Healthy Fruit, Vol. 30, No. 13, June 28, 2022

Prepared by the University of Massachusetts Amherst Fruit Team

Jon Clements, Editor

Current degree day (DD) accumulations

UMass Cold Spring Orchard, Belchertown, MA (NEWA, since January 1)	27-June
Base 43 BE	1438
Base 50 BE	876

Upcoming pest events

Pest	**DD's Base 43 F. BE**	**Recommendation**
Apple maggot 1st catch	1222-1762	Early emerging AM females are still sexually immature and have not yet started to lay eggs. It is still too early to apply insecticide sprays against AM even if flies have been captured on traps deployed along the edges of commercial apple orchards*
Codling moth 1st flight subsides	1293-1828	Adult flights are relatively heavy (but declining) during this period and the majority of eggs are likely to hatch, so control is critical at this time. Apply a second spray 10-14 days after the initial spray that was timed at first hatch, to

		provide protection during this critical time period. In high-pressure orchards, it may be particularly important to apply other classes of materials to replace organophosphates or synthetic pyrethroids*
Dogwood borer flight peak	1415-1847	Mating disruption or trunk sprays of Assail recommended where dogwood borer is a problem.
Lesser appleworm 1st flight subsides	1002-1538	
Lesser appleworm 2nd flight starts	1429-2108	
Lesser peachtree borer 1st flight peak	809-1734	Mating disruption should be in place; apply insecticides where a problem
Obliquebanded leafroller summer larvae hatch	1038-1460	Adult catches in pheromone traps are near or past peak numbers. In order to verify model predictions, monitor growing terminals at 600-700 DD base 43F after biofix to check for the detection of the first summer generation larvae. It is too early now to monitor populations of summer larvae at this time to determine if control sprays are necessary because most eggs will hatch later during the summer. However, applying protective sprays with the first spray timed to coincide with the first hatch of larvae at approximately 350 DD base 43F after biofix followed by a second spray 10-14 days later are recommended in orchards that have had a past history of severe OBLR fruit damage or if populations of overwintering larvae were high*
Oriental fruit moth 2nd flight starts	1228-1489	The second flight of OFM usually starts in late June to early July. It

		is too soon to apply a control spray against the second generation of OFM. The initial spray should be applied when eggs begin to hatch*
Peachtree borer flight peak	1085-2014	Mating disruption should be in place; apply trunk directed insecticides where a problem
Redbanded leafroller 2nd flight starts	1196-1547	
Spotted tentiform leafminer 2nd flight peak	1367-1774	Eggs from second generation of STLM will begin to hatch when 690 to 840 degree days have accumulated since the second generation flight start. No control measures are recommended at this time and it is too early to sample for second generation larvae*

* Straight from NEWA Belchertown

Upcoming meetings

2022 Virtual Orchard Meetup Series - Orchard Efficiency: Labor & Technology. June 30 and July 14. For more information: https://rvpadmin.cce.cornell.edu/pdf/event_new/pdf96.pdf

Thursday, July 14, 2022 – Annual Summer Meeting of the Massachusetts Fruit Growers' Association, UMass Orchard, Belchertown, MA. For more information and to register: Annual Summer Meeting of the Massachusetts Fruit Growers' Association

The way I see it

Jon Clements

Things are relatively quiet so I am left once again to highlight some of the talking points during today's lunch bunch Zoom. Good attendance and discussion, but I am sticking with ending this as of this week. I need a break…but thanks to all who have come and I hope it has been useful. I will start doing live apple maturity reports via Zoom in late August. Until then…

Not mentioned during today's noon Zoom, but you can now register for the **Massachusetts Fruit Growers' Association Annual Summer Meeting** at the UMass Orchard on July 14. More information and to register here…

Not everyone got sufficient **rain** yesterday (June 27) to alleviate dry conditions where they exist. The Pioneer Valley is still dry, portions of easter MA got more rain.

Potato leafhopper showed up at the UMass Orchard over the weekend, only a real concern in young trees, Jaime has provided chemical control options below, don't let them stunt your young tree growth, it happens fast!

Picture below is some kind of nasty **'canker'** be it fire blight (probably not) or nectria (more likely?). This was a winter stub-cut Ambrosia tree, with lots of blind wood. Wondering if the blind wood is the issue that let the canker in?

