

### APPLE MAGGOT

APPLE  
MAGGOT  
REVIEW  
(Harvey  
Reissig)



mid-July, and before this date fruit remaining on the tree is unfavorable for larval development, so early infestations do not cause sustainable populations in the orchard. In addition, for unknown reasons, fly activity between about August 20 and September 15 does not usually cause serious damage in commercial orchards in New York.

❖❖ Although management efforts directed against apple maggot (AM) should be nearing an end by now, it may be helpful nonetheless to go over what we do and don't know about the biology of this insect.

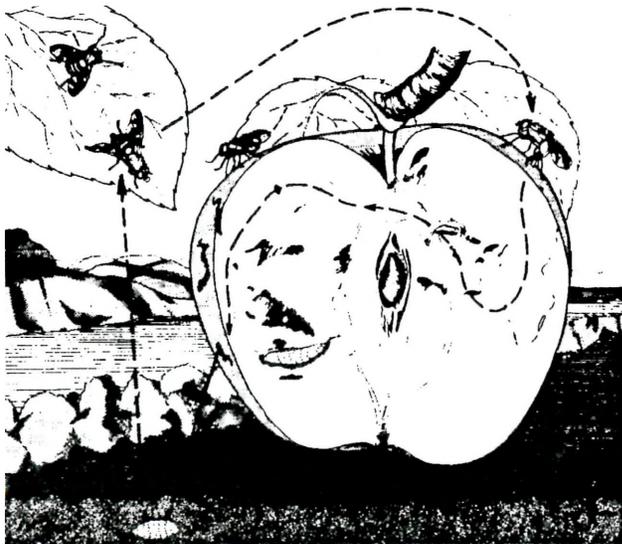
The apple maggot overwinters as a pupa in the soil. Adults from the single generation of flies emerge in late June to early July. Females cannot lay eggs until they become reproductively mature,

Larval tunneling inside fruit causes it to become rotten and unmarketable. Early stings caused by punctures from the female's ovipositor may severely deform the fruit of some varieties, even though no larvae survive.

Monitoring to determine whether control sprays are necessary is recommended only in orchards that are not near large sources of outside infestation, such as abandoned orchards or those with no indigenous infestations of flies. Theoretically, there is absolutely no tolerance for AM damage in fruit. In practice, AM damage is not usually detected in normal fruit inspections unless there is approximately 5 percent fruit damage.

Small wasps parasitize AM larvae in fruit, and predators such as birds and crickets may eat larvae or pupae in or near the soil. In natural, unsprayed apple and hawthorn trees, AM populations are not regulated by natural enemies. Parasites and predators are also ineffective at controlling AM in commercial orchards.

AM flies have a limited migratory capability, so all apple and hawthorn trees within 1/4-1/2 mile of commercial orchards should be removed if possible. Do not allow dropped fruit to remain beneath



7-10 days after emergence. Females lay eggs in fruit and larvae develop there, emerging in the autumn after the fruit has fallen and entering the soil to pupate. Flies are active from July to mid-September, but commercial orchards require protection only from about mid-July to mid-August. Flies do not reach orchards in large numbers until

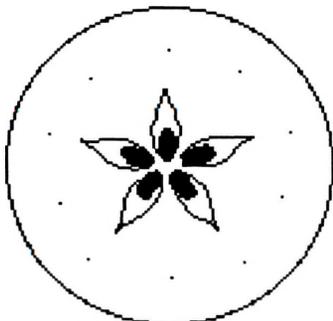
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the tree for more than one to two days. Eliminating fruit drops will break the life cycle of flies in an orchard by preventing larvae from exiting the fruit and entering the soil.

AM flies can be trapped out in small, well-pruned trees that are not near large sources of outside infestations. A relatively high density of sticky red spheres (plain or volatile-baited) is required, approximately 1 trap per 100 apples. Mass trapping is usually less effective than chemical control, and AM may still damage 1–5% of fruit from mass-trapped orchards.

Most commercial orchards have no indigenous populations of flies. Therefore, chemical control sprays are usually directed against flies immigrating into orchards from outside, unsprayed hosts, including both apples and hawthorns. Most insecticides, particularly organophosphates, are remarkably effective in controlling adults. Insecticides must kill females before they oviposit in the fruit. Residual effectiveness of insecticides is particularly important in controlling AM in commercial orchards when flies are continuously immigrating.

