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Update on Pest Management and Crop Development

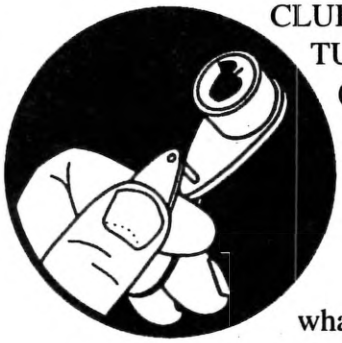
FRUIT JOURNAL

August 28, 2006 VOLUME 15, No. 24 Geneva,

INSECTS

GOING OFF SCREEN

ORCHARD RADAR DIGEST



CLUBHOUSE TURN (Art Agnello, Entomology, Geneva)

BUGGY RACE

Geneva Predictions:

Codling Moth

Codling moth development as of August 28: 2nd generation adult emergence at 100% and 2nd generation egg hatch at 92%.

MODEL BUILDING:

Insect model degree day accumulations: DD45 since 1st Oriental Fruit Moth 2nd generation catch, July 5 (100% egg hatch @ 1235–1260):

APPLETON: 1292
KNOWLESVILLE: 1305
SODUS: 1207
WILLIAMSON: 1261

[NOTE: Consult our mini expert system for arthropod pest management, the Apple Pest Degree Day Calculator http://www.nysaes.cornell.edu/ipm/specware/newa/appledd.php

Find accumulated degree days between dates with the Degree Day Calculator http://www.nysaes.cornell.edu/ipm/specware/newa/

Powered by the NYS IPM Program's NEWA weather data and the Baskerville-Emin formula]

❖❖

❖❖ This year has seen somewhat of a return to the hot, sufficiently wet summers that we used to have on a regular basis. As a result, most arthropod pest problems have been fairly predictable (whether predictably severe or light), with few major surprises. This has been reflected in the fact that most growers have done a pretty good job of staying on top of their pest management demands, and we're nearly done with the last of these duties.

Of greatest potential concern are the internal leps, which have been plentiful enough in

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the normal trouble spots. Therefore, to be cautious, we're not ruling out the possibility that blocks with a history of internal worm problems might need a last-minute application of a short-PHI material to help stave off the final feeding injury caused by young larvae. Before the harvest period begins in earnest, a fruit examination could help determine whether the last brood of any of the likely species needs a final deterrent before the sprayer is put away. Some thought might be given to using an alternative material such as a B.t., a pyrethroid, Calypso, Assail, or a sprayable pheromone, as appropriate (watch your PHIs).

Another season-end problem that may deserve attention now is pearleaf blister mite, a sporadic pest of pears that shows up in a limited number of commercial pear orchards and is a fairly common problem in home plantings. The adults are very small and cannot be seen without a hand lens; the body is white and elongate oval in shape, like a tiny sausage. The mite causes three distinct types of damage. During winter, the feeding of the mites under the bud scales is believed to cause the bud to dry and fail to develop. This type of damage is similar to and may be confused with bud injury from insufficient winter chilling. Fruit damage is the most serious aspect of blister mite attack. It occurs as a result of mites feeding on the developing pears, from the green-tip stage through bloom, causing russet spots. These spots, which are often oval in shape, are usually depressed with a surrounding halo of clear tissue. They are 1/4–1/2 inch in diameter and frequently run together. A third type of injury is the blistering of leaves; blisters are 1/8–1/4 inch across and, if numerous, can blacken most of the leaf surface. Although defoliation does not occur, leaf function can be seriously impaired by a heavy infestation.

The mite begins overwintering as an adult beneath bud scales of fruit and leaf buds, with fruit buds preferred. When buds start to grow in the spring, the mites attack developing fruit and emerging leaves. This produces red blisters in which female blister mites then lay eggs. These resulting new colonies of mites feed on the tissue within the protection of the blister, but they can move in and out through a small hole in its center. The mites pass through several generations on the leaves but their activity slows during the warm summer months. The red color of the blisters fades and eventually blackens. Before leaf fall, the mites leave the blisters and migrate to the buds for the winter.

