

STICKING POINTS

EYE ON THE FLY

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flies see the yellow panel as a "super leaf", they are naturally attracted to it during this early adult stage. A few of these panels hung in such an orchard can serve as an early warning device for growers if there is a likely AM emergence site nearby.

❖❖ This is the time of year to expect the first appearance of apple maggot (AM) flies in wild apple trees and abandoned orchards, which begins first in eastern NY; western NY could be about a week later, depending on what kind of temperatures and rainfall we get over the next week or two. Crop scouts and consultants have used traps to monitor AM populations for many years, but this approach, useful as it is, may not necessarily be recommended in all cases. Some orchards have such high or such low AM populations that monitoring for them is not always time-efficient. That is, in some blocks, sprays are necessary every season, often on a calendar basis; however, in some blocks the populations are so low that they are rarely needed at all. However, most commercial NY orchards have moderate or variable pressure from this pest, and in these cases monitoring to determine when potentially damaging numbers of them are present allows growers to apply only the number of sprays necessary to protect the fruit from infestation.

Sticky yellow panels were some of the first traps for AM, and have been in use for over 60 years; these can be very helpful in determining when AM flies are present. The insects emerge from their hibernation sites in the soil from mid-June to early July in New York, and spend the first 7–10 days of their adult life feeding on substances such as aphid honeydew until they are sexually mature. Because honeydew is most likely to be found on foliage, and because the

Many flies pass this period outside of the orchard, however, and then begin searching for fruit only when they are ready to mate and lay eggs. That means that growers don't always have the advantage of this advance warning, in which case the catch of a single (sexually mature) fly indicates that a spray is necessary immediately to adequately protect the fruit. This can translate into an undesirable risk if the traps are not being checked daily and are used to signal an immediate response, something that's not always possible during a busy summer.

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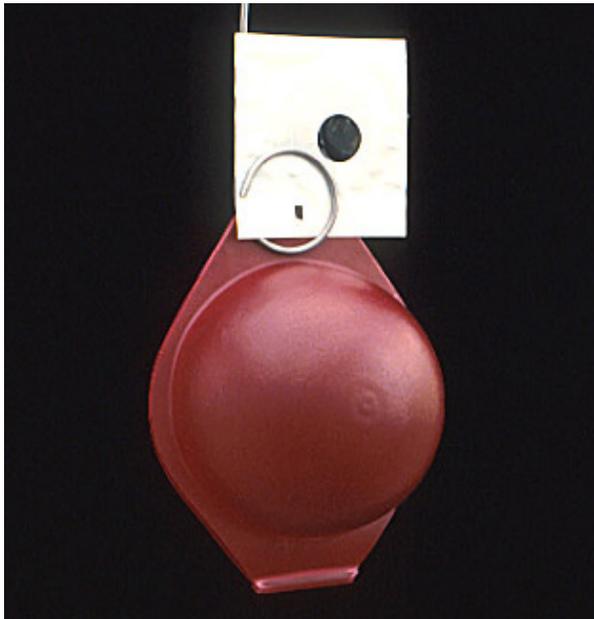
ORCHARD RADAR DIGEST

TRAP CATCHES

PEST FOCUS

UPCOMING PEST EVENTS

To regain this time advantage, more effective traps have been developed, which are in the form of a "super apple" — large, round, deep red, and often accompanied by the scent of a ripe apple — in an attempt to catch that first AM fly in the orchard. Because this kind of trap is so much more efficient at detecting AM flies when they are still at relatively low levels in the orchard, the traps can usually be checked twice a week to allow a 1–2-day response period (before spraying) after a catch is recorded, without incurring any risk to the fruit. Research done in Geneva over a number of years indicates that some of these traps work so well that it is possible to use a higher threshold than the old "1 fly and spray" guidelines recommended for the panel traps. Specifically, it has been found that sphere-type traps baited with a lure that emits apple volatiles attracts AM flies so efficiently that an insecticide cover spray is not required until a threshold of 5 flies per trap is reached.



The recommended practice is to hang three volatile-baited sphere traps in a 10- to 15-acre orchard, on the outside row facing the most probable direction of AM migration (towards woods or abandoned apple trees, or else on the south-facing side). Then, the traps are periodically checked to get a total number of flies caught; dividing this by

3 gives the average catch per trap, and a spray is advised when the result is 5 or more. Be sure you know how to distinguish AM flies from others that will be collected by the inviting-looking sphere. There are good photos for identifying the adults on the Apple Maggot IPM Fact Sheet; check the web version at: <http://hdl.handle.net/1813/43071>.

