

## COMING EVENTS

	43°F	50°F
Current DD accumulations		
(Geneva 1/1-5/13):	375	200
(Geneva 1/1-5/13/2012):	577	309
(Geneva "Normal"):	437	229
(Geneva 1/1-5/20 predicted):	464	253
(Highland 1/1-5/13):	507	262
Upcoming Pest Events – Ranges (Normal +/- Std Dev):		
American plum borer 1st catch ..	394-496	195-267
Codling moth 1st catch .....	401-575	202-312
Comstock mealybug		
crawlers in pear buds .....	215-441	80-254
Green fruitworm flight subsides.	251-451	113-239
Lesser appleworm 1st catch .....	263-561	121-303
Mullein plant bug 1st hatch .....	331-443	163-229
Mullein plant bug 50% hatch .....	429-473	208-262
Oriental fruit moth		
1st flight peak.....	347-547	175-291
Rose leafhopper nymphs		

on multiflora rose.....	239-397	96-198
San Jose scale 1st catch .....	430-614	215-337
Spotted tentiform leafminer		
1st flight peak.....	268-404	124-208
Spotted tentiform leafminer		
sapfeeders present .....	343-601	165-317
McIntosh petal fall .....	446-524	230-280

Phenologies Current / Predicted 5/20

(Geneva):

Apple (McIntosh, Empire): 50% petal fall / petal fall

Apple (Red Delicious): 25% petal fall / petal fall

Pear (Bartlett): petal fall / petal fall-fruit set

Sweet cherry: fruit set, shucks on

Peach: 25% petal fall / petal fall-fruit set

Plum: petal fall / fruit set

(Highland):

Apple (McIntosh, Red Delicious): petal fall

Apple (Ginger Gold, Empire): fruit set

Pear (Bartlett, Bosc): fruit set

Plum (Stanley): fruit set, shucks off

Apricot-early, late (Harcot): fruit set, shucks off

Sweet cherry-early(Danube,Balaton): fruit set,shucks off

Sweet cherry-late (Regina, Sweetheart): 80% petal fall

## TRAP CATCHES (Number/trap/day)

### Geneva

	5/2	5/6	5/9	5/13
Green Fruitworm	0.2	0.0	0.0	0.0
Redbanded Leafroller	17.8	9.6	11.3	5.6
Spotted Tentiform Leafminer	17.3	39.0	22.8	4.6
Oriental Fruit Moth	0.0	5.0*	2.2	0.1
Lesser Appleworm	0.0	0.0	0.0	0.0
San Jose Scale	0.0	0.0	0.0	0.0
Codling Moth	-	-	0.0	0.0

### Highland (Peter Jentsch)

	4/22	4/29	5/6	5/13
Green fruitworm	1.4	0.9	0.0	0.0
Redbanded Leafroller	4.1	29.4	18.6	5.4
Spotted Tentiform Leafminer	0.6	29.6	272	15.1
Oriental Fruit Moth	0.4	6.8	3.4	1.3
Lesser Appleworm	-	0.4*	-	3.1
Obliquebanded Leafroller	-	-	-	0.0

\* = 1st catch

## [Section: INSECTS]

### CHILLIN' TIL PETAL FALL

(Art Agnello, Entomology, Geneva)

## [Box Text: BEFORE THE FALL]

Although our extended stretch of warm spring weather was abruptly interrupted by the cold cell moving through our area this week, the temperatures will rebound in a couple of days, and the "old faithful" insect pests we always look out for at petal fall will continue their progress towards the newly formed fruits, so this overview will help take your mind off the current chill in the air and make preparations for when things heat up again.

## **Plum Curculio**

Adults move into orchards from overwintering sites in hedgerows or the edges of woods and adults are active when temperatures exceed 60°F, something that will recur this week. Adult females oviposit in fruit during both day and night but feed mostly at night. Depending on temperature, overwintering adults remain active for 2–6 weeks after petal fall. Because adults are not highly mobile, orchards near overwintering sites, woodlands, and hedgerows are most susceptible to attack. Fruit damage is usually most common in border rows next to sites where adults overwinter. Although initial post-bloom sprays for plum curculio control should begin at petal fall, growers are often unsure how many additional sprays will be necessary to maintain

protective chemical residues to prevent subsequent damage throughout the PC oviposition cycle, which varies according to temperatures and weather patterns after petal fall.