Speaking of **fire blight**, a neighbor to the north explained his rather holistic fire blight management strategy that has brought him mostly out of a deep fire blight hole apparently, which is good news. Strategy has included streptomycin, Actigard/Apogee/Kudos, maybe some Oxidate. You know, once you have fire blight, you will always have fire blight, effort is required to keep it at bay. I still think streptomycin applied strictly when the models show an infection risk at bloom is first and foremost, however, all of the above can help THAT spray work even better. The big question that remains is how much cutting out strikes helps, if they are minimal in number, yes, if many many in larger trees, might be best to just let them recover and grow out of it (which they will). Many moving parts to fire blight management, see these for more: An Annual Fire Blight Management Program for Apples; HRT-2022-Suggestions for the use of prohexadione-calcium on apples.

I personally had a bad experience with Chateau **herbicide** on newly planted apple trees, not following the label recommendation closely enough and having a little drift and perhaps systemic root uptake. Trees are growing out of it, slowly, but still showing signs of herbicide injury/phytotoxicity (pictured below). I say this to caution you, when using an herbicide, read and follow the label to a 'T,' particularly watch herbicide application on young trees, realize some drift of fine particles will always happen. Be careful out there.

Finally, I challenged Duane Greene to explain all those little apple fruits on the ground I'd like to put back on the trees. I told him we might have **over-thinned** which elicited a somewhat defenseful response based on his current thinning trials where non-chemical thinned trees – the untreated controls we call them – also had light 'set.' OK, I will buy that. His thinking is flower buds were not very robust after last summer, and we did have a heavy crop last here at the UMass Orchard. Bloom I noted was not particularly 'robust,' nor did I see a lot of bee activity. It's interesting, and needs more deconstructing – some orchards have a very good crop, some varieties are much heavier set than others, it's really a mixed bag but disappointing (with a few exceptions) here at the UMass Orchard. I guess our trees just needed a rest, maybe yours were more 'rested up?' I hope so.

Healthy Fruit is going on a two week schedule starting now, so no Healthy Fruit next week, have a Happy and safe Fourth of July!

	
Fire blight? Just because it looks like fire blight does not mean it is fire blight. Instead, most likely nectria canker on Ambrosia stub cut.	Lingering herbicide injury resulting from Chateau application to young apple trees and not following ALL the label directions!

Entomology

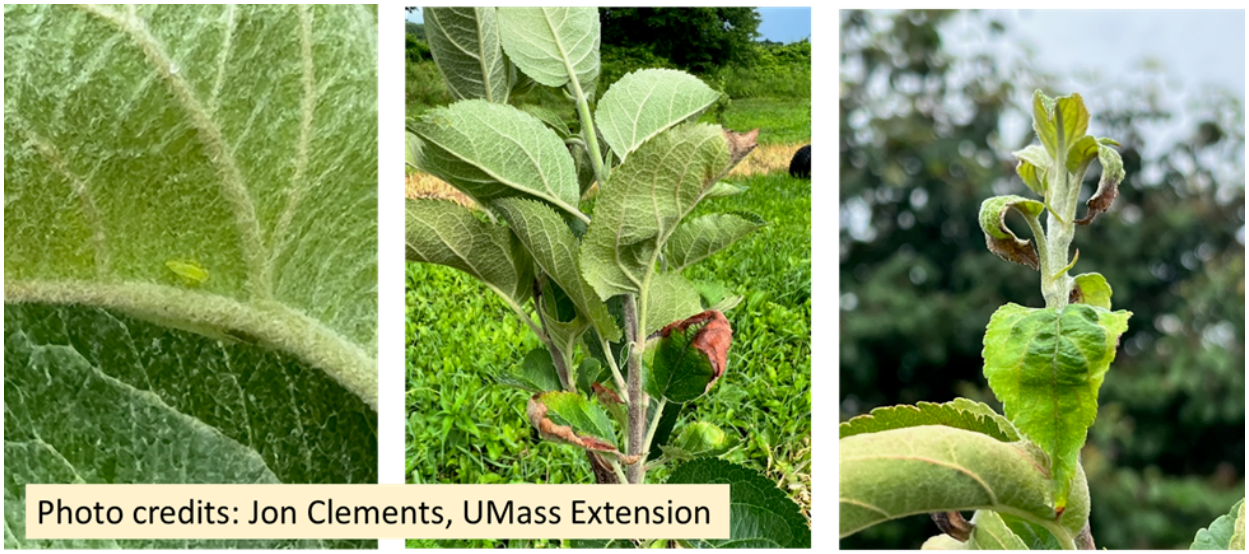
Jaime Pinero

Potato Leafhopper (PLH). Jon Clements reported the presence of PLH in Belchertown. Note that PLH is often confused with:

