

## KNOWING WHERE TO LOOK

BUGS IN CAMO  
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❖❖ The first generation of Comstock mealybugs likely came and went without much notice this year, since they tend not to cause very noticeable damage at that time of the season (late June), but for management efforts, we normally focus on the summer brood, which occurs sometime during the 3rd week of July in the Hudson Valley, and shortly thereafter in western N.Y. Now would be a good time to note the presence of any potentially problematic populations in your pears, peaches, or even apples, as applicable, in order to be prepared for any needed management decisions. The following information is taken from the Comstock Mealybug IPM Fact Sheet (<http://hdl.handle.net/1813/43087>):

There are two generations of Comstock mealybug in New York, each taking 60 to 90 days to complete, depending on seasonal temperatures. The egg is generally thought to be the primary overwintering stage, but some nymphs and adult females from the second (summer) generation may also overwinter, with eggs being laid in the spring rather than the previous fall. Adult females and males emerge at the same time, from late June to mid-July for the first (overwintering) generation, and late August to mid-September for the second (summer) generation. Adult females are present for a total of 4–6 weeks, and oviposit for about one week after mating. Males survive for only a few days after emerging.

The elongate, orange-yellow eggs are laid in jumbled masses along with waxy filamentous secretions in protected places such as under bark crevices, near pruning cuts, and occasionally in the calyx of fruit. The summer-generation eggs are laid from mid-June through late July, and the overwintering eggs from mid-August into October. The early larval instars of the

CMB (**Fig. 1**) are similar to adult females (wingless and elongate-oval in shape, with a many-segmented body) except that they are smaller, more



**Fig. 1.** Comstock mealybug nymph.

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oval-shaped, lack the long body filaments, and are orange-yellowish because they have less wax covering. Later instars are similar in appearance, but become progressively browner and redder.

The overwintered eggs hatch from mid-April through May and the nymphs (crawlers) migrate from the oviposition sites to their feeding sites on terminal growth and leaf undersides of trees and shrubs. This hatch is completed by the petal fall stage of pears. Nymphs that hatch from these overwintered eggs are active from roughly early May to early July (i.e., as in the above-mentioned reports). As the nymphs approach the adult stage, they tend to congregate on older branches at a pruning scar, a node, or at a branch base, as well as inside the calyx of pears. Second- (summer) generation nymphs are present from about mid-July to mid-September.

The Comstock mealybug poses two major concerns for the pear processing industry of New York: First, the emergence of crawlers and adult females from the calyx of pears (**Fig. 2**) at the packinghouse creates a nuisance to workers. Second, pears to be made into puree typically are not peeled or cored by processors who buy New York fruit, so infestations can potentially result in unacceptable contamination of the product.



**Fig. 2.** Comstock mealybug adults in pear calyx.

Another problem, of concern to apple growers in the 1930s and 1940s, and again in the Hudson and Champlain Valleys in the early 1980s, is that the honeydew secreted by the crawlers is a substrate for sooty molds growing on the fruit surface. This problem also occurs on peaches in Ontario, Canada. These molds result in a downgrading of the fruit, and are therefore an additional cause of economic loss.

To date, the Comstock mealybug has been a problem to growers of processing pears because of the contamination and aesthetic reasons noted. An infestation generally requires one or more insecticide sprays during the growing season, directed against the migrating crawlers. Examine the terminal growth for crawler activity periodically throughout the summer. Crawler and adult female activity can be monitored best by wrapping white, double-sided carpet tape around low scaffold branches and inspecting for crawlers that have been caught on the tape. They can be recognized with a hand lens or, with some experience, by the unaided eye.

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## scaffolds

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<http://www.scaffolds.entomology.cornell.edu/index.html>

We expect summer crawlers to appear in problem blocks over the next 1–2 weeks, for which an application of a material such as Actara (pears only), Admire (pears only), Assail (apples & pears only), Centaur, Movento, or Portal would be advised to control this insect. ❖❖

**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** 100% egg hatch @ 950 DD43 (currently @ 1279[H] / 935[G]).

**ORCHARD RADAR DIGEST**  
[H = Highland; G = Geneva]:

**Roundheaded Appletree Borer**

RAB peak hatch roughly: July 4-July 22 (H)/July 10-July 30 (G).

**Dogwood Borer**

Peak DWB egg hatch roughly: July 21 (H)/July 29 (G).

**Codling Moth**

Codling moth development as of July 17:  
2nd generation adult emergence at 20% (H)/3% (G) and 2nd generation egg hatch at 2% (H)/% (G) [1st generation egg hatch at 99% (G)].  
2nd generation 7% CM egg hatch = target date for first spray where multiple sprays needed to control 2nd generation CM: July 21 (H)/ July 31 (G).