In home apple plantings, it is theoretically possible to use these traps to "trap out" local populations of AM flies by attracting any adult female in the tree's vicinity to the sticky surface of the red sphere before it can lay eggs in the fruit. Research done in Massachusetts suggests that this strategy can protect the fruit moderately well if one trap is used for every 100–150 apples normally produced by the tree (i.e., a maximum of three to four traps per tree in most cases), a density that makes this strategy fairly impractical on the commercial level.

A variety of traps and lures are currently available from commercial suppliers; among them: permanent sphere traps made of wood or stiff plastic, disposable sphere traps made of flexible plastic, and sphere-plus-panel ("Ladd") traps.

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scaffolds

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The disposable traps are cheaper than the others, of course, but only last one season. Ladd traps are very effective at catching flies, but are harder to keep clean, and have performed no better than any other sphere trap in our field tests. Brush-on stickem is available to facilitate trap setup in the orchard. Apple volatile lures are available for use in combination with any of these traps. These tools are available from a number of orchard pest monitoring suppliers, among them:

- Gempler's Inc., 100 Countryside Dr., PO Box 328, Belleville, WI 53508; 1-800-382-8473, Fax, 1-800-551-1128 <<http://www.gemplers.com/product/R16102/Disposable-Red-Sphere-Traps-Olson-Box-of-100>>
- Great Lakes IPM, 10220 Church Rd. NE, Vestaburg, MI 48891; 800-235-0285, Fax 989-268-5311 <[http://www.greatlakesipm.com/balltraps.html - redball](http://www.greatlakesipm.com/balltraps.html-redball)>
- Ladd Research Industries Inc., 83 Holly Court, Williston, VT 05495; 800-451-3406, Fax 802-660-8859 <<http://www.laddresearch.com/apple-maggot-fly-trap-kit>>

By preparing now for the apple maggot season, you can simplify the decisions required to get your apples through the summer in good shape for harvest. ❖❖

Spotted Wing Drosophila

The earliest emerging SWD adults of the season continue to show up in traps around the state, but captures are so far still low. Keep apprised of what's going on in your region by consulting the SWD blog [<http://blogs.cornell.edu/swd1/>]. According to Julie Carroll, tart cherries are starting to color in our area. Some sites, more inland from Lake Ontario, are further along than others. We are currently at low risk of SWD infestation. However, that risk is going to increase fast as fruit ripens and harvest begins. An SWD spray program should be developed and put in place to protect the ripening crop. Updated SWD Quick Guides providing capsule descriptions of products registered for SWD management can be found on

the Spotted Wing Drosophila Management page: <http://fruit.cornell.edu/spottedwing/management/>.

BMSB MANAGEMENT SURVEY FOR COMMERCIAL PRODUCERS

❖❖ A nation-wide survey is currently under way to gather information from farmers and growers on the economic impact of the brown marmorated stink bug (BMSB) on agriculture. The objective of the survey is to better provide you with the help you need in managing this pest. We'd like to find out when BMSB became a problem for you, where you currently get information on how to control them, how much damage you have suffered, your use of and interest in various management practices, and your feelings about biological control methods and their potential for your operation. The results of the survey will be used by Extension programs across the United States to fine tune management advice for the BMSB and help prioritize research and outreach activities.

If you'd like to participate, the survey should take you about 20-25 minutes to complete. Your individual survey responses will be confidential and the data collected will only be reported in summaries. Your participation is voluntary and you can decide not to answer a given question if you choose.

The link to the on-line survey along with more information about the survey can be found on the StopBMSB.org website (<http://stopbmsb.org/go/BfxA>). If you have any questions about the Brown Marmorated Stink Bug Management Survey for Commercial Producers, please contact Jayson Harper by e-mail at jkh4@psu.edu or call 814-863-8638. ❖❖

MODEL BUILDING

Insect model predictions for Highland[H]/
Geneva[G]

[Source: NEWA Apple Insect Models,
<http://newa.cornell.edu/index.php?page=apple-insects>]

Obliquebanded Leafroller larval emergence
@ 350 DD43 from biofix; 25% egg hatch @
450 DD43; 50% egg hatch @ 630 DD43 (cur-
rently @ 460 [G] / 515 [H] / 285 [Wmson] /

ORCHARD RADAR DIGEST

[H = Highland; G = Geneva]:

Roundheaded Appletree Borer

Peak RAB egg laying period roughly: June 19-
July 1 (H)/June 26-July 8.