- White apple leaf hopper nymphs- White apple leafhopper nymphs can be differentiated from potato leafhopper nymphs by the way they walk when disturbed – white apple leafhoppers walk forward and backward, while potato leafhoppers walk sideways in a crab-like fashion. Potato leafhoppers are also more lime green in colour, while white apple leafhoppers are more yellowish white.
- White apple leafhopper adults- White apple leafhopper adults hold their wings over their back when resting while potato leafhoppers fold their wings across their back.

- Rosy apple aphid damage- Leaf curling damage can be confused with the rosy apple aphid, however rosy apple aphid is usually more focused on fruit spurs, while leafhopper damage is more prevalent on terminals.

From Peter Jentsch: Excellent control of the PLH, using reduced rates of the neonicotinoid product imidacloprid at 7d intervals, can reduce PLH populations and maintain continued predation by coccinellid beetle adults and larvae.

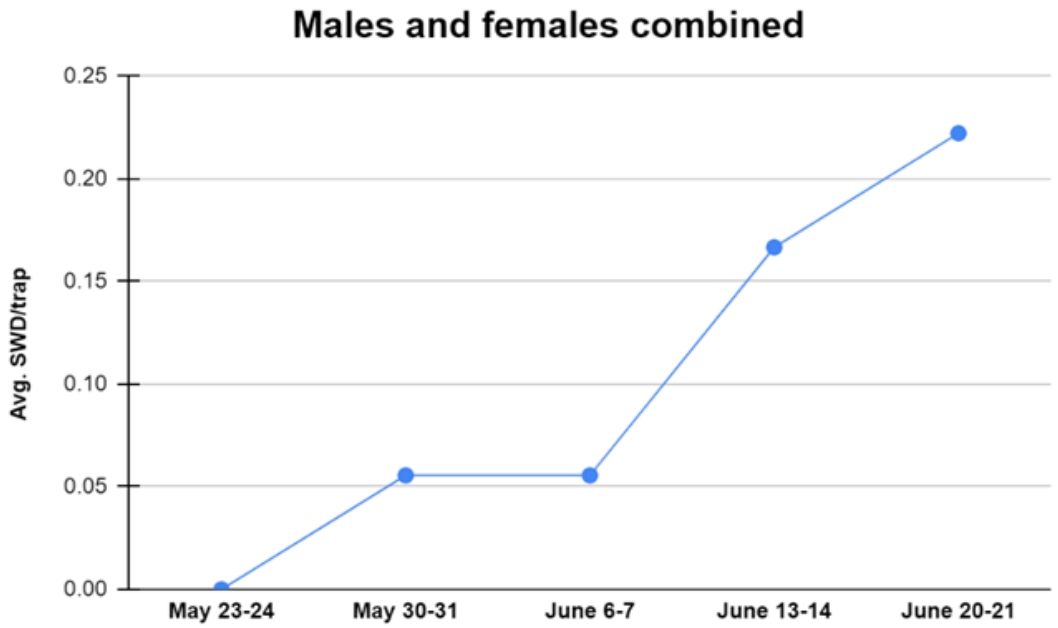


Apple maggot fly (AMF). AMF is active, and seems to be in high numbers! Last week we deployed 139 unbaited red sticky spheres in 10 commercial orchards in MA. This week, 37 AMF were captured by one unbaited red sticky sphere at the UMass Cold Spring Orchard.