Insecticides can be applied according to trap catches as described in the 1993 Pest Management Recommendations for Commercial Tree-Fruit Production (p. 186), or on a standard or modified IPM schedule. The standard schedule requires an initial spray 7–10 days after the first emergence of flies, followed by additional sprays at 10–14-day intervals until August 15–20. The modified IPM schedule requires only three sprays, on approximately July 15, August 1, and August 15. ❖❖



## PEST FOCUS

### Geneva:

**Spotted tentiform leafminer** third flight peaked this week.

**Apple maggot** numbers still exceeding 5 flies/baited trap in unsprayed test block.

### Highland:

**Apple maggot** numbers remain low.

## scaffolds

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### scaffolds FRUIT JOURNAL

Dept. of Entomology  
NYSAES, Barton Laboratory  
Geneva, NY 14456-0462

Phone: 315-787-2341 FAX: 315-787-2326

Email: [art\\_agnello@cornell.edu](mailto:art_agnello@cornell.edu)

Editors: A. Agnello, D. Kain

This newsletter available on CENET, in the Tree Fruit News bulletin board under FRUIT.

**INSECT TRAP CATCHES (Number/Trap/Day)****Geneva NY****HVL, Highland NY**

	<u>8/5</u>	<u>8/9</u>	<u>8/12</u>	<u>8/16</u>		<u>8/2</u>	<u>8/6</u>	<u>8/15</u>
Redbanded Leafroller	0.8	0.5	0.5	0	Redbanded Leafroller	0.1	0	0
Spotted Tentiform Leafminer	499	597	838	472	Spotted Tentiform Leafminer	47	124	20.4
Oriental fruit moth (apple)	2.1	3.0	0	1.1	Sparganothis Fruitworm	0	0.25	0.3
Oriental fruit moth (peach)	0.8	0.1	4	1.4	Oriental fruit moth	0.3	0.75	1.2
Lesser appleworm	1.3	0.4	0.3	0.5	Fruittree leafroller	0	0	0
Codling moth	16.8	15.5	7.2	3.5	Lesser appleworm	0	0	0
Obliquebanded leafroller	0.4	0.1	0.5	0	Codling moth	5.6	5.6	1.3
Lesser peachtree borer (cherry)	1.3	0.9	2.2	2.6	Variigated leafroller	0	0.5	0.05
Lesser peachtree borer (peach)	0.9	0	1.3	0.4	Obliquebanded leafroller	0.7	0.7	0.5
American plum borer (plum)	2.6	0.6	1.8	0.6	Apple maggot	0.05	0.17	0.07
American plum borer (cherry)	1.4	0.9	0.7	0.4				
Peachtree borer	1.0	1.1	0.8	0.3	* 1st catch			
Apple maggot	3.9	1.5	3.4	1.5	(Dick Straub, Peter Jentsch)			
San Jose scale	4.1	1.5	2.2	6.1				

**UPCOMING PEST EVENTS**

	<u>43°F</u>	<u>50°F</u>
Current DD accumulations (Geneva 1/1 - 8/16):	2533	1818
(Highland 1/1 - 8/14):	3045	2160

<b><u>Coming Events:</u></b>	<b><u>Ranges:</u></b>	
Redbanded leafroller 3rd flight peak	2603-3174	1798-2196
Oriental fruit moth 3rd flight starts	2577-2956	1734-2013
Obliquebanded leafroller 2nd flight peak	2634-3267	1789-2228
Codling moth 2nd flight subsiding	2782-3433	1796-2332
Apple maggot peak flight	2168-2688	1495-1762
Comstock mealybug crawlers subsiding	2740-2766	1818-1934
Lesser peachtree borer flight subsiding	2782-3253	1796-2247
Peachtree borer flight subsiding	2230-3255	1497-2309
San Jose scale 2nd flight finished	2494-2576	1662-1678
San Jose scale 2nd generation crawlers emerging	2761-2836	1943-2076

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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**scaffolds**

Dept. of Entomology  
NYS Agricultural Exp. Sta.  
Barton Laboratory  
Geneva, NY 14456-0462

ARTHUR AGNELLO  
ENTOMOLOGY  
BARTON LAB

NYS AES

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