Healthy Fruit, Vol. 23, No. 10, June 9, 2015

Jon Clements, Author (unless otherwise noted) and Editor

Contents

Current degree day accumulations

UMass Cold Spring Orchard, Belchertown, MA	8-June
Base 43 (SkyBit)	899
Base 50 (NEWA)	617

Upcoming pest events

Coming events	Degree days (Base 43)
Spotted tentiform leafminer 2nd flight begins	994-1166
Codling moth 1st flight peak	555-983
Pear psylla 1st summer adults	737-885
Pear psylla 2nd brood hatch	967-1185
San Jose scale 1st flight peak	555-739
San Jose scale 1st flight subsides	864-1238
European red mite summer egg hatch	737-923
Cherry fruit fly 1st catch	755-1289
Obliquebanded leafroller 1st flight peak	834-1226
Rose leafhopper adults on multiflora rose	689-893
Rose leafhopper adults on apple	809-1053
Oriental fruit moth 1st flight subsides	893-1115

AgRadar

Key insect life cycle and management dates

Note: for 2015, we have five Massachusetts orchard locations subscribed to AR: Belchertown, Groton, Phillipston, Stow and Sutton. The website for looking at AgRadar for these locations is: http://extension.umaine.edu/ipm/ag-radar-apple-sites/. What follows is for the Belchertown location.

Codling moth (CM) -- 1st generation, first sustained trap catch biofix date: May 16, Saturday. Codling moth development as of June 9: 1st adult emergence at 24% and

1st generation egg hatch at 0%. In most orchards, insecticide targetted against plum curculio and apple maggot prevent codling moth damage. If targetted codling moth control is needed, key management dates are shown here: 1st generation 3% CM egg hatch: June 18, Thurssday = target date for first spray where multiple sprays needed to control 1st generation CM. 1st generation 20% CM egg hatch: June 25, Thursday = target date where one spray needed to control 1st generation CM.

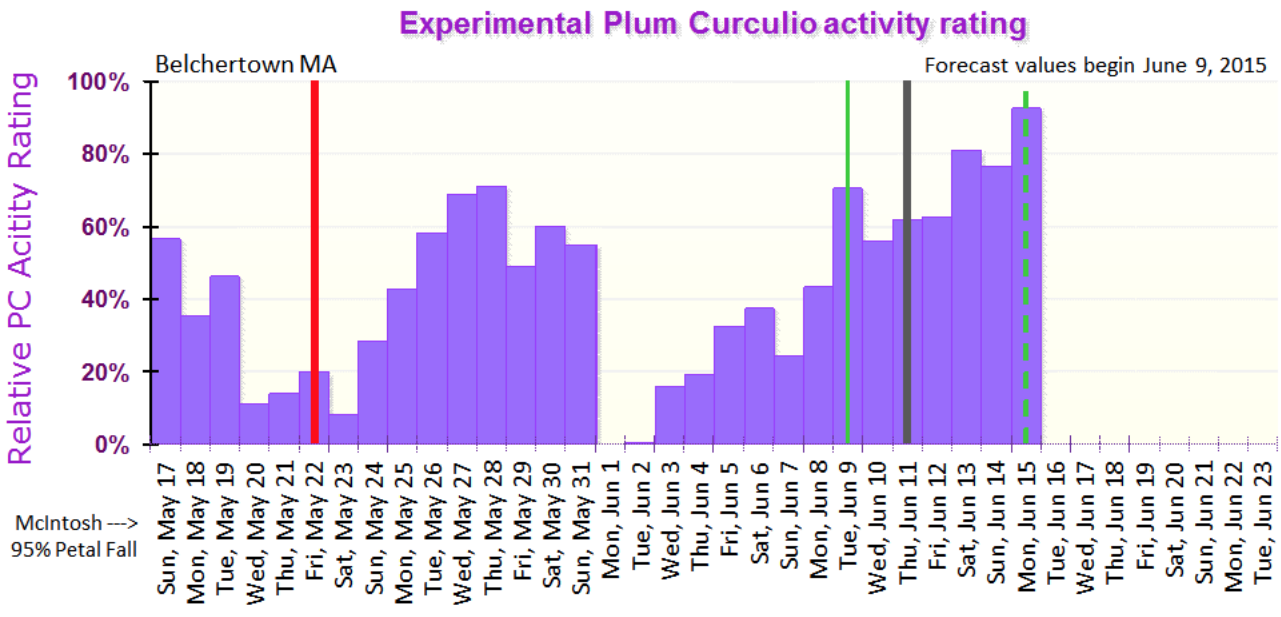
Obliquebanded leafroller (OBLR) -- 1st generation OBLR flight begins around: June 9, Tuesday. Early egg hatch and optimum date for initial application of B.t., Delegate. Proclaim, Intrepid, Rimon, Altacor, Belt, pyrethroid or other insecticde effective against OBLR (with follow-up applications as needed): June 23, Tuesday.