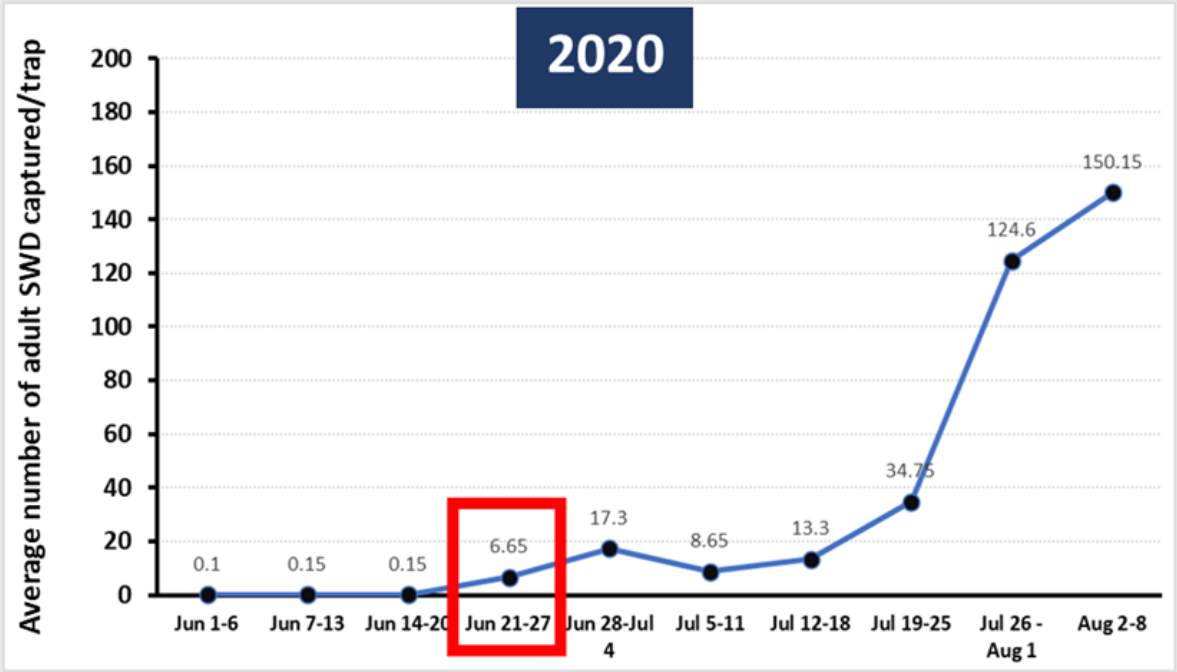
If you have not deployed monitoring traps, you are encouraged to do so.

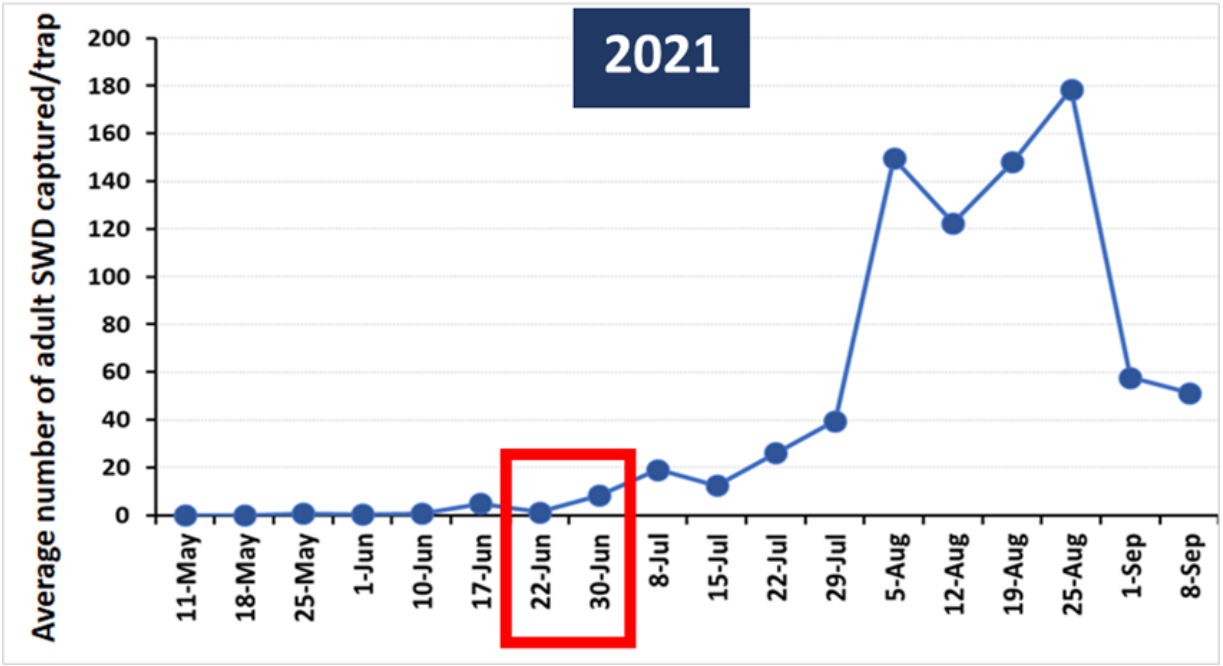
Photo credit: Heriberto Godoy-Hernandez, UMass Stockbridge School of Agriculture