Following from the fact that PC activity and oviposition are largely determined by temperature, we use an oviposition model to determine when control sprays after petal fall are no longer necessary to protect fruit from PC damage. This model is based on the assumption that residues from sprays applied after petal fall need to be maintained on fruit and foliage only until PC adults stop immigrating into orchards, which corresponds to the time when about 40% of the oviposition cycle is complete. This is predicted by the model to occur at 308 DD (base 50°F) after petal fall of McIntosh. Most probably, this strategy works because, after 40% of PC oviposition is complete, adults usually do not move into the orchard from outside sources, or within orchards from tree to tree. Therefore, by this time, adults residing in treated trees have already been killed by insecticide residues and are unable to complete the remainder of their normal oviposition cycle.

In order to use this strategy: (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); this is easily done from the NEWA Apple Insect Models page (<http://newa.cornell.edu/index.php?page=apple-insects>) by 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. We'll attempt to give local updates for the major fruit areas as the post-PF period progresses. 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. Recall that, in addition to the industry standard broad-spectrum materials, some additional options may be considered: Lorsban 75WG can still be used at petal fall in tart cherries, but obviously is no longer labeled for this use in apples; also, Calypso, Avaunt and Actara are effective for plum curculio in apples and pears, and Avaunt is also labeled in stone fruit as another PC option. Delegate and Altacor both have some activity on this pest, but should not be considered as the first choices in high-pressure blocks.

## **European Apple Sawfly**

This primitive bee and wasp relative shows a preference for early or long-blooming varieties with a heavy set of fruit. This insect is generally a pest mainly in eastern N.Y., although it has been gradually making its presence known in the more western sites, recently progressing as far as Wayne Co. (or beyond). The adult sawfly emerges about the time apple trees come into bloom and lays eggs in the apple blossoms. Young larvae begin feeding just below the skin of the fruits, creating a spiral path usually around the calyx end. This early larval feeding will persist as a scar that is very visible at harvest. Following this feeding, the larva usually begins tunneling toward the seed cavity of the fruit or an adjacent fruit, which usually causes it to abort. As the larva feeds internally, it enlarges its exit hole, which is made highly conspicuous by a mass of wet, reddish-brown frass. The frass may drip onto adjacent fruits and leaves, giving them an unsightly appearance. 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 "June drop" period.

Certain insecticides that control this pest also adversely affect bees, which can pose a problem at petal fall because certain apple varieties lose their

petals before others. In blocks of trees where petal fall has occurred on one variety but not the others, the variety that has lost its petals is likely to sustain some curculio or sawfly injury until an insecticide is 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 option for controlling sawfly; it's not very active against plum curculio, but will do a good job against rosy apple aphid and spotted tentiform leafminer, as well as sawfly, at this timing. To minimize the hazard to honey bees, apply any pesticide only when no bees are actively foraging on blooming weeds (evening is better than early morning).

## **Obliquebanded Leafroller**

Larvae overwintering as 1st or 2nd stage caterpillars may have had the ability to grow to a noticeable size, although we haven't actually seen any up to this point, so most are likely still relatively small. While you're assessing bud viability, it would be prudent to have a quick look for later-stage larvae 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 B.t. products, which can be used while blossoms are still present, include Dipel, Deliver, Agree, Biobit and Javelin. More recently, Proclaim has been shown to be very effective at the petal fall timing, and also provides activity against early season mite populations. Delegate, Altacor, and Belt all offer very good efficacy against not only OBLR, but also the internal leps. Pyrethroids such as Asana, Baythroid, Danitol, Warrior, Proaxis or Leverage may also be effective, depending on past use history, but be aware of their broad-spectrum effects, which can work both for and against you, according to your approach to conserving beneficial mites and insects.

## **Oriental Fruit Moth**

Biofix is spread out across NY again this year, with May 1 as a proposed date in the earliest WNY sites, while others are yet to record any moth captures; moderate temperatures forecast for this week will likely continue the indistinct pattern of emergence in

most sites. Use the NEWA Apple Insect Models page to chart current degree day (base 45°F) progress towards the recommended totals of 170 (in peaches) and 350 (in apples) as the timing at which to apply a protective spray. To maximize the efficacy of 1st brood control, peach growers should use one of the suggested options from the Recommends 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.