**Oriental Fruit Moth**

2nd generation - second treatment date, if needed: July 18 (G).

**Spotted Tentiform Leafminer**

Second optimized sample date for 2nd generation STLM sapfeeding mines, if needed: July 19 (G).

**White Apple Leafhopper**

2nd generation WALH found on apple foliage: July 27 (H)/ August 6 (G).

| PEST FOCUS       |   |
|------------------|---|
| <b>Wayne Co:</b> | Apple Maggot 1st trap catches, 7/14.  |
| <b>Highland:</b> | Apple Maggot 1st trap catch, 7/12. At threshold in high-pressure block.<br>Codling Moth 2nd flight start today, 7/17. |

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| <p><b>SPRAYING<br/>DON'T<br/>PAY</b></p> |
|--|

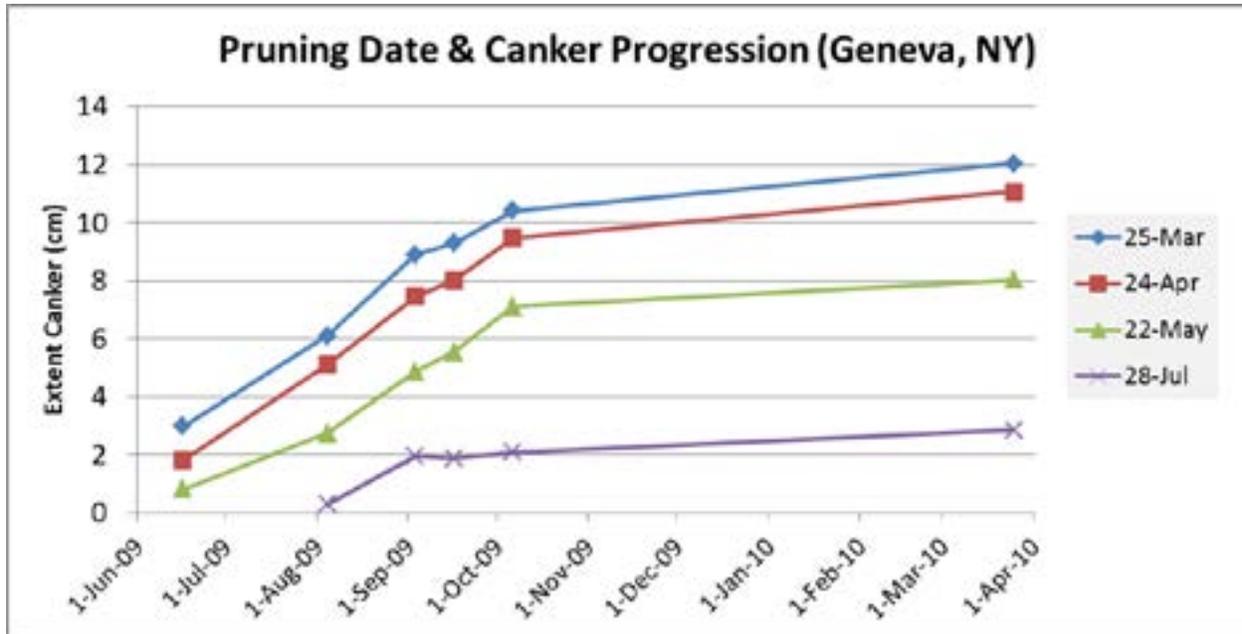
**PRUNE CHERRIES AFTER HARVEST TO MANAGE BACTERIAL CANKER**  
(Julie Carroll, NYS IPM Program, Geneva; [jec3@cornell.edu](mailto:jec3@cornell.edu))

❖❖ To manage bacterial canker infections in sweet cherry, the best time to prune is after harvest. Whenever you prune your trees, make sure the weather is dry and no rain is in the forecast.

Four years of research on the whether it's worth it to apply copper sprays before and after pruning sweet cherries found no benefit from applying copper, even when pruning cuts were inoculated with bacteria. We tested another material, as well, and got the same results – don't spray before or after pruning, it doesn't help. What does help is the timing of pruning. Prune after harvest is complete. Also, leave a pruning stub. Our research in New York in both Geneva and Highland gave comparable results. Canker progresses down pruning stubs the least when pruning is done after harvest (see figure). There is little further progression

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of canker down the stub during the fall and dormant seasons, as well.