Spotted-wing drosophila (SWD). Only 9 SWD captured in baited traps since May 30th across 6 MA locations. All traps were placed on cherry trees. Three traps were just deployed today in one strawberry field. Trap-capture data will be shared as they become available



Overall, SWD numbers seem to be very low for this time of the year, when compared to 2020 and 2021 (see charts below – the red squares show SWD captures at this time of the year).



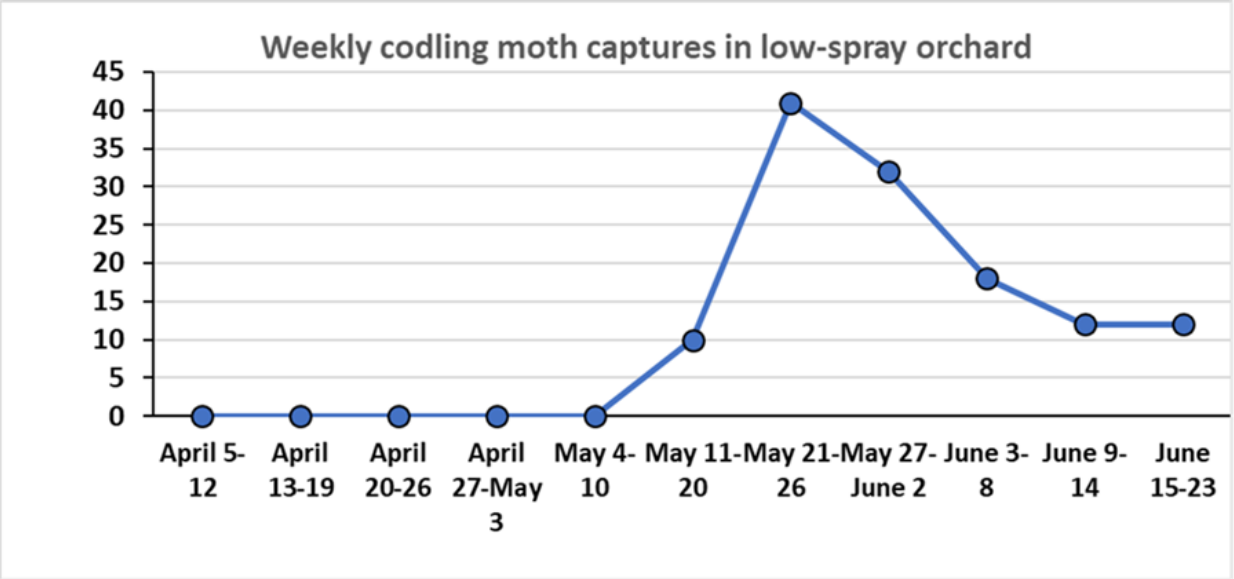


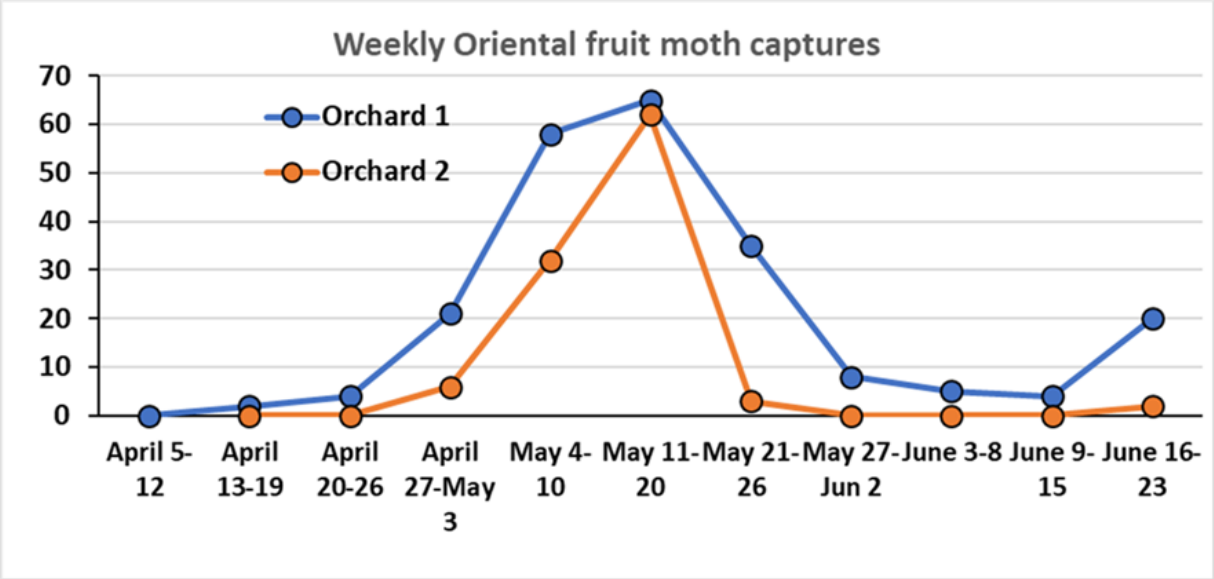