Codling Moth

Codling moth development as of June 25:
1st generation adult emergence at 99%
(H)/95% (G) and 1st generation egg hatch at
85% (H)/66% (G).

Lesser Appleworm

2nd LAW flight begins around: July 4 (H)/
July 12 (G).

Obliquebanded Leafroller

Optimum sample date for late instar summer
generation OBLR larvae: June 27 (H)/ July 3
(G).

Oriental Fruit Moth

2nd generation OFM flight begins around:
June 22 (H)/June 30 (G).

2nd generation first treatment date, if needed,
June 30 (H)/

Redbanded Leafroller

2nd RBLR flight begins around: June 30 (G);
peak catch and approximate start of egg hatch:
July 4 (H)/July 7 (G).

Spotted Tentiform Leafminer

Rough guess of when 2nd generation
sap-feeding mines begin showing: June 28
(H)/ July 5 (G).

INSECT TRAP CATCHES (Number/Trap/Day)

Geneva, NY

	<u>6/18</u>	<u>6/22</u>	<u>6/25</u>
Redbanded leafroller	0.5	0.0	1.0
Spotted tentiform leafminer	20.0	19.5	10.0
Oriental fruit moth	1.0	1.0	4.5
Codling moth	37.5	29.0	6.0
Lesser peachtree borer	11.0	-	11.0
Obliquebanded Leafroller	2.0	1.0	1.0
Dogwood Borer	2.0	-	0.5
Peachtree Borer	4.0	-	2.5

Highland, NY

	<u>6/11</u>	<u>6/18</u>	<u>6/25</u>
Redbanded leafroller	0.0	4.0	18.5
Spotted tentiform leafminer	4.0	40.5	56.0
Lesser appleworm	3.0	2.0	0.5
Oriental fruit moth	23.5	0.5	5.0
Codling moth	26.5	40.0	49.0
San Jose scale	0.0	1.0	0.0
Obliquebanded Leafroller	21.5	46.0	53.0
Dogwood Borer	1.5	1.5	0.0
Tufted Apple Bud Moth	-	-	23.0*
Sparganothis Fruitworm	-	-	7.0*

* first catch

PEST FOCUS

Highland: 1st Tufted Apple Bud Moth caught
today, 6/25.
1st Sparganothis Fruitworm caught
today, 6/25.

UPCOMING PEST EVENTS

	43°F	50°F
Current DD* accumulations (Geneva 1/1–6/25):	1242.0	806.2
(Geneva 1/1–6/25/2017):	1274.4	765.1
(Geneva "Normal"):	1291.6	798.8
(Geneva 1/1-7/2, predicted):	1463.5	979.1
(Highland 1/1–7/2):	1310.9	834.2

<u>Coming Events:</u>	<u>Ranges (Normal ±StDev):</u>	
Apple maggot 1st catch	1226-1690	776-1091
American plum borer flight subsides	1200-1488	745-967
Codling moth 1st flight subsides	1276-1834	810-1206
Comstock mealybug 1st adult catch	1308-1554	809-1015
Dogwood borer peak catch	1434-1864	898-1233
Lesser appleworm 1st flight subsides	1002-1538	613-989
Lesser appleworm 2nd flight start	1429-2108	924-1405
Lesser peachtree borer flight peak	853-1767	513-1165
Oriental fruit moth 2nd flight peak	1454-1951	927-1307
Pandemis leafroller flight subsides	1441-1692	901-1103
Peachtree borer flight peak	1028-2004	619-1355
Redbanded leafroller 2nd flight start	1204-1557	739-1012
Spotted tentiform leafminer 2nd flight peak	1388-1783	869-1185

*all DDs Baskerville-Emin, B.E.

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.

The **Cornell Pest Management Guidelines for Commercial Tree Fruit Production** (aka 'The Recommends') is available from the Cornell Store, both in a printed book format as well as online; visit <https://ipmguidelines.org/> for purchasing details.

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