Bacteria gain entry into the tree through leaf scars during leaf fall in autumn. Copper sprays timed at 20% and 80% leaf drop protect the tree from some of this infection. Cool, wet weather is optimal for bacteria to grow on plant surfaces; therefore, a late dormant copper

spray can also prove useful. Interestingly, the more severe bacterial canker pruning wound infections occurred on trees pruned in March, April, and May, when weather conditions are typically cool and wet.

Prune cherries after harvest, when weather is dry and don't spray those pruning cuts. ❖❖



Bacterial canker on cherry limb. [photo: G. Sundin]

| INSECT TRAP CATCHES<br>(Number/Trap) |             |             |             |                             |            |             |             |  |
|--------------------------------------|-------------|-------------|-------------|-----------------------------|------------|-------------|-------------|--|
| Geneva, NY                           |             |             |             | Highland, NY                |            |             |             |  |
|                                      | <u>7/10</u> | <u>7/14</u> | <u>7/17</u> |                             | <u>7/3</u> | <u>7/10</u> | <u>7/17</u> |  |
| Redbanded leafroller                 | 28.5        | 16.0        | 6.0         | Redbanded leafroller        | 16.0       | 22.0        | 15.5        |  |
| Spotted tentiform leafminer          | 184.0       | 144.0       | 158.0       | Spotted tentiform leafminer | 177.0      | 271.5       | 193.5       |  |
| Oriental fruit moth                  | 25.5        | 48.5        | 5.5         | Oriental fruit moth         | 1.5        | 4.5         | 3.5         |  |
| Codling moth                         | 2.0         | 3.0         | 1.5         | Lesser appleworm            | 20.0       | 21.0        | 0.0         |  |
| Lesser peachtree borer               | 10.5        | 2.5         | 4.0         | Obliquebanded leafroller    | 9.5        | 16.5        | 4.5         |  |
| Peachtree borer                      | 8.5         | 6.0         | 4.5         | Codling moth                | 6.0        | 2.0         | 10.0*       |  |
| Dogwood borer                        | 5.0         | 7.0         | 1.5         | San Jose scale              | 0.0        | 0.5*        | 53.0        |  |
| Obliquebanded leafroller             | 7.0         | 7.5         | 5.0         | Sparganothis fruitworm      | 0.0        | 1.5         | 0.0         |  |
| Apple Maggot                         | 0.0         | 0.0         | 0.0         | Variegated leafroller       | 2.0        | 0.0         | 0.0         |  |
|                                      |             |             |             | Tufted Apple Bud Moth       | 7.0        | 1.5         | 0.0         |  |
|                                      |             |             |             | Dogwood Borer               | 4.0        | 3.5         | 0.5         |  |
|                                      |             |             |             | Apple Maggot                | 0.0        | 0.0         | 4.3         |  |

\* first catch

| UPCOMING PEST EVENTS                            |                               |             |             |
|---|-------------------------------|-------------|-------------|
|   |                               | <u>43°F</u> | <u>50°F</u> |
| Current DD*                                     | (Geneva 1/1-7/17/17):         | 1834.4      | 1118.1      |
| accumulations                                   | (Geneva 1/1-7/17/16):         | 1867.8      | 1230.3      |
|   | (Geneva "Normal"):            | 1890.8      | 1249.3      |
|   | (Geneva 1/1-7/24, predicted): | 2043.9      | 1278.6      |
|   | (Highland 1/1-7/17/17):       | 2268.0      | 1504.0      |
| <u>Coming Events: Ranges (Normal ±StDev):</u>   |                               |             |             |
| American plum borer 2nd flight starts           |                               | 1560-2140   | 1028-1434   |
| Apple maggot 1st oviposition punctures          |                               | 1605-2157   | 1144-1544   |
| Codling moth 2nd flight starts                  |                               | 1775-2234   | 1028-1499   |
| Codling moth 2nd flight peak                    |                               | 1948-2693   | 1298-1863   |
| Comstock mealybug 1st flight subsides           |                               | 1818-2132   | 1216-1418   |
| Comstock MB 2nd gen crawlers increasing         |                               | 2012-2638   | 1292-1811   |
| Lesser appleworm 2nd flight starts              |                               | 1429-2108   | 924-1405    |
| Obliquebanded leafroller 1st flight subsides    |                               | 1622-2041   | 1054-1375   |
| Oriental fruit moth 2nd flight subsides         |                               | 2024-2532   | 1346-1764   |
| Spotted tent. leafminer 2nd gen flight subsides |                               | 2002-2361   | 1323-1630   |
| *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.

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