For those plantings that might be suffering from this errant pest, a fall spray is recommended sometime in early October, when there is no danger of frost for at least 24–48 hr after the spray. Use Sevin 50 WP (2 lb/100), or 1–1.5% oil plus either Diazinon 50WP (1 lb/100 gal) or Thionex 50WP (1/2–1 lb/100 gal). A second spray of oil plus Thionex, in the spring, just before the green tissue begins to show, will improve the control.❖❖

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is published weekly from March to September by Cornell University—NYS Agricultural Experiment Station (Geneva) and Ithaca—with the assistance of Cornell Cooperative Extension. New York field reports welcomed. Send submissions by 3 pm Monday to:

scaffolds FRUIT JOURNAL
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This newsletter available on CENET at: news://newsstand.cce.cornell.edu/cce.ag.tree-fruit
and on the World Wide Web at:
http://www.nysaes.cornell.edu/ent/scaffolds/

DISEASES

HONEY CRISPED

EARLY AUGUST HEAT AFFECTS HONEYCRISP FRUIT

(Dave Rosenberger, Plant Pathology, Highland)

❖❖ In eastern New York and parts of New England, high temperatures (mid-90's °F) and high humidity created uncomfortable conditions during the first few days of August. Within a week, some of the Honeycrisp apples in our planting at the Hudson Valley Lab began showing signs of severe sunburn and heat injury. Several growers in Massachusetts and southern Vermont brought Honeycrisp fruit with similar symptoms to the field day hosted by Northeast Fruit Consultants on August 17.

Most growers recognize sunburn when it shows up as browning or bleaching of the skin on the sunward faces of apple fruits growing in exposed positions within the tree canopy (Fig. 1). However, internal fruit damage caused by high temperatures is less common. High ambient temperatures combined with solar heating

Fig. 1 Sunburn

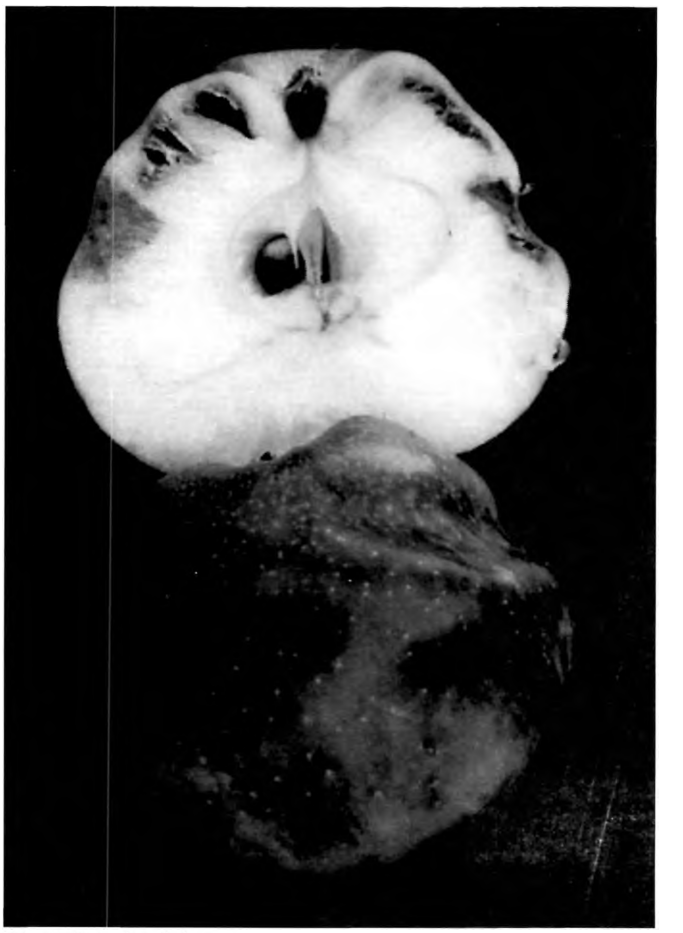

Fig. 2 Interior injury

of exposed fruit can cause breakdown of cells in the fruit flesh. The injury first appears as water-soaked areas on the fruit surface. Water-soaking is also evident in the fruit flesh if fruit are inspected soon after the injury has occurred. Because the damaged cells die and collapse, whereas non-killed cells in the fruit continue to grow, fruit soon become misshapen. Sections through the damaged fruit then reveal necrotic and collapsed tissues (Fig. 2).

Honeycrisp fruit damaged by sunburn or heat injury are especially susceptible to invasion by the species of *Botryosphaeria* and *Colletotrichum* that cause black rot, white rot, and bitter rot. The heat-damaged skin can no longer maintain the natural defense mechanisms that normally help to protect apple fruit from infection by these pathogens, so summer fruit rots may appear even where reason-

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able fungicide protection has been maintained through summer.(Fig. 3) In some cases, pathogens initially cause lenticel spots on sunburned areas of the fruit, and those spots later enlarge into summer fruit rots. Damaged fruit may be more prone to premature fruit drop, although such natural "pre-sorting" is never perfect and the falling fruit may cause bruises on fruit lower in the trees.

