Maine Apple Newsletter
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Apple Scab

For orchards south of Bangor that received rain on Wednesday, June 1, that was the last major primary scab infection period. At Highmoor Farm in Monmouth, the best guess estimate of ascospore maturity on June 1 was 99%, with a high probability that at least 92% of ascospores had matured. For locations that did not receive rain on June 1, the widespread rain on Thursday, June 9 released whatever scab ascospores that may have still be viable.

In the Sanford area, over 90% of the year’s primary scab infection potential has had time to become visible as lesion if infection occurred. For the Monmouth area, about 50% of primary scab infection potential has had time to appear as lesions. By next Friday, June 17, about 90% of primary scab will have had time to appear in the Monmouth area.

Depending on rain timing, it won’t be until June 19 in the Sanford area, and June 26 in the Monmouth area, before ca. 90% of primary scab infection potential will have had time to appear as 2nd generation lesions. Regular scab scouting should continue until then, and fungicide coverage at 14 day intervals should be maintained until you can scout after the respective date for your area to confirm that primary scab control was successful.

Arrangements have been made to submit scabby leaf samples from unsprayed trees in, on the border, or just across a property line, of commercially managed orchards in order to acquire information on the prevalence and degree of scab resistance to dodine, DMI-sterol inhibitor, and strobilurin fungicides. If you know of apple scab lesions in or adjacent to your orchard that will not be oversprayed with fungicide, let me know if you would like to have those leaves sampled for fungicide resistance. The number of guaranteed slots have already been taken, but it might be possible to get additional sites tested.

Scab counts in 35 blocks over the past two weeks have found mostly “0”. But a few problem spots have been found. Scab infection is now heavy in unsprayed trees. If the number of infected leaves is relatively low, in the range of 6–18 leaves per 100 shoots and fruit clusters, then two captan applications 7 days apart may be enough to contain the scab. Other options were discussed in the May 11 newsletter.
**Fire Blight**

If fire blight blossom infections began May 26 – June 2, then symptoms of dying fruit clusters would become apparent by June 6–15. It seems that the first notice of fire blight is often shoot blight arising either from unnoticed blossom strikes or from overwintered fire blight cankers. Shoot blight would not appear until later in June or early July.

Apple pith moth larvae tunnel into shoot tips and cause a tip dieback that resembles fire blight strikes. But apple pith moth damage is rare except in trees that did not receive insecticide the previous August. If you cut across the end of a wilted shoot tip and see a tunnel hole, and possible sawdust like frass and a larva, then it the damage was caused by apple pith moth.

If you see damage that you suspect of being fire blight please let me know. If it is indeed fire blight, prompt cutting and removal (and cleaning blades before reusing them on healthy tissue) is recommended.

If fire blight is active in an orchard that receives hail damage, wounds caused by hail can become infected and causes a new wave of shoot blight (“trauma blight”) about 8–12 days later depending on temperatures.

**Plum curculio**

Plum curculio are actively cutting fruit and laying eggs. Insecticide residue should be maintained on perimeter row trees until June 17 in the Sanford area, and June 24 in the Monmouth area.

Sevin (carbaryl) used for thinning also acts as an insecticide against plum curculio, but at the 1 pint per 100 gallons rate it is probably only effective for 3 or 4 days. As a thinner, Sevin is relatively insensitive to higher rate. Using the insecticidal rate (1 quart per 100 gallons of Sevin XLR) will provide about a week of protection against plum curculio.

**European red mite**

Mite counts have been at or near zero in just about every one of 35 blocks checked in the past two weeks. The exceptions were one block just under threshold, and one block over threshold of 30% of middle-aged fruit cluster leaves with living hatched mites present.

European red mite populations recede after the first generation adults die off and before 2nd generation eggs hatch into nymphs. ERM should make a resurgence starting around June 14 in Sanford, and June 22 in Monmouth.
**Leafminer**

1st generation leafminer have been non-existent in scouted orchards. The wet weather prior to and during early bloom was not favorable for leafminer reproduction.

A few orchards that had problems with leafhoppers last year already have some white apple leafhopper showing up. Sevin used for thinning will also help suppress leafhoppers. If you had problems with leafhoppers last year, keep an eye on them and treat if you find more than an average of 1 per leaf.

**Thinning Apples**

Hot weather brings temporary stress that causes leaf wilting, curling or leaf burn. This is showing up in the orchards at Highmoor Farm. It is not expected have a major impact on fruit growth and is actually common this time of year.

**The Current Thinning Situation**

Fruitlets are rapidly reaching a size where they become resistant to thinning. At Highmoor Farm, average king fruit diameter is 12 mm as of June 10, so there is very little time to re-thin if needed. The king fruit are the largest in the cluster. Fruit become unresponsive to thinners once they reach a size of 15 to 18 mm. With fruit size reaching 15 mm, you need to combine carbaryl with NAA or Maxcel to get any thinning. Use higher rates of NAA or Maxcel for hard to thin varieties such as Honeycrisp and Macoun. As a last resort thinner for fruit that are past 18 mm, Ethrel can be combined with Sevin, but is known to be an unpredictable thinner, over thinning in some cases and not thinning in others (page 164 in the *New England Tree Fruit Management Guide*).

Thinners applied Monday June 6 will hopefully show sufficient fruit drop soon. It takes about 7 to 14 days depending on temperatures to see the first stages of thinning, so it is too early to know for certain. If you applied thinners at petal fall, thinning should be apparent by now. If we do not see any signs of thinning by Monday afternoon (June 13), we will probably reapply carbaryl and NAA since fruit set is heavy this year. According to the long range forecast, the next warm spell will occur around Tuesday to Thursday, June 14–16, when fruit diameter is likely to be 15 mm or more.

The best way to determine if thinners are working is to try pulling fruit off the cluster. In the earliest stages, there are no visual signs. The first sign is the ability to remove fruit with very little force. There may be a problem with getting a good measure of thinning on Cortland as in the past. Cortland had a tendency to not shed fruitlets that eventually turn into button fruit or mummies in the recent past. Without any sign of thinning, we reapplied carbaryl and ended up with a light crop. This was my observation, and I don’t have a good explanation of why it occurred.