# scaffolds FRUIT JOURNAL

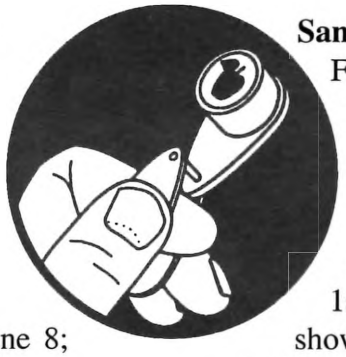
Update on Pest Management and Crop Development

May 23, 2005 VOLUME 14, No. 10 Geneva, NY

INSECTS

## ANGEL ECHOES

ORCHARD RADAR DIGEST



Geneva Predictions:

**Roundheaded Appletree Borer**

RAB adult emergence begins: June 8; Peak emergence: June 21.

RAB egglaying begins: June 16. Peak egglaying period roughly: July 5 to July 19.

**Codling Moth**

1st generation, first sustained trap catch biofix date: May 26.

**Lesser Appleworm**

1st LAW flight peak trap catch: May 30.

**Mullein Plant Bug**

Expected 50% egg hatch date: May 24, which is 8 days before rough estimate of Red Delicious petal fall date.

The most accurate time for limb tapping counts, but possibly after MPB damage has occurred, is when 90% of eggs have hatched.

90% egg hatch date: May 31.

**Obliquebanded Leafroller**

1st generation OBLR flight, first trap catch expected: June 18.

**Oriental Fruit Moth**

Optimum 1st generation first treatment date, if needed: May 27.

**San Jose Scale**

First adult SJS caught on trap: May 26.

**Spotted Tentiform Leafminer**

1st STLM flight, peak trap catch: May 15.

1st generation sapfeeding mines start showing: May 30.

Optimum sample date is around May 31, when a larger portion of the mines have become detectable.

**White Apple Leafhopper**

1st generation WALH found on apple foliage: May 21.

continued...

## IN THIS ISSUE...

*Highland Predictions*:

**Roundheaded Appletree Borer**

RAB adult emergence begins: June 2; Peak emergence: June 15.

RAB egglaying begins: June 10. Peak egglaying period roughly: June 29 to July 13.

**Codling Moth**

1st generation, first sustained trap catch biofix date: May 12.

Codling moth development as of May 23: 1st generation adult emergence at 7% and 1st generation egg hatch at 0%.

**Mullein Plant Bug**

Expected 50% egg hatch date: May 17, which is 7 days before rough estimate of Red Delicious petal fall date.

The most accurate time for limb tapping counts, but possibly after MPB damage has occurred, is when 90% of eggs have hatched.

90% egg hatch date: May 27.

**Obliquebanded Leafroller**

1st generation OBLR flight, first trap catch expected: June 12.

**Oriental Fruit Moth**

Optimum 1st generation second treatment date, if needed: June 3.

**San Jose Scale**

1st generation SJS crawlers appear: June 21.

**Spotted Tentiform Leafminer**

1st generation optimum sample date is around May 23, when a larger portion of the mines have become detectable.

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## NEWA TOOLS

DEGREE DAY CALCULATOR & APPLE PEST DEGREE DAY CALCULATOR IN NEWA

(Juliet Carroll, IPM, Geneva)

❖❖ A new feature in NEWA that recently went live online is a Degree Day Calculator. Simply choose the base temperature, choose the weather station location, choose the year, choose the start and end dates, and press "Calculate"! The Degree Day Calculator will return the total accumulated degree days for the period of your request and the degree days for each of the last five days in your query. Test it out and see how easy and convenient it is to use. The website is: http://www.nysipm.cornell.edu/specware/newa/

Art Agnello, Harvey Reissig and I also developed an Apple Pest Degree Day Calculator. This one is even easier to use! Simply choose the insect pest of interest, confirm the biofix date, choose the weather station location, and press "Calculate"! The Apple Pest Calculator returns the accumulated degree days for the insect phenological model's base tempera-

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**scaffolds**

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:

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http://www.nysaes.cornell.edu/ent/scaffolds/

ture and a message informing you of what IPM action is predicted by the model. The Apple Pest Calculator website is: http://www.nysipm.cornell.edu/specware/newa/appledd.php

These improvements to the NEWA website were made possible through a grant obtained from the Northeast IPM Regional Program. In addition to calculating the accumulated degree days and reporting on the degree day accumulations for the last five days, the Calculators will also inform you if there is any missing data and on which days. The Degree Day and Apple Pest Calculators will run from March 1 through November 1 each year. ❖❖