Oriental fruit moth (OFM) -- 1st generation OFM flight starts: May 5, Tuesday; 1st generation 55% egg hatch and first treatment date, if needed: May 26, Tuesday. 2nd generation OFM flight begins around: June 28, Sunday. 2nd generation - first treatment date, if needed: July 6, Monday.

Plum curculio (PC) -- Increase risk of PC damage as McIntosh and similar cultivars increase fruit size: May 22, Friday; Earliest safe date for last PC insecticide spray: June 2, Tuesday.

Redbanded leafroller (RBLR) -- 2nd RBLR flight begins around June 29, Monday. Peak catch and approximate start of egg hatch: July 12.

San Jose scale (SJS) -- First adult SJS caught on trap: May 20, Wednesday; 1st generation SJS crawlers appear: June 17, Wednesday.



Purple columns show Temperature x Air moisture (vapor pressure deficit) as a possible indicator of the relative level of plum curculio (PC) activity on each day compared to other days at the same location.

Vertical green line = today's date. Green dotted line = end of forecast range. Vertical red line = McIntosh fruit set date.

This experimental rating is an attempt to indicate which days have higher risk of PC damage as compared to other days at the same location based on temperature and drying capacity of the air. Ratings are relative and only reflect weather conditions, not local PC population density or the percentage of PC killed by previously by insecticide. Thus, damage risk on later dates is overstated. Despite these limitations, this rating can serve as an indicator of weather conditions likely to promote relativitly high PC activity and thus damage if effective residual protection has not been established or has been depleted. CAUTION: PC damage can occur on a day with a low rating, especially where PC population is high!

http://ag-radar.umext.maine.edu/MAmodel/MA-Belchertown-PCRateChart.htm

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Upcoming meetings

10-June, 2015 (Wednesday) Mass. Fruit Growers' Assoc. in cooperation with Essex County (MA) Fruit Growers, UNH Cooperative Extension,and UMass Extension Fruit Twilight Meeting. Parlee Farms, 95 Farwell Rd, Tyngsboro, MA. 5:30 PM.Pizza for a light supper (and strawberrry shortcake). 1 pesticide re-certification credit. Special guest: Tom Callahan, Adams County Nursery will talk apple and peach varieties, horticulture, rootstocks, etc. Alan Eaton, UNH Cooperative Extension will discuss current pest status.

18-June, 2015 (Thursday) Fruit Twilight Meeting in cooperation with Rhode Island Fruit Growers' Assoc. Rocky Brook Orchard, 997 Wapping Rd, Middletown, RI. 5:30 PM. Bring lawn chair for yourself as there will be an outside picnic light supper. Pesticide re-certification credit(s) will be available. Special guest: George Hamilton, UNH Cooperative Extension will discuss targeted orchard spray application and demonstrate what you can do to improve your airblast spray pattern for improved pest control and pesticide efficiency.

For more information and updates, see Upcoming Events or contact Jon Clements, 413-478-7219.

The way I see it

I'm back. Let's see. Apple fruit is generally thinning down quite nicely, particularly where aggressive chemical thinning was applied. The heavy bloom and then dry

conditions may have put the trees under more stress than usual, so it appears to me a lot of fruit is coming off. But that is OK, hand thinning is costly. Apple scab is showing up in no-fungicide trees, maybe from the infection on May 19, but we may also start seeing it real soon (if not already) from the infection on May 28. According to NEWA at the UMass Orchard, there have been four apple scab infection periods to date, however, the current round of wet weather predicted will make it number 5. That should be the end of primary season. Oh, and virtually no fire blight to date (knock on wood). The first obliquebanded leafroller was caught in a pheromone trap, but we need to catch a few more at once to declare 'bifox.' Acccording to the plum curculio degree-day model on NEWA we are not quite yet at the end of needing insecticide coverage to protect from PC damage, however, adult oviposition is decreasing. Note the Experimental Plum Curculio activity rating above, which calls for an uptick in activity with increased heat and humidity. The peach crop is shaping up, however, trees could use more heat to grow and look better. New plantings should be staked/supported/trellised (whatever you call it) ASAP and watered, and stripping of leaders should be a priority as the flush of new growth pushes out. I hope to see you at one of the fruit twilight meetings this week or next. JC

Insects

I've already said plum curculio are still active and need preventive insecticide. With the heavy downpours we have been having, one wonders about how long an insecticide application will last before the rain washes it off? This has been the topic of internet chat recently too. Many have referred to John Wise's recently updated article "Rainfast characteristics of insecticides on fruit" from Michigan State University. Worth a read and good reference.

Also, because I could not possibly do it better, take a look at Peter Jentsch/Cornell recent blog post where he discusses codling moth, San Jose scale, potato leafhopper, and early obliquebanded leafroller management. JC

Diseases

Dan Cooley, Arthur Tuttle and Liz Garofalo

Apple Scab – We'd like to be able to announce that this unending primary scab season has finally ended. Unfortunately, while it's getting close, we are still seeing a lot of ascospores ready to go, and still catching them in our trap tests. We think this delayed maturity is related to the very dry weather we had for a few weeks. During the dry spell, scab development, which had not progressed very far, shut down completely. After two to three weeks, it started up again, but has remained well behind what we would expect to see in a normal year at this stage of apple growth. Hopefully it will end by next week.

We have seen the first scab spots on leaves in check trees at the UMass Orchard. They trace back to infection on May 27 – 28. That was about a week after McIntosh petal fall at the UMass orchard. We have not seen scab develop from any other infection periods yet.

Fire Blight - We have confirmed a couple of cases of fire blight. However so far not much has shown up. In fact, surprisingly little fire blight has appeared given the weather before and during bloom. We'd like to take some credit, and congratulate all the growers who sprayed strep more than they normally might. However, I think the dry weather also deserves credit. All indications were that bacterial populations soared to unprecedented levels this spring, but in many areas we never had the rain necessary to cause flower infections.

Having said that, some areas did get rain during bloom, and we have seen two cases of fire blight so far. And you may remember that last year fire blight appeared late as shoot blight though we had very little blossom blight. According to MaryBlyt, today is the first day we would expect to see shoot blight symptoms at the UMass Cold Spring Orchard. Keep your eye out for shoot blight.

Again, if you suspect you have fire blight, please contact Jon or one of us as we would like to get samples for resistance testing.

Horticulture

The best advice I could give you right now is to make sure you "strip" the leaders of young apple trees to avoid becomong top-heavy and maintain a strong central leader. There is some debate whether it is best to cut them with (sharp) pruners (right at the base of the shoot) or is it OK to just "strip" them out by hand? I do both, depending on my mood and what I have at hand. If stripping by hand, just avoid taking too much of the soft bark off on the leader adjacent to the shoot being stripped. And only do during dry weather to avoid the spread of disease. JC

Guest article

ON A SCALE OF IMPORTANCE: CRAWLERS AFOOT

Peter Jentsch, Entomology, Cornell University/NYSAES

Reprinted from Scaffolds Fruit Journal, Vol. 24, No. 11, June 8, 2015

We should soon be seeing the emergence of crawlers of San Jose scale (SJS), *Quadraspidiotus perniciosus* (Comstock) from under the overwintered adult female scale covers on apple trees. SJS has become a primary fruit pest in many orchards across the region over the past 10 years, as older chemistries such as Penncap-M and Lorsban, which once held this insect in check, have been removed from the pest management toolbox. With little in the way of residual insecticide in the orchard after the threat of plum curculio has passed, there is little to keep this insect from gaining a foothold in tree fruit blocks, which invariably leads to severe economic injury if left unmanaged. Many producers find this insect very difficult to eradicate. Multiple applications targeting all three generations using products with different modes of action appear to work best. The pheromone-based model we now use targets the adult flight as a biofix, predicting SJS crawler emergence at 380-400 DD (base 50°F). This year, the first adults were observed in traps on 11 May, accumulating 365 DD to date. Therefore, we are expected to reach 380 DD or the onset of crawler emergence in the next 1–2 days.

We are quite fortunate to have a group of effective insecticides to assist us in managing this insect during key timing windows of the growing season. However, the window of opportunity for using materials such as Lorsban, Supracide 25WP and Movento for this generation has passed. Our options now include oil, contact insecticides, or insect growth regulators that will target the emerging crawlers.

The use of oil at 1% has been quite effective when used alone against SJS if complete coverage is achieved. However, your fungicide program will dictate the use of oil. The fungicide Captan may cause phytotoxicity to foliage and fruit if penetrants such as oil are used in tank mixes or in close application schedules with oil.

Centaur 0.7WDG, working as an insect growth regulator (IGR; IRAC Class 16), acts to inhibit the synthesis of chitin.

Esteem 35WP, also an IGR (Class 7), functions as a juvenile hormone mimic, inhibiting metamorphosis from one stage to another.

Movento 240SC (lipid biosynthesis inhibitor; IRAC Class 23) is also effective when applied preventively, as its systemic activity requires some time for it to become established in the woody tissues. All these insecticides are most effective when directed against the first appearance of crawlers, yet have no contact toxicity and tend to act very slowly.

Assail and Admire Pro (Class 4) are both broad-spectrum neonicotinoids that can be effective when directed against emerging crawlers.

The efficacy of some of these materials (e.g., Movento, Assail, Centaur) is improved by the addition of an adjuvant with penetrating properties; however, Esteem and Admire Pro can be used effectively without the use of a penetrant. Remember, rotating classes of insecticides for each generation will delay the onset of resistance. Making multiple applications of the same class or same insecticide at a 14-day interval for the same generation is recommended.

Ed. note: Sivanto 200 SL (Bayer CropScience) is a new insecticide that likely has very good efficacy on scale, and may be availalble in New England states (but not NY yet).

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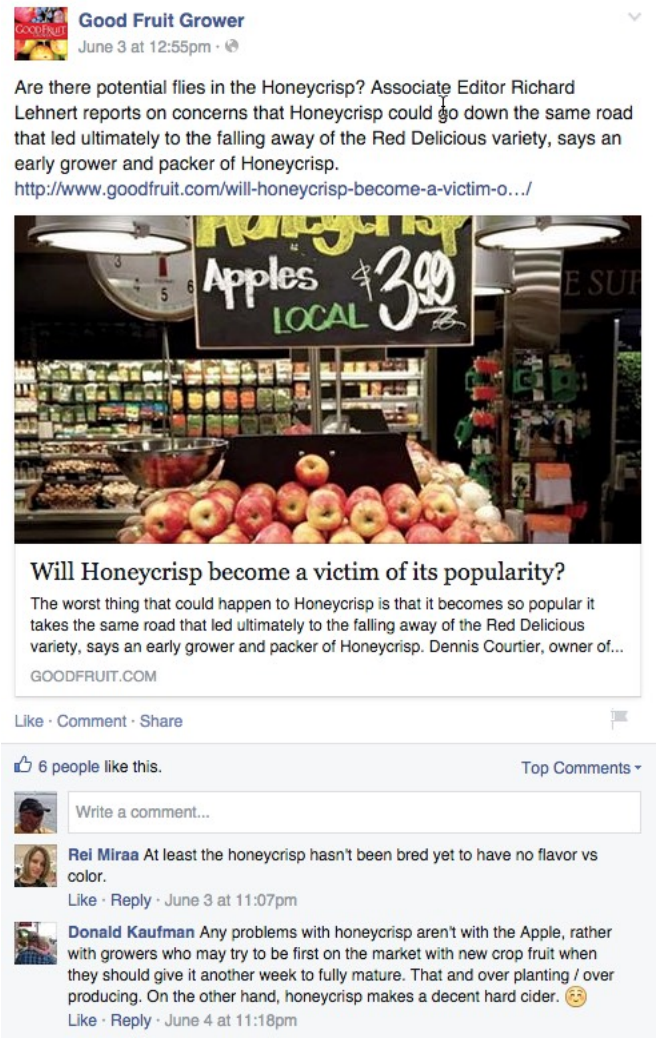

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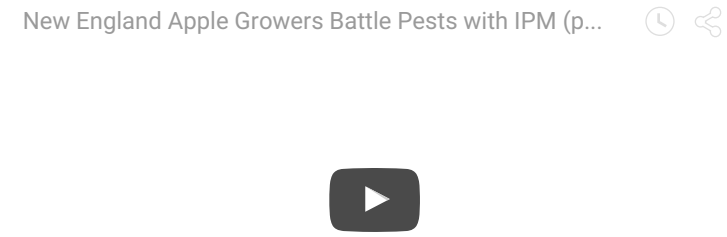

New England Apple Growers Battle Pests with IPM (part 3 of 3)

Useful links

UMass Fruit Advisor: http://umassfruit.com

Scaffolds Fruit Journal: http://www.nysaes.cornell.edu/ent/scafolds/

Network for Environment and Weather Applications (NEWA): http://newa.cornell.edu

New England Apple Decision Support System maps (experimental)

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UMass Vegetable & Fruit IPM Network (on Facebook, http://www.facebook.com/umassipmteam)

The next Healthy Fruit will be published on Tuesday, June 16 or thereabouts, 2015. As always feel free to get in touch with any member of the UMass Fruit Team (http://extension.umass.edu/fruitadvisor/team-members) if you have questions or comments.