

scaffolds

Update on Pest Management
and Crop Development

F R U I T J O U R N A L

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Geneva, NY

WEAK IN THE THREES?

FILL THE SPACE
AND GET THE
MOST OF NY1
AND NY2
TREES THIS
SEASON

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❖❖ With weak growing cultivars such as NY1 or Honeycrisp or Jonamac, the lack of sufficient leader growth to reach the top of the trellis (10 ft) by the end of the 3rd year is a serious problem that limits yield in future years. NY1 is a weak tree and does not achieve sufficient leader growth when grown on M.9 or B.9 rootstocks. It is very precocious and growth is often weaker than its 'Honeycrisp' parent. NY1's ability to set a heavy crop load in years 2 and 3, coupled with its low vigor, can challenge the best growers to fill the tree spacing in the first 3 years. With more vigorous cultivars such as Gala, Fuji or McIntosh, reaching the top of the trellis by the end of the 3rd or even as early as the end of the 2nd season is usually not a problem. However, with weak growing cultivars, growers need to intensively manage the trees in the first 3 years to achieve the desired growth. There are several important strategies for maximizing tree growth after planting and during years 2 and 3, including a balanced nutritional program, irrigation, excellent weed control and overall good orchard management.



Year of Planting

We recommend that NY1 and NY2 be planted as early as possible in the spring, but not before the soil is dry enough to "flow well". If trees must be stored, keep them at 34°F storage. The storage room should be well aired without any ethylene from stored apples. Keep roots covered and moist; if necessary, water well. Plant them at the first available opportunity when soil conditions warrant.

NY1 trees should be planted at close in-row spacing (3 ft or less) using the more vigorous M.9 clones (Pajam 2, Nic 29), or G.41 (comparable to the large M.9 clones, fire blight-resistant) or G.935 (comparable to M.26). G.41 will be especially useful when orchards are re-

continued...

IN THIS ISSUE...

HORTICULTURE

- ❖ Getting the most out of NY1 and NY2

INSECTS

- ❖ Brown marmorated stinkbug survey

FIELD NOTES

- ❖ Hudson Valley insect management at tight cluster

GENERAL INFO

- ❖ Harvey Reissig Retirement Party

PEST FOCUS

PHENOLOGIES

UPCOMING PEST EVENTS

planted on old orchard sites since it has some tolerance to replant disease. However, even when G.41 is used, few plantings over the last four years have achieved sufficient leader growth. Thus for the future, slightly more vigorous (but precocious) rootstocks like G.935, G.214, G.202 or G.969 should be used. At the moment, G.935 and G.202 are the only ones on the list that are available for establishing high-density plantings for weak growing cultivars like NY1 and Honeycrisp. Another strategy when planting NY1 trees is to plant the graft union closer to the soil line because of the cultivar's low vigor. This deeper planting depth may be a good strategy, but be careful not to go too far this year. We recommend you leave at least 3–4" of rootstock exposed to prevent scion rooting, which gives variable tree vigor later in the orchard's life, since some trees scion root and others do not. Variable vigor complicates management when the orchard is mature. NY2's graft union should be the standard 6" above the ground level once the soil has settled.

After planting, it is critical that you water trees in as soon as possible to ensure good root soil contact. Three gallons of starter solution prepared by using 5 lb/100 gallons of water of a soluble 20-20-20 fertilizer should be applied the day of planting. After the soil has settled, additional nitrogen fertilizer should be applied. We recommend applying frequent small doses of nitrogen (1/4 lb of calcium nitrate per tree) beginning 2 weeks after planting in a doughnut-shaped band around each tree. The nitrogen can be applied by hand 4–5 times during May, June and early July (spaced every 2 weeks) or through the trickle irrigation (fertigation) with a concentration of 200 ppm (= 0.75 g N per gallon of irrigation water). Water should be applied 2–3 times per week (unless trees get more than 1" of rainfall that week), but with relatively small volumes each time (2–3 gallons per tree). The amount of water to be applied each day (or summed over several days) can be easily calculated using the new Cornell apple irrigation calculator on the NEWA website (<http://newa.cornell.edu>). Growers should use the calculator at least once per week to determine how much water to apply to the new or ma-

ture orchard. These applications of water and fertilizer encourage maximum and safe leader growth.