DISEASES

## FRUIT SALAD

POST-BLOOM FUNGICIDES FOR STONE FRUITS
(Dave Rosenberger, Plant Pathology, Highland)

❖❖ Designing fungicide programs for stone fruits is especially difficult for diversified farms that include small acreages of different stone fruit crops. Many growers would like one fungicide program that could be applied to all of their stone fruits (apricots, sweet cherries, tart cherries, peaches, nectarines, plums/prunes). That is often impossible because of label restrictions, differential sensitivity of crops to injury by some fungicides, and variations in diseases that must be targeted on the various crops. The following article discusses considerations for selecting post-bloom fungicides for stone fruits in New York and other northeastern states.

**Common Post-bloom Diseases**

Brown rot infections can occur on green fruit after shuck split, especially on sweet cherry. Other stone fruits, though less susceptible to green fruit infections than cherries, sometimes develop green fruit infections in high inoculum blocks or in years with extended warm periods shortly after shuck split.

Black knot infections occur mostly during a 4 to 6-week period that begins just prior to bloom. Japanese plums and tart cherries are generally less susceptible to black knot than European prune-type plums, but they still need fungicide protection if grown where inoculum is present.

Cherry leaf spot can defoliate both sweet and tart cherries. Fungicide protection should begin at petal fall and continue through summer. Fungicide sprays may be needed at 7 to 14-day intervals during May, June, and early July, especially where inoculum is abundant. A postharvest spray is essential in wet years to prevent trees from defoliating prematurely.

Peach scab is only a sporadic problem in New York. One or two sprays beginning at shuck split usually suffice to control this disease.

Rusty spot on peach is a mildew disease caused by the same fungus that causes apple powdery mildew. One or two mildewcide sprays may be needed after shuck split to keep fruit from developing this disorder.

**Fungicides and Their Limitations**

**Chlorothalonil** (Bravo, Echo) is labeled on all stone fruits. It provides fair control of brown rot blossom blight, although brown rot is no longer listed on the Bravo label. Chlorothalonil is excellent against black knot, cherry leaf spot, and peach scab, but it cannot be applied after shuck split except in postharvest applications to control cherry leaf spot or autumn sprays to control peach leaf curl. The Bravo label specifies a minimum of 10 days between treatments, and both labels imply a maximum of three sprays during the bloom to shuck split period. A shuck split spray can provide extended control of brown rot (green fruit infections), black knot, cherry leaf spot and peach scab due to the excellent retention and redistribution capabilities of this fungicide.

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**Captan** is labeled on all stone fruits and provides good control of brown rot, black knot, cherry leaf spot, and peach scab. However, on some plum and cherry varieties, it can cause severe shot-holing or tattering of leaves, and it sometimes damages peach foliage when applied with a surfactant that enhances uptake into the plant tissue. Captan is an economical choice for brown rot control on peaches and nectarines during bloom, petal fall, shuck split, and first cover.

**SI fungicides** include Orbit, Elite, Indar, Nova, Procure, and Rubigan. Label restrictions and spectrum of diseases controlled by these fungicides vary greatly! Nova, Procure, and Rubigan are relatively ineffective against brown rot, whereas Orbit, Elite, and Indar are among the best brown rot fungicides. All six of these fungicides have provided good to excellent control of cherry leaf spot and mildew diseases on stone fruits. However, fungicide resistance problems are emerging in other states. The SI fungicides are losing effectiveness against brown rot in some orchards in the southeastern United States and against cherry leaf spot in some orchards in Michigan. The SIs have never been very effective against black knot, and only Indar is labeled for peach scab. Specific considerations for the three products that control brown rot include the following:

Orbit is labeled on all stone fruits, but a maximum of 5 applications per year are allowed when it is used at the labeled rate of 4 fl oz/A. The label contains additional restrictions on when those sprays may be applied.

Elite is labeled only on cherries, peaches, and nectarines. The labeled maximum of 3 lb/A/season allows only six applications per season when applied at the maximum label rate.

Indar is labeled on all stone fruits except plums/prunes. The label allows a maximum of eight applications per season and label wording allows considerable freedom on spray timing. Work by Wilcox showed that Indar is hard to beat for brown rot control on tart cherries, especially if applied with a spreader-sticker.

**Strobilurin** fungicides include Abound, Flint, and Pristine. All three products are labeled on all stone fruit crops.

Abound is not recommended for stone fruit in NY because of its phytotoxicity to apples: Even a slight amount of drift or residue left in sprayers can severely damage fruit and leaves of susceptible apple cultivars.