Fig. 3. Heat decay

Nothing can be done at this point to mitigate losses from sunburn and heat injury that occurred in early August. In regions like the Hudson Valley where high temperatures during August are not uncommon, Honeycrisp growers may need to experiment with overhead cooling to protect the crop during August heat waves. Otherwise, the apparent susceptibility of Honeycrisp to heat injury is just one more justification for maintaining a high sales price for this difficult-to-grow cultivar.❖❖

GENERAL INFO

LAST CALL

FINAL REMINDER - TREE FRUIT PEST CONTROL FIELD DAY

❖❖ Please remember to make plans to attend this year's N.Y. Fruit Pest Control Field Day, which will take place during Labor Day week on Sept. 7 and 8. The Geneva installment will take place first (Thursday Sept. 7), with the Hudson Valley segment on the second day (Friday Sept. 8). Activities will commence in Geneva on the 8th, with registration, coffee, etc., in the lobby of Barton Lab at 8:30 am. [NOTE: The entryway to Barton is under repair and the door facing the parking lot will still probably be closed off, so it will be necessary to walk around to the Castle St. door to enter the building.] The tour will proceed to the orchards to view plots and preliminary data from field trials involving new fungicides, bactericides, miticides, and insecticides on tree fruits and grapes. It is anticipated that the tour of field plots will be completed by noon. On the 8th, participants will register at the Hudson Valley Laboratory starting at 8:30, after which we will view and discuss results from field trials on apples/pears. ❖❖

UPCOMING PEST EVENTS

	43°F	50°F
Current DD accumulations (Geneva 1/1–8/28/06):	3092	2128
(Geneva 1/1–8/28/2005):	3164	2237
(Geneva "Normal"):	2965	2011
(Geneva 1/1–9/4 Predicted):	3250	2237

Coming Events:	Ranges(Normal±StDev):	
Spotted tentiform leafminer 3rd flight subsides	3230–3444	2246–2432
Redbanded leafroller 3rd flight peak	2746–3206	1881–2327
Redbanded leafroller 3rd flight subsides	3124–3436	2142–2422
San Jose scale 2nd flight subsides	2639–3349	1785–2371
Obliquebanded leafroller 2nd flight peak	2620–3016	1784–2108
Obliquebanded leafroller 2nd flight subsides	2965–3489	2036–2458
Oriental fruit moth 3rd flight peak	2641–3249	1821–2257
Oriental fruit moth 3rd flight subsides	2962–3381	2000–2288
Lesser appleworm 2nd flight subsides	2883–3467	1973–2387
Apple maggot flight subsides	2772–3374	1908–2368
Lesser peachtree borer flight subsides	2996–3446	2017–2433
Codling moth 2nd flight subsides	2859–3583	1944–2536
American plum borer 2nd flight subsides	3136–3614	2184–2544

INSECT TRAP CATCHES (Number/Trap/Day)

Geneva, NY

	8/21	8/24	8/28
Redbanded leafroller	0.5	0.5	0.6
Spotted tentiform leafminer	8.6	29.2	17.3
Lesser appleworm	0.0	0.0	0.1
Oriental fruit moth	0.0	0.0	1.5
San Jose scale	203	237	41
American plum borer	0.4	0.0	0.0
Lesser peachtree borer	0.0	0.0	0.0
Dogwood borer	0.7	–	2.8
Obliquebanded leafroller	0.0	0.0	0.0
Peachtree borer	0.0	0.0	0.0

Highland, NY

	8/14	8/21
Spotted tentiform leafminer	8.4	–
Oriental fruit moth	2.4	2.7
Codling moth	0.7	0.2
Obliquebanded leafroller	0.2	0.4
Fruit tree leafroller	0.0	0.0
Tufted apple budmoth	0.0	0.0
Variegated leafroller	0.1	0.2
Lesser peachtree borer	0.9	0.3
Dogwood borer	0.2	0.1
Lesser appleworm	1.7	3.8
Apple maggot	0.5	0.7
Redbanded leafroller	0.9	3.8

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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.

This material is based upon work supported by Smith Lever funds from the Cooperative State Research, Education, and Extension Service, U.S. Department of Agriculture. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the U.S. Department of Agriculture.