By the end of June, leader growth should be 18–24 inches. Growers should keep the leader growing until the end of July through intensive water and nitrogen management, and achieve 24–30" of shoot growth. To do this, growers should (1) quickly install the new trellis and irrigation lines after planting, (2) select the leader when 2" long and remove buds #2-4 when 1" long, (if this is not done, growers should cut competing shoots back with clippers to 2" long) to prevent competition with the leader, (3) grow the new trees without weed competition, aphids, corn borers, mildew, and fire blight, (4) water trees frequently (but not when soil is too wet) by trickle irrigation with low volumes per tree, calculated using the new apple irrigation calculator on the NEWA website, (5) remove flowers manually or chemically (see Maxcel recommendation for de-fruiting, below) as soon as possible, even at the tight cluster to pink stage. Even waiting until early fruit set will retard tree

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growth. Finally, (6) these plantings need frequent applications and small doses of nitrogen beginning 2 weeks after planting.

Trees planted in 2013 or earlier

Continued intensive water and nitrogen management will be particularly important for NY1 in the second, third and fourth years, especially if 2014 brings dry, stressful growing conditions (severe and prolonged heat, lack of rains, or severe winds). NY1 blocks that have had relatively poor nutritional and pest management could also be more affected under extreme weather events in 2014.

The leader should be attached to the trellis with a rubber band or a wire loop as soon as it reaches each successive wire. With young trees that have a crop, the unsupported terminal portion of the leader above the last wire should be defruited for maximum shoot growth and good lignification during years 2, 3 and 4. Interestingly, the wrapping of the leader around a vertical wire stabilizer works, supports the leader, and encourages new growth above where it is supported by a tie at the trellis wire.

NY1 trees that had moderate or poor growth in the first year or were planted on a weak rootstock should be de-fruited, because fruits will outcompete with overall tree and shoot leader growth for carbohydrates and water. We recommend that you manually remove all blossoms for NY1 in year 2 (and in very few cases in year 3). An alternative to hand blossom removal is a high rate of Maxcel (100 ppm = 64 oz/100 gal) plus 2 pt Sevin/100 gal + 1 pt oil/100 gal when fruitlets are about 5–7 mm. Pick a warm day for this spray.



NEW BMSB SURVEY

❖❖ Got stink bugs? We need your help! We're surveying growers to assess the impact of BMSB on crops and gather information that will help us defeat this pest. Receive a free Guide to Stink Bugs* if you complete the 10-minute BMSB survey (https://cornell.qualtrics.com/SE/?SID=SV_5ssnjXLNhvp6v1H). Your participation will help us to help you Stop BMSB! The survey will be available until June 30th.

—The Outreach Team for "StopBMSB," a project focused on the biology, ecology, and management of the brown marmorated stink bug. For more info: StopBMSB.org

[* see it at <https://pubs.ext.vt.edu/444/444-356/444-356.pdf>]



PEST FOCUS

Geneva: **Redbanded leafroller** 1st catch 4/24.

Highland:
Spotted tentiform leafminer and **Oriental fruit moth** 1st catch today, 4/28.

DOWN IN THE VALLEY

HUDSON VALLEY
INSECT MANAGEMENT
AT TIGHT CLUSTER,
2014

(Peter Jentsch, Entomology,
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❖❖ In terms of our weather, we are at a very similar growth stage in tree phenology to that of 2013, with tight cluster occurring at nearly the same calendar date in Highland (27th of May). Forecasts for the next 3 days (NOAA) show daytime temperatures averaging in the lower 60s (51–70°F) and evening temperatures in the mid-40s (43–47°F). If we follow a predicted extended cooling trend with temperatures in the mid-60s, we will see McIntosh at bloom near the 9th of May with petal fall near 16–20 May, allowing for roughly 8–10 days of bloom (the average for McIntosh is 9.8 days).

As we approach the pink period of tree phenology, the insect pest control options available to us are numerous. With more choices usually follows greater confusion. Although we have lost the use of azinphos-methyl (Guthion) and are noting increasing resistance of some insect pests such as obliquebanded leafroller, we are fortunate to have a number of insecticide options to contend with these issues. The petal fall application is likely to be the single most important application for insect pest management to pome and stone fruit in the Hudson Valley. High-pressure orchards can experience nearly 100% crop loss from a complex of fruit damaging insect pests in a matter of a few days to a week or two. Needless to say, insect pest management is critical at this point in time. However, in orchards experiencing high pressure at PF, a pink application may be a wise choice if historical losses are experienced.