Flint is very effective for controlling cherry leaf spot and provides an effective alternative to SI fungicides for leaf spot control during the interval after the last Bravo spray at shuck split and before SI sprays or brown rot sprays are initiated during the preharvest period. Flint is not very effective for brown rot, nor is it labeled for brown rot.

Pristine is actually a package mix of a strobilurin and another fungicide chemistry. It is very effective on brown rot, cherry leaf spot, and mildew diseases. Only two back-to-back applications are permitted, with a maximum of five applications per season. Where growers have different varieties of peaches or plums that mature over an 8–12 week period, Pristine should be used at least once or twice during the summer as part of a resistance management strategy for breaking up the string of SI fungicides that are otherwise applied to successive cultivars as they ripen.

**Sulfur** sprays can control rusty spot on peach and mildew on cherry, and sulfur provides good suppression of peach scab. However, sulfur can be phytotoxic to apricots, and most sulfur fungicides are therefore not labeled for apricots. ❖❖

CHEM NEWS

## FRESH FRUIT

### PRISTINE — A NEW FRUIT FUNGICIDE REGISTERED IN NY

(Dave Rosenberger, Plant Pathology, Highland)

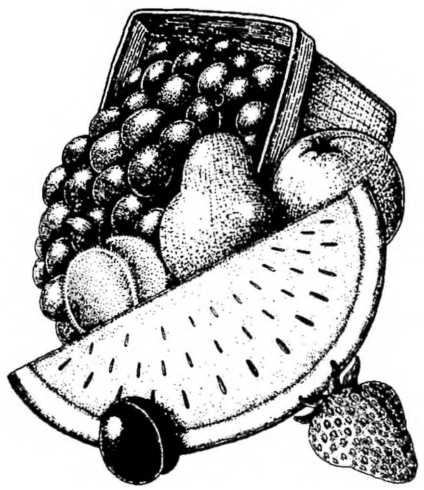
❖❖ Pristine fungicide from BASF was labeled in New York on 15 April for use on apples, stone fruits, grapes, berries (strawberries and cane berries) and some vegetable crops. Pristine contains 12.8% pyraclostrobin (a 2nd generation stroby) and 25.2% boscalid (primarily effective against Botrytis and brown rot-type of pathogens). Taken together, Pristine is a 38% WP fungicide. All federally labeled uses are allowed in NY except for aerial applications. In university trials, Pristine has provided outstanding disease control on both stone fruits and pome fruits.

Pristine is labeled on all stone fruits at 10.5–14.5 oz/A to control brown rot blossom blight, brown rot fruit infections, leaf spot, powdery mildew, scab and shot hole disease. When applied to stone fruits during the preharvest period in university trials, Pristine has almost always matched the performance of the best SI fungicides and in some cases has provided even better control than the SIs. In general, 10.5 oz/A was just as effective as 14.5 oz/A. The label allows a 0-day preharvest interval on stone fruits and up to 5 applications per season, but not more than 2 back-to-back applications.

Peach and plum growers who have different varieties ripening over a long period of time should use at least one or two applications of Pristine in the mid-season to break up the constant selection pressure for SI-resistant brown rot. Even though any given peach or plum variety may receive only one or two SI sprays, the brown rot population can move from one variety to another as different varieties ripen. As a result, brown rot can be exposed to numerous SI sprays if early, mid-, and late season varieties are grown adjacent to one another. Using Pristine for mid- or late season cultivars when disease pressure is greatest may allow improved control while at the same time reducing selection pressure for SI-resistant brown rot.

On pome fruits, Pristine is labeled for use on apple, pear, oriental pear, quince, crabapple, and loquat to control apple scab, pear scab, Alternaria blotch, bitter rot, black rot, white rot, Brooks spot, flyspeck, and sooty blotch. It also provides suppression of rust diseases. The labeled rate for pome fruit is 14.5–18.5 oz/A, and the label specifically prohibits its application of less than 14.5 oz/A. The latter provision creates headaches for growers using tree row volume or smart sprayers, but the 14.5 oz/A minimum is a federal law because it is specified on the federal label. The pome fruit label includes a 0-day PHI, maximum of 4 applications per season, and maximum of 2 back-to-back applications.