## **[SECTION: DISEASES]**

Fontelis fungicide registered in New York  
(Dave Rosenberger, Plant Pathology, Highland;  
dar22@cornell.edu)

### **[Box text: AN OUNCE OF PREVENTION]**

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 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 tank 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. Mildew activity in some trials was enhanced by applying Fontelis with 0.5% or 1% oil, 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 pretty 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 post-infection activity against rust diseases on fruit, and they may provide more than 7 days of post-infection 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.

## **[Section: FIELD REPORTS]**

HUDSON VALLEY INSECT PEST MANAGEMENT UPDATE  
(Peter Jentsch, Entomology, Highland;  
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### **[Box text: MIXED BAG]**

#### **Curculio Cometh**

Very few adults of the plum curculio, *Conotrachelus nenuphar* (Herbst) (PC) have been seen in the in mid-Hudson Valley orchards as of this morning. Developing stone fruit are in most years a week earlier than apple or pear, and very attractive to the early migrating beetles, which tend to oviposit into cherry and apricot if conditions are right. Fruit damage from this one insect can approach 100% loss in small orchard blocks

bordering PC overwintering sites of deciduous hedgerows, stone walls and forests, with highest levels of injury occurring along the wooded edge. As full bloom wanes and apples develop, the PC will increase their migration into orchards to mate and lay their eggs beneath the skin of tree fruit.

To use a degree-day forecasting model to help predict when plum curculio migration will end, the NEWA Apple Insect Modeling program found on-line at (<http://newa.cornell.edu/index.php?page=apple-insect>) will calculate degree-day accumulations when the petal fall date of McIntosh is entered for your farm. At the Hudson Valley Lab we are now at 90% PF for McIntosh and will use 13 May as the start date for this model. If long range forecast averages of daily min/max temperatures hold true (5°F/73°F), we would accumulate about 12 degree days (DD) per day, or 26 days ( $308/12=25.7$ ) to reach 308 DD, approximately by 8 June. At this point, no additional insecticide applications would be needed if you were within 10 to 14 days of your previous application. The model should be updated frequently to adjust the date for changes in weather patterns.

We observed the first injury here at the Highland Lab



in sweet cherry on 10 May, but in very low levels of untreated fruit. King fruitlets of Jersey Mac have now sized at 9.5 mm and Ginger Gold kings are above 5 mm. The size is right but the day and night-time temperatures will be cool (31°F/63°F; 35°F/69°F) for the next two days, buying us some precious time before the PC beetle assault. By Thursday, temperatures will reach into the low 50s at night, with mid to upper-70s in the daytime, providing ideal conditions for PC activity to begin in earnest.

As we move into this important period of PC activity, pest management decisions regarding the most effective tools to employ for this insect need to be made. If pink applications of insecticides effective against PC were made within the past 10–14 days, then early migrating curculio residing in the orchard have been reduced. In these blocks, bees can be retained a bit longer where extended bloom requires longer pollination periods. Preserving the king fruitlet from PC injury will optimize fruit size at harvest and provide conditions for thinners to effectively remove smaller lateral cluster fruit.

The impending loss of azinphos-methyl (Guthion), the most effective organophosphate (OP) contact

insecticide used against PC, puts us in a position of selecting insecticides to fill the gap. Fortunately, the alternatives for PC management are many. The OP phosmet (Imidan), used at its highest labeled rates (5.5 lbs/A), performs similarly to Guthion, both of which work as contact and curative insecticides. 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 on PC. Pyrethroids have broader insecticidal efficacy against insects, including European apple sawfly, obliquebanded Leafroller, and the 17-year cicada, which in the Hudson Valley will be emerging within the next two weeks. Pyrethroids, however, tend to be more effective in cooler temperature ranges, lose residual efficacy against PC sooner than do the OPs, and so may require the highest labeled rates and closer re-application intervals to optimize their effectiveness. Insecticides in the neonicotinoid class are excellent options at petal fall. Calypso 4F (4–8 oz/A) and Actara (4.5–5.5 oz/A) are the two neonics having broad-spectrum efficacy against the insect pests at petal fall. One caveat that needs consideration is the use of Actara beyond PF during the 1st through 2nd cover. Its weakness against the internal Lepidoptera such as codling moth would require a specific lep material,

whereas Calypso has excellent efficacy against the internal lep complex. Avaunt 30WDG (5–6 oz/A) is another insecticide available in NY against the PF insect pest complex. The use of carbaryl for thinning (Sevin XLR Plus, 1–3 qt/A) at high rates will bolster PC control.