Most orchards have varying degrees of insect presence, and scouting for these insects based on their pest status will allow for great

er economic benefits and productive management. As we have stated in earlier articles, San Jose scale found at harvest should, without question, be managed during this period to keep fruit from becoming infested a second year.

The Lorsban decision

Pre-bloom management will play an important role in petal fall decision-making. A single yearly application of Lorsban (chlorpyrifos) can still be made to tree fruit. If chlorpyrifos (Lorsban or similar generics) is used in a pre-bloom foliar application, then it cannot be used in a post-bloom foliar or trunk application. A pre-bloom chlorpyrifos application made at early pink will have a considerable impact on San Jose scale (SJS), rosy apple aphid (RAA), emerging obliquebanded leafroller larvae (OBLR), mullein and tarnished plant bug (MPB & TPB), European apple sawfly (EAS) and white apple leafhopper (WALH). Most importantly, if bees are brought into a block in a season of cooler temperatures and delayed petal fall of later varieties, a pink application provides increased management of migrating plum curculio, with less pressure to remove bees from a mixed block while active pollinators continue to work the king flowers. It also provides a bit of insurance if beekeepers are delayed in removing hives from mixed variety blocks.

Be aware that the active ingredient in Lorsban and the Lorsban generics is chlorpyrifos, which has a high bee-poisoning hazard. Judicious use of this product near bloom is essential to reduce the risk to active pollinators. Residual insecticide levels of foliar applications of chlorpyrifos during the delayed dormant period (dormant to 1/2" green) will likely have little or no impact on the OBLR established in the orchard. We typically see the insect emerge from its overwintering hibernaculum to actively feed on foliage from late tight cluster through bloom. For this insect pest, bloom applications of Bt (e.g., Dipel, Agree, Javelin) at lower labeled rates using tight intervals and frequent

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applications, and/or a PF application of a specific OBLR insecticide such as Intrepid or Proclaim, will be required for management when OBLR populations are high. Scouting will easily determine the population at bloom to assist in decision making using the OBLR scouting threshold of 3% infested terminals found in the Cornell Guidelines (pg. 71).

Dogwood borer (DWB)

A directed, coarse trunk spray of Lorsban to control the trunk borers should be considered in orchards employing dwarfing rootstocks of apple such as M.9 that produce a high number of burr-knots that are attractive to trunk borers. In recent surveys throughout New York, dogwood borer, especially in Macoun, have been implicated in tree decline, often associated with phytophthora root, crown and collar rots.

Pear psylla management

Continued applications of up to 1% oil to reduce pear psylla egg laying, nymph emergence and rust mite buildup is quite effective. Oil can be used at a 1% concentration at 14-day intervals for psylla nymph management throughout the season. However, higher rates will cause phytotoxicity. Oil for pear psylla control is NEVER CONCENTRATED. Use a 1 nymph per leaf threshold to help determine optimum timing to scout for egg laying that gives rise to each generation of nymphs. It's important to note that if 1% oil is used for psylla management, it will have greater efficacy at application rates above 100 GPA. Larger droplet size and increased "dilute" application rates have been found to impose greater impact on egg hatch and early instar mortality.

The movement of nymphs into the developing flower buds will make applications of contact insecticides (OPs and pyrethroids) less effective for psylla control, even with excellent coverage. Insecticide options for nymph management should consider the inclusion of neonicotinoids, the more effective products being Actara or Assail. Their use in combination with 0.25 to 1% oil will increase

translocation into leaf tissue and insect cuticle to improve efficacy.

Plum curculios (PC) are not as attracted to pear as to apple; however, management should begin at petal fall or with the first oviposition scars. The use of OPs (primarily Imidan), pyrethroids, the neonicotinoids Actara or Calypso will control PC. As temperatures increase, the pyrethroids will become less effective on pear psylla populations. Actara or Calypso will have excellent efficacy against the 1st generation psylla nymphs when used at petal fall. Leverage (imidacloprid, the a.i. in Admire-Pro, + cyfluthrin, the a.i. in Baythroid) will have increased impact on adults and nymphs than either material alone.

then websites documenting the current state of knowledge are never really complete.