Brown Marmorated Stink Bug (BMSB). The first adult BMSB of the season was captured in Amherst area by pheromone-baited clear sticky panel. Research has shown than during June, the BMSB response to pheromone traps is weaker than later in the season. We will keep you informed about BMSB population size in MA.

First BMSB of the 2022 growing season. Location: Amherst, MA (Plum Brooke farm)

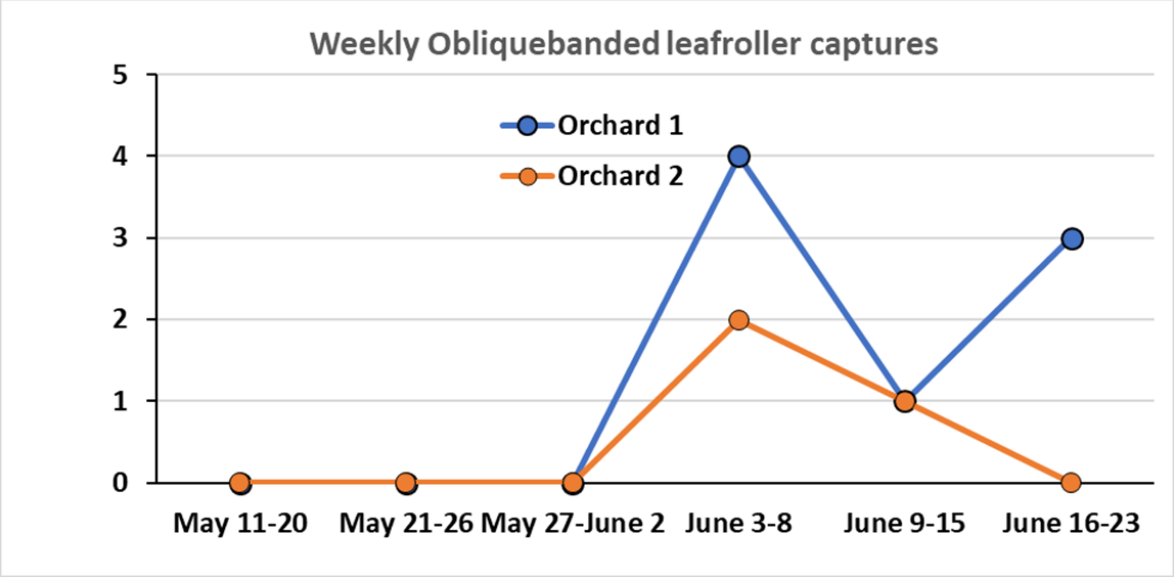
Codling moth (CM), Oriental fruit moth (OFM), obliquebanded leafroller (PBLR). CM captures have not decreased in one of the monitored orchards.

