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Current degree day accumulations

Location: UMass Cold Spring Orchard, Belchertown, MA

	4-June, 2013
Base 43	804
Base 50	514

Upcoming pest events

Coming events	Degree days (Base 43)
Black cherry fruit fly first catch	702-934

Codling moth 1st flight peak	571-999
European red mite 1st summer eggs	447-555
European red mite summer eggs hatch	737-923
Lesser peachtree borer 1st catch	485-683
Oblique-banded leafroller pupae present	601-821
Redbanded leafroller 1st flight subsides	589-899
Pear psylla 1st summer generation adults present	737-885
Spotted tentiform leafminer 1st flight subsides	674-956

Orchard radar apple insect key dates

Here are insect key insect dates from [Orchard Radar, Belchertown, MA](http://orchardradar.umass.edu/).

Codling moth (CM) 1st generation, first sustained trap catch biofix date: May 16, Thursday. Codling moth development as of June 4: 1st generation adult emergence at 52% and 1st generation egg hatch at 3%. In most orchards, insecticide targetted against plum curculio and apple maggot prevent codling moth damage. If targeted codling moth control is needed, key management dates are: 1st generation 3% CM hatch: June 4, Tuesday = target date for first spray where multiple sprays needed to control 1st generation CM. 1st generation 20% CM egg hatch: June 12, Wednesday = target date for first spray where one spray needed to control 1st generation CM.

Obliquebanded Leafroller (OBLR) 1st generation OBLR flight begins around: June 8, Saturday. Where waiting to sample late instar OBLR larvae is not an option (= where OBLR is known to be a problem, and will be managed with insecticide against young larvae): Early egg hatch and optimum date for initial application of B.t., Delegate, Proclaim, Intrepid, Rimon, Altacor, Belt, pyrethroid or other insecticide effective against OBLR (with follow-up applications as needed): June 25, Tuesday.

Plum curculio (PC) increased risk of PC damage as McIntosh and similar cultivars increase fruit size: May 22, Wednesday. Earliest safe date for last PC insecticide spray: June 7, Friday. If relying on repellance by Surround instead of PC mortality by insecticide, Surround coverage should be maintained until PC egg laying begins to naturally decline around Saturday, June 29.

European Red Mite (ERM) Optimum monitoring period for 2nd generation ERM: Friday, June 7 (nymphs hatched) to Friday, June 14 (egg laying starts for 3rd generation).

Upcoming meetings

<http://extension.umass.edu/fruitadvisor/upcoming-events>

TUESDAY, June 11, 2013: Fruit Twilight Meeting, Tougas Family Farm, 246 Ball St., Northboro, MA. 5:30 PM. \$20/25 meeting fee. 1 pesticide re-certification credit. Refreshments will be served. No pre-registration necessary. Special Guest, Win Cowgill, Rutgers University.

WEDNESDAY, July 10, 2013: Summer Meeting of the Mass. Fruit Growers' Association in cooperation with the University of Massachusetts Fruit Program, Honey Pot Hill Orchards, 138 Sudbury Rd., Stow, MA. 10 AM to 2:30 PM. For meeting flyer and registration info, click here: <http://massfruitgrowers.org/2013/2013SummerMeeting.pdf>

The way I see it

I am hitting it right with this week's HF because the weather is going to make my job easy. During the last week, we just got through one of the more difficult weeks probably in terms of disease and insect control, and fruit thinning. Hopefully everyone did their jobs and applied fungicides (primarily for apple scab, but also for rust, mildew, and fabraeae leaf spot) and insecticides (for plum curculio and codling moth) and fruit thinners (avoiding application during the worse heat) and everything is just settling in now this week. Plum curculio are still a bit of a concern but activity should be slacking off. Start scouting for scab lesions as they are showing up from previous infection periods. Last week I observed potato leafhoppers and associated foliar injury in a young planting in southwest Massachusetts, so keep an eye out for them and treat young plantings with insecticide as soon as any are observed. Finally, if you still need to do some apple fruit thinning -- but watch closely to see what might be coming off after last week's heat -- a good dose of Fruitone with Sevin is going to be necessary to get the job done this week.

Insects

As you can see below, no action currently needed for **Oriental fruit moth (OFM)**.

Oriental Fruit Moth Results for Belchertown

First Trap Catch:

First Trap Catch date above is estimated based on degree day accumulations or user input. Enter the actual date for blocks of interest and the model will calculate the protection period after first trap catch more accurately.

Accumulated degree days (base 45°F) first trap catch through 6/3/2013: 528 (0 days missing)

Pest stage:

The pest stage above is estimated. Select the actual stage and the model will recalculate recommendations.

