row can be made, blowing material in toward the orchard center using effective insecticides. Spraying the wooded edge is not permitted. The pyrethroid Danitol, pre-mix Endigo ZC, Leverage 360, Lannate 90 SP/ LV or Thionex 3EC are insecticides that have shown excellent efficacy against BMSB in laboratory studies; Thionex has a 2(ee) registration for use in apples in NYS (see Scaffolds No. 4, April 15, 2013, for details). A second directed application along the perimeter row of the orchard would be made 5–7 days later. Follow-up with additional intensive scouting 3–4 days later, as residual efficacy is very limited.
2. **Alternate row middle (ARM) applications:** Aging residues of many of the insecticides become relatively ineffective over 4–5 days. As BMSB are quite mobile, moving from tree to tree to feed and mate, applying ARM applications (applying insecticides to only one side of the tree) provides a practical solution to "refreshing" insecticide residue in orchards with active BMSB. If adults or nymphs continue to be found after perimeter applications are made and/or later in the season as 2nd generation adults emerge, use of alternate row middle applications to blocks where BMSB has been observed should be considered.
3. **Whole Orchard Applications:** Whole orchard applications of effective insecticides should be used later in the season (late July to end of season) when populations begin intense fruit feeding prior to movement to overwintering sites.

Source: Peter Jentsch, "Curculio Cometh" Hudson Valley Insect Pest Management Update, both in Scaffolds, V22, N8, May 13, 2013



Seven lifestages of the Brown Marmorated Stinkbug.

Cornell University Storage Workshop Coming August 6, Ithaca

This year's workshop, slated for August 6 in Ithaca, will feature an international, national and statewide cast. Our guest speakers include Dr. Angelo Zanella, who heads the post-harvest research group at Laimburg Agriculture Research Centre in Italy, and who will be presenting their work on DCA and ILOS, as well as their experiences with DPA. Other presentations will include Honeycrisp, and Empire and Gala browning by Jim Mattheis (USDA, Washington), Jennifer DeEll (Ontario Ministry of Agriculture and Food, Canada), as well as the Cornell team of Chris Watkins and David Rosenberger. Industry presentations include DECCO, PACE and Storage Control Systems. *Registration materials will be available shortly.*

Orchard and Vineyard Sprayers Deposition Efficacy Twilight Field Meetings

Dr. Andrew Landers, Cornell University Department Entomology Barton Lab

Locations	Dates	Times
Hid-in-Pines Vineyard & Winery 456 Soper Street, Morrisonville, Clinton County, NY 12962	**Monday** June 10	**4:00 - 6:00 PM**
Hart Orchards 425 Arthur Road, Peru, Clinton County, NY 12972	**Monday** June 10	**7:30 - 10:30 PM**
Victory View Vineyard 11975 State Route 40, Schatigcoke, Washington County, NY 12154 (Note: Old designation 24 Church Lane, North Easton)	**Tuesday** June 11	**7:30 - 10:30 PM**

Proper utilization of protectant materials depends upon timing and on the optimal placement of the protectants on the plant surfaces. How does your sprayer perform in this regard? Plan on attending one of these workshops to visually evaluate the performance of several kinds of sprayers.

Dr. Andrew Landers will go over the principles of spraying and his work to increase spray efficacy using proper calibration, nozzles, pressures, and tractor speed, and how these factors impacts the efficacy of disease/insect control measures.

At each location, we will review the performance of several sprayers that are typically used for the respective fruit operations (i.e. orchard or vineyard) and provide comment and consultation as to calibration and/or effectiveness overall for the several grape planting systems and/or high and lower density orchard plantings.

At Hart Orchards and Victory View Vineyard, Andrew will lead us in an exercise to evaluate actual spray deposition on representative plant canopy. We will add a tracer dye to a water solution in each sprayer type and have this applied per direction. We will then use UV light to evaluate the extent and pattern of coverage realized. (Thus the reason for the two late evening sessions: the dye is sun-sensitive and we must have dark to see the black light illuminate the deposition patterns.)

All EVENING attendees will receive a take-home kit with which they can assess circumstances on their own plantings. The kit will include two bags of DYE, an inexpensive UV light, MSDS sheets, and instructions relevant to orchard or vineyard operations. Attendees at the Hid-in-Pines meeting are encouraged to stop-in for both the demonstration and kits at the Hart meeting of the same day.

REGISTRATION. There is no cost to these meetings but prior registration is requested if we are to anticipate attendance size, have sufficient kits on hand, and if need be, to be able to contact you should bad weather cause cancellation. (A passing shower should not prevent the programs.)

To register, please contact Ms. Nancy Kiuber at 518-885-8995 or email nak5@cornell.edu. If you need to leave a message, simply say whom you are, that you plan to attend, and provide a cell number.

The Netherland's Thijs Munckhof to Demonstrate 3-Row Sprayer June 2013

You are invited to Vandewalle Fruit Farm, 6003 Shaker Rd, Alton, NY on 3 June 2013. Mr. Thijs Munckhof will be visiting from the Netherlands to demonstrate the MUNCKHOF 3-ROW SPRAYER he has designed. Originally introduced in 2008, there are now over 100 of these machines in use around the world, but this is the first such unit in the United States. MUNCKHOF has been manufacturing Harvesting Machines and Sprayers for over 125 years. For more information about these products go to www.lagasseorchard.com.

Two Sessions have been organized for your convenience: from 4:00-5:00 P.M. and 6:30-7:30 P.M. For more information on this event call 315-946-9202.

Cornell's 2013 Geneva Fruit Field Day to Be Held Thursday, August 1

Cornell University will host the 2013 Fruit Field Day at the New York State Agricultural Experiment Station in Geneva, NY, on Thursday, August 1, from 8:00 a.m. to 5:00 p.m. There will be two tour loops of tree fruit and a single tour loop of grapes and small fruit crops. Fruit growers, consultants, and industry personnel are invited to tour field plots and learn about the latest research and extension efforts being carried out by researchers on the Geneva and Ithaca campuses, and on commercial farms elsewhere in the state.

The focus of the field day will be on all fruit commodities of key importance to New York's $350 million industry: apples, grapes, cherries, raspberries, strawberries, blueberries and other berry crops. During lunch, equipment dealers and representatives from various companies will showcase their latest products and technologies to improve fruit crop production and protection.

Lunch Time Under the Big Top
Geneva Fruit Field Day, 2010.
Photo by Kevin Iungerman CCE ENYCH

The event will be held on the Experiment Station's Fruit and Vegetable Research Farm South, 1097 County Road No. 4, one mile west of Pre-emption Rd. in Geneva, NY. Signs will be posted. Attendees will be brought to the different research plots by bus to hear presentations by researchers on the work being conducted. *Details on registration and program content will be available soon.*

Registration Has Begun for the 2013 IFTA Study Tour to Gettysburg, PA July 16-17, 2013

The 2013 International Tree Fruit Association (IFTA) Study Tour is taking place in Gettysburg Pennsylvania on July 16 and 17. This event offers another great educational opportunity to visit research and commercial orchards and facilities. Come see the latest in equipment design, packing and storage operations. Plans for the Study Tour are in place and registration has opened. If you missed last summer's tour in Quebec due to closed enrollment, don't tarry this time! For more information on the tour, a view of the planned itinerary, and registration information, go to http://www.ifruittree.org/?page=2013StudyTour