Although Dave Rosenberger retired in February, he plans to continue some of his writing and extension activities through the coming season. One of his objectives is to gather on his website a user-friendly compilation of information on tree fruit diseases as well as a compilation of historical information about the Hudson Valley Lab. Much of the tree fruit disease information on the website is and will be from previously published extension articles, but the information is being organized by subject matter to enable easier access via a single site.

The Hudson Valley Lab is currently in the midst of a major transition that involves both staffing transitions and major changes in the way the Hudson Valley Lab will be funded and managed in the future. The current status of these transitions was recently reported in Core Report, the official newspaper of the New York Apple Association. A copy of that article can be accessed under the title "Farmer Contributions Keep Lab Viable" at <http://blogs.cornell.edu/plantpathhvl/historical-documents/>. ❖❖

OUTSTANDING IN HIS FIELD

EVENT ANNOUNCEMENTS

tored and collaborated with a long line of colleagues, students, visiting scientists, fruit industry leaders & insiders and the general public. We cordially invite you to join us in celebrating his retirement, along with that of his wife, Nancy, who has been an Administrative Assistant in the Entomology Dept. for 23 years, by attending a dinner at Geneva Country Club on Saturday, May 17, 2014.

REISSIG RETIREMENT PARTY - MAY 17

❖❖ Harvey Reissig has recently retired after 40 years as a Fruit Entomologist at Cornell's NYS Agricultural Experiment Station in Geneva. Those of us who work with tree fruit insects have come to regard Harvey as one of the gurus of the field, someone who is not only aware of all of the complex interactions taking place in the orchard, but who can keep a handle on the practical aspects of what the insects are doing out there. During his time at Cornell, Harvey men-

The buffet menu includes Pasta with Tomato Sauce, Mixed Vegetable Medley, Eggplant Parmesan, Rice Pilaf, Broiled Haddock with Butter Crumb Topping, and Baked Chicken; Finger Lakes wines will be donated by area wineries; cash bar available. Cost per person: \$30.00 (checks only, payable to "Cornell University"). For registration and payment, please respond to Kate VanHouter (kev35@cornell.edu; tel: 315-787-2331), NYSAES, Dept. of PPPMB, 630 W. North Street, Geneva, NY 14456. Registration & payment deadline: May 2. ❖❖



PHENOLOGIES

Geneva:

Apple (McIntosh, Empire): half-inch green	<u>5/5, predicted</u> tight cluster
Apple (Red Delicious): quarter-inch green	half-inch green
Sweet cherry (early): bud burst	white bud
Sweet cherry (late): swollen bud	
Peach: bud burst	half-inch green
Plum (early): half-inch green	green cluster
Plum (late): bud burst	

Highland:

Apple(McIntosh, Red Delicious, Ginger Gold, Empire): tight cluster
Pear (Bartlett, Bosc): green cluster
Plum (Stanley): green cluster
Apricot (early): bloom
Cherry (early): white bud
Cherry (late): bud burst

UPCOMING PEST EVENTS

	<u>43°F</u>	<u>50°F</u>
Current DD accumulations (Geneva 1/1–4/28/14):	169	83
(Geneva 1/1–4/28/2013):	177	77
(Geneva "Normal"):	252	112
(Geneva 1/1–5/5/14, predicted):	201	97
(Highland 1/1–4/28/14):	261	122

<u>Coming Events:</u>	<u>Ranges (Normal ±StDev):</u>	
Green fruitworm flight peak	97–213	36–100
Spotted tentiform leafminer 1st catch	113–213	41–101
Pear thrips in pear buds	118–214	50–98
Rosy apple aphid nymphs present	134–244	56–116
Obliquebanded leafroller larvae active	158–314	64–160
Oriental fruit moth 1st catch	226–328	98–166
Redbanded leafroller 1st flight peak	228–366	103–187
McIntosh tight cluster	207–259	90–126

NOTE: 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 possible. These recommendations are not a substitute for pesticide labelling. Please read the label before applying any pesticide.

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