Work done by John Wise at Michigan State identifies modes of action of the newer classes of insecticides to better understand how they work and subsequently how they might best be employed. The OPs and pyrethroids work primarily as contact insecticides. Avaunt also has topical activity against PC but works primarily by ingestion. Calypso and Actara have excellent contact activity during the early residual period. They then move systemically into plant tissue to further protect fruit from PC injury through anti-feedant activity and oviposition deterrence. Neonicotinoid and organophosphate applications made after damage has occurred will also work as a curative to kill eggs and larvae already in the fruit. Curative activity is effective for up to two weeks after plum curculio infestation to kill emerging larva. To best use the newer insecticides, the results of this work suggest that optimal timing for PC management should begin with a whole orchard applications using a contact

toxicant at PF, transitioning to feeding and ovipositional deterrents as fruit risk increases.

## **Brown Marmorated Stink Bug drawing nigh in agriculture**

The Brown Marmorated Stink Bug, *Halyomorpha halys* (Stål), (BMSB) was first observed in NY in 2007, with first observance in the mid-Hudson Valley in 2008. Since that time we have monitored the presence of the insect throughout the state, predominately in urban settings from "citizen science home submissions", as field monitoring had been relatively unsuccessful without the use of effective attractants.

In 2012, the USDA developed a new pheromone lure that appeared to be very effective at capturing BMSB very early in the season. Using Tedders Traps and the #10 USDA lure along with a synergist lure, we placed our traps out late last week along the wooded edge of a number of orchards in Ulster, Dutchess and Orange Counties. The first adults of the BMSB were captured along agricultural borders in Hopewell Junction (4 adults) and Highland (26 adults) over the weekend of 5 May, as they emerged from overwintering sites.

It's important to note that we have not yet observed the BMSB adult in pome or stone fruit trees this season. These traps are a good indication of BMSB in the environment near orchards. However, they are not a predictable indicator of the insect in tree fruit. Unlike many other traps that we use to detect insect pests, these traps 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 lure, and not necessarily to the orchard. As stone fruit will be developing 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. We will get the word out once we see BMSB move into tree fruit. Applications will need to begin prior to fruit injury, as feeding damage takes two to three weeks to fully reveal itself.

As there are no established thresholds for BMSB, conservative observations of 1 adult per 100' of tree fruit row along the wooded edge can be used 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.

### **The 17-year cicada arriving on schedule**

Brood II of the 17-year cicada, *Magicicada septendecim*, is slated to arrive in the mid-Hudson Valley tree fruit-growing region 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 lamp posts to conduct a final molt into the adult form. The adults will then fly off to complete maturation, feed a bit, and begin day-time (diurnal) "singing" to call to prospective mates. As we observed in 1996, the insect can move very rapidly into orchards to cause dramatic injury to the fruiting portion

of the tree. The egg laying activity of the cicada takes place in the 1- and 2-year old "productive fruiting wood" of the tree. Oviposition will last 5–6 weeks, resulting in economic loss of fruit from limb breakage, severe damage to newly planted trees leading to loss of the central leader, scaffolding limbs and expected early fruit yields.

As many of the newer insecticides have not been studied against this insect, we can only speculate that the neonicotinoids such as Calypso could be *incidentally* effective (as it is not labeled specifically for this use in NYS) as both a contact and antifeedant. However, orchards should be monitored closely for adult activity and applications made in a timely fashion to reduce injury. During their prior emergence, we observed the OPs were not as effective as the pyrethroids in residual repellency, knock-down and direct mortality. During the prior cicada emergence, 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 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. 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. It may be that many calling cicadas were able to keep the birds away until the "singing" period had passed, at which point, dinner was served.

## **References**

Optimizing control of plum curculio. John Wise, Nikki Rothwell, David Epstein, Larry Gut and Mark Whalon, Entomology. Michigan State University Fruit CAT Newsletter. Vol. 25, No. 6, May 18, 2010.

**[Section: GENERAL INFO]**

EVENT ANNOUNCEMENTS

**[Box text: SPRAY 'N' STORE]**

## DEMONSTRATION OF A NEW 3-ROW SPRAYER

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.

Two Sessions for your convenience: from 4:00-5:00 P.M. and 6:30-7:30 P.M.

For more information, call 315-946-9202.

## CORNELL FRUIT FIELD DAY

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.

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.

## CORNELL UNIVERSITY STORAGE WORKSHOP

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.

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