In one orchard OFM captures have increased, reflecting adult moth 2nd flight activity. In that location, captures are above threshold which is >10 OFM per trap per week for the 2nd to 4th flights.





In terms of OBLR, the chart below shows captures in two orchards. Apply insecticide starting at 350 DD (base 43F) after BIOFIX (first day of sustained captures). May need 2-3 sprays 10-14 days apart



Summer insecticide spray table. Source: New England Tree Fruit Management Guide. *This list is not exhaustive for every active ingredient or labeled product. No endorsement of products mentioned is intended, nor is criticism implied of products not mentioned.*

SPRAY TABLE FOR APPLE INSECT PESTS (SUMMER). Source: New England Tree Fruit Management Guide **HIGH** - **MODERATE** EFFECTIVENESS

	Active ingredient	IRAC	Apple maggot	Stink bugs	Codling moth	Oriental fruit moth	Obliquebanded leafroller	San Jose scale	Wooly apple aphid	Potato leafhopper
Intrepid 2F *(IGR)*	Methoxyfenozide	18			M	M	H			
Dipel DF **(OMRI)**	B.t.	11A			M	M	H			
Assail 30SG	Acetamiprid	4A	H	M	H	H		M	M	H
Delegate 25WG	Spinetoram	7			H	H	H			
ALTACOR 35WDG	Chlorantraniliprole	28			H	H	H			
Avaunt 30WDG	Indoxacarb	22	M		M	M				H
Exirel	Cyantraniprole	28	M		H	H	H			H
Imidan 70W	Phosmet	1B	H		H	H		M		
Movento 240SC	Spirotetramat	23						H	H	
Voliam Flexi WDG	Thiamethoxam + chlorantraniliprole	28 + 4A		H	H	H	H			H
Belt 4SC	Flubendiamide	28			H	H	H			
Danitol 2.4 EC	Fenpropathrin	3		M	H					
Actara 25WDG	Thiamethoxam	4A		M						H
Entrust SC **(OMRI)**	Spinosad	5			M	M				
Admire PRO 4.6SC	Imidacloprid	4A					H	M	M	H
Verdepryn 100SL	Cyclaniliprole	28								
Spear-Lep	GS-OMEGA/ KAPPA-HXTX-HV1A (peptide)	32			?	?	?			

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Pathology

Dan Cooley

Ed. note: No pathology update. Yea, turn on the water, but worry less about diseases…

Horticulture

Jon Clements

If I could think of something new and useful to put here, I would, but I am at a loss of words and beyond ‘deadline’ so I will leave it at that. But I do know I have been pinching and pruning back shoots on young trees to protect the leader growth, watering young trees, scouting for potato leafhopper, putting down a final fertilizer application on young trees, spraying calcium, and trying to find some time to do some hand thinning here and there to get clusters down to no more than two apples on lightly cropped trees. Three apples in a cluster are a no-no IMHO.

Guest article

Useful links

UMass Fruit Advisor: http://umassfruit.com
Network for Environment and Weather Applications (NEWA): http://newa.cornell.edu
Follow me on Twitter (http://twitter.com/jmcextman) and Facebook (http://www.facebook.com/jmcextman)
The Jentsch Lab (Peter Jentsch, Poma Tech)
Acimovic Lab (Srdjan Acimovic at Virginia Tech)
Tree Fruit Horticulture Updates (Sherif Sherif at Virginia Tech)
App store: Malusim (iOS and Google Play); Fruit Growth Model (iOS); Orchard Tools (iOS); MyIPM (iOS and Google Play); Eco Fruit/Apple App (iOS and Google Play) Note: for iOS apps search the App Store on your iOS device.

The next Healthy Fruit will be published on or about July 12, 2022. In the meantime, feel free to contact any of the UMass Fruit Team if you have any fruit-related production questions.

Thank you sponsors…

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