Because it will be more expensive than alternative fungicides, Pristine will prove cost-effective primarily for high-value apples or situations where unusually high disease pressure threatens the crop. One example might be Honeycrisp apples, where one or two applications of Pristine in late summer may help to prevent postharvest development of bitter rot, black rot, white rot, gray mold, and blue mold. ❖❖



## PEST FOCUS

Highland:
First **codling moth** trap catch 5/20. **San Jose scale** model degree days (base 50°F) since March 1 = 302.8 **Oriental fruit moth** degree days (base 45°F) since biofix = 118.4

Geneva: 1st **American plum borer** trap catch, 5/23.

Appleton, Niagara Co.: 1st **codling moth** trap catch 5/18

Lafayette, Onandoga Co.: 1st **lesser appleworm** trap catch, 5/17

## UPCOMING PEST EVENTS

| | 43°F | 50°F |
|---|---|---|
| Current DD accumulations (Geneva 1/1–5/23): | 443 | 220 |
| (Geneva 1/1–5/23/2004): | 642 | 375 |
| (Geneva "Normal"): | 567 | 300 |
| (Geneva 5/30 Predicted): | 504 | 248 |
| (Highland 1/1–5/23): | 583 | 303 |

| **Coming Events:** | **Ranges(Normal± StDev):** | |
|---|---|---|
| San Jose scale 1st catch | 375–595 | 184–322 |
| Lesser appleworm 1st catch | 239–537 | 104–286 |
| STLM 1st sap-feeders present | 343–601 | 165–317 |
| Codling moth 1st catch | 389–587 | 188–324 |
| Oriental fruit moth 1st flight peak | 331–511 | 161–271 |
| European red mite 1st summer eggs present | 447–555 | 237–309 |
| Pear psylla hardshells present | 493–643 | 271–361 |
| McIntosh at fruit set | 515–613 | 271–335 |
| Red Delicious at petal fall | 480–640 | 260–326 |

## PHENOLOGIES

Geneva:
Apple (McIntosh): Petal fall
Apple (Red Delicious): 25% petal fall
Apple (Empire): Petal fall
Tart cherry (Mont.): Fruit set
Pear: Fruit set

Highland:
Apple (McIntosh): Fruit 12 mm
Apple (Red Delicious): Fruit 9 mm
Apple (Empire): Fruit 11 mm
Pear: Fruit set, fruit 13mm
Peach: Fruit set, shucks off
Plum: Fruit set, fruit 8–9mm

## INSECT TRAP CATCHES (Number/Trap/Day)

**Geneva, NY**

| | 5/16 | 5/19 | 5/23 |
|---|---|---|---|
| Redbanded leafroller | 2.5 | 1.0 | 0.6 |
| Spotted tentiform leafminer | 3.8 | 3.8 | 1.3 |
| *Oriental fruit moth* | 0.3* | 0.0 | 0.0 |
| Lesser appleworm | 0.0 | 0.0 | 0.0 |
| San Jose scale | 0.0 | 0.0 | 0.0 |
| Codling moth | 0.0 | 0.0 | 0.0 |

**Highland, NY**

| | 5/16 | 5/23 |
|---|---|---|
| Redbanded leafroller | 2.9 | 0.6 |
| Spotted tentiform leafminer | – | 9.6 |
| Oriental fruit moth | 6.0 | 1.6 |
| Lesser appleworm | 0.6 | 0.6 |
| San Jose scale | 0.0 | 0.0 |
| Codling moth | 0.0 | 0.1* |
| Obliquebanded leafroller | 0.0 | 0.0 |

* first catch

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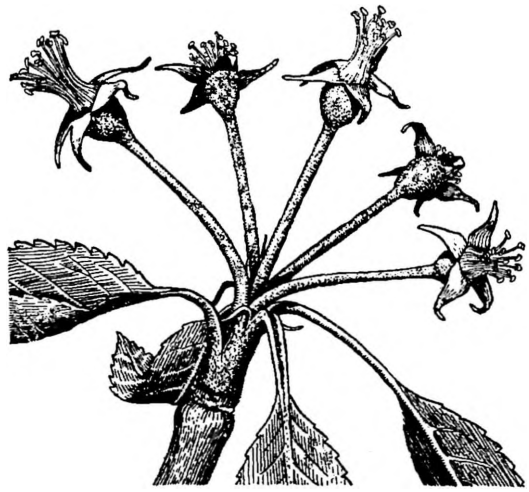

NOTE: Every effort has been made to provide correct, complete and up-to-date pesticide recommendations. Nevertheless, changes in pesticide regulations occur constantly, and human errors are possible. These recommendations are not a substitute for pesticide labelling. Please read the label before applying any pesticide.

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