Pest Status	Pest Management
The first flight of moths is diminishing and the start of the second flight of OFM is expected at 701-1100 degree days.	It is too late to apply control sprays against the first generation of OFM larvae.

As you can see below, the second generation of **Codling Moth (CM)** is making an appearance. Orchards with a history of CM problems (or any worm problems in fruit that you have not verified the identity of) need to take action soon. It may be a little too early to apply insecticides strictly targeting CM as plum curculio sprays still being applied should cover it. Otherwise, it will be a week or two before strict CM control will be necessary for those who need it.

Codling Moth Results for Belchertown

First Trap Catch:

First Trap Catch date above is estimated based on degree day accumulations or user input. Enter the actual date for blocks of interest and the model will calculate the protection period after first trap catch more accurately.

Accumulated degree days (base 50°F) first trap catch through 6/3/2013: 250 (0 days missing)

Pest stage:

The pest stage above is estimated. Select the actual stage and the model will recalculate recommendations.

Pest Status	Pest Management
Eggs usually begin to hatch about 220 DD after the first catch, and catches of adults should be increasing in pheromone traps.	Apply the first spray for control of overwintering CM at 250 DD after first catch. In some seasons, Plum curculio will still be active at this time and a broad spectrum material should be selected to control both of these pests at this time in high risk PC orchards. If <u>internal worm damage</u> has been observed in past years in an orchard, CM populations may be resistant to organophosphate and synthetic pyrethroid insecticides and other classes of materials may be more effective.

Plum curculio (PC) are still an issue as seen below. I would wager that for most orchards insecticide coverage will be necessary through this week and then we should be out of the woods. By next week's HF we should be at 308 DD's.

Plum Curculio Results for Belchertown

At petal fall, fruit become susceptible to feeding and oviposition injury. Control measures are only needed until 308 degree days have accumulated since petal fall.

90% petal fall on McIntosh apple:

Petal Fall date above is estimated based on degree day accumulations or user input. Enter the actual date for blocks of interest and the model will calculate the protection period after petal fall more accurately.

Accumulated degree days (base 50°F) petal fall through 6/3/2013: 250 (0 days missing)

Pest stage:

The pest stage above is estimated. Select the actual stage and the model will recalculate recommendations.

Pest Status	Pest Management
Plum curculio activity is beginning to decline and any curculio remaining in trees will usually not move to other locations.	Plum curculio only need to be controlled until 308 DD have accumulated after petal fall. Make sure that the predicted residual coverage (10-14 days) from the last spray will protect fruit until DD accumulation reaches this value. Pesticide information

We have not registered a trap catch in Belchertown yet of **oblique-banded leafroller (OBLR)**. Once we do, the clock starts ticking towards the control window. No action needed now as seen below. (UPDATE: I just went out and checked the trap, and indeed there were a few OBLR. Biofix established and treatment clock starts ticking.)

Obliquebanded Leafroller Results for Belchertown

First Trap Catch:

Degree day accumulations estimate that First Trap Catch may not have occurred yet. If it has, enter the actual date for blocks of interest above and the model will calculate the protection period more accurately.

Accumulated degree days (base 43°F) 1/1/2013 through 6/3/2013: 854 (0 days missing)

Phenological stage:

The phenological stage above is estimated. Select the actual stage and the model will recalculate recommendations.

Pest stage: First generation moths emerge

Pest Status	Pest Management
<u>Adult</u> flight begins. In western NY first flight usually occurs around the middle of June.	No control measures are recommended for adults. Sprays to control summer generation of larvae are timed to coincide with the first hatch of eggs.

I don't pay a lot of attention to **Spotted tentiform leafminer (STLM)** but if you have a perpetual problem with them, below is the current rough status. You would soon want to start scouting for sap feeding mines I suppose. Orchard Radar suggests 2nd generation adult flight has not started yet and sap feeding mines won't show up until early July though.

Spotted Tentiform Leafminer Results for Belchertown

First Trap Catch:

First Trap Catch date above is estimated based on degree day accumulations or user input. Enter the actual date for blocks of interest and the model will calculate the protection period after first trap catch more accurately.

Accumulated degree days (base 43°F) first trap catch through 6/3/2013: 543 (0 days missing)

Pest stage:

The pest stage above is estimated. Select the actual stage and the model will recalculate recommendations.

Pest Status	Pest Management
The second flight of STLM is beginning	No control sprays are necessary against adults. Monitoring and control sprays should be targeted for the appearance of sap feeding mines from the second generation of larvae on the undersides of terminal leaves.

Diseases

We should be at the end for **apple scab** as long as you have it under control at this point. There were three major infection periods: May 9-12; May 23-30; and just the past few days, June 2-3. Although the NEWA ascospore maturity models suggests that all ascospores were released on May 22, don't count on it, you should have fungicide coverage in most cases through the past few days. It would have taken 4 well-timed fungicide sprays (IMHO) to control scab in Belchertown this year: a good protectant spray prior to the May 9-10; a protectant prior to May 23, and then some kickback by May 31; and a good protectant prior to June 2. That should have done it. How many times did you spray?

Ascospores were essentially all released on May 22. Orchards are still at risk for conidial infections. Continue to monitor scab infection events and maintain spray coverage accordingly for at least two more weeks, or until June 5. Scout orchards for primary scab infections after this time.

The Ascospore Maturity degree day model begins at 50% green tip on McIntosh flower buds. To recalculate ascospore maturity for your orchard, enter your green tip date:

Green Tip Date:

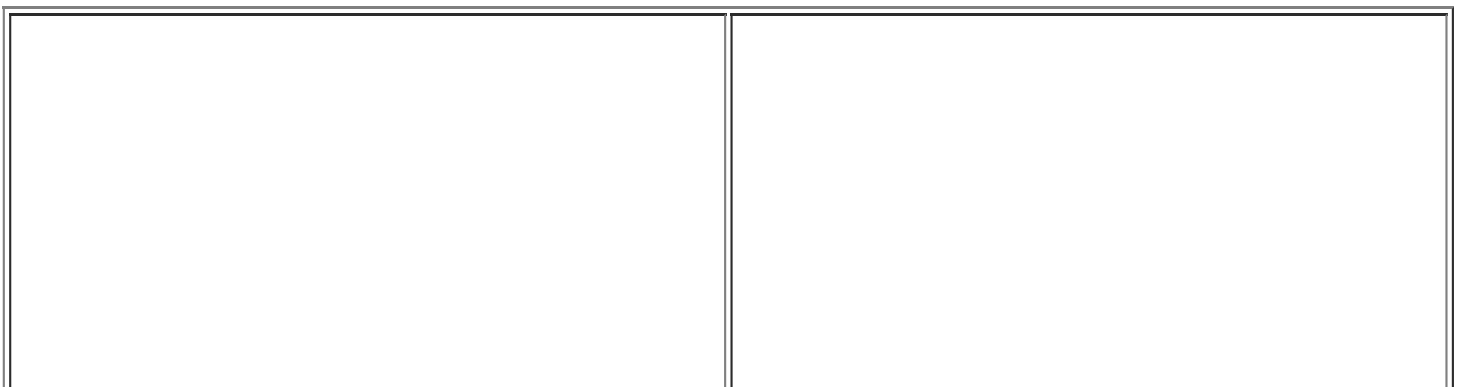
Apple Scab Infection Events (March 1 - June 4)						
Start Date & Time	End Date & Time	Wet Hours	Temp Avg. (F)	Rain (in.)	Days to Symptoms	Combined Event
June 2 4:01 PM	June 3 11:00 AM	19	67	0.96	9-10	
May 29 2:01 AM	May 30 7:00 AM	18	60	1.20	9-10	<u>Yes</u>
May 23 12:01 PM	May 26 6:00 AM	57	52	2.96	15	<u>Yes</u>
May 21 5:01 PM	May 22 8:00 AM	15	55	0.56	14	
May 19 4:01 PM	May 20 9:00 AM	17	55	0.16	14	
May 8 4:01 PM	May 12 8:00 AM	56	58	0.89	12-13	<u>Yes</u>
April 9 4:01 AM	April 13 4:00 AM	31	42	1.03	-	<u>Yes</u>
March 12 7:01 AM	March 12 9:00 PM	14	51	0.68	16	
Dry conditions last 21 hours at download			Download Time: 6/4/2013 8:00			

Fire blight is pretty much a non-issue for most orchards now. Symptoms and strikes should be quite evident in susceptible orchards and cultivars by now if you did not apply streptomycin during bloom.

Horticulture

Regarding apple thinning, if you still need to do some, the carbohydrate models suggests you need to increase thinner rates by 30% this week. At this point, I would use 3-6 ounces of Fruitone-L plus 1-2 pints of Sevin per acre (depending on tree size and amount of thinning desired). It's pretty easy to see which fruit are coming off and which are staying based on growth rate and color of stem (yellow-pink are toast, green are probably staying) now.

Young apple tree leaders should be "stripped" now to maintain dominance of the leader as per below. Use your fingers or sharp hand pruners to pinch out/remove the competing shoots.





BEFORE stripping



AFTER stripping

Useful links

UMass Fruit Advisor: <http://umassfruit.com>

Scaffolds Fruit Journal: <http://www.nysaes.cornell.edu/ent/scaffolds/>

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

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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 11 or thereabouts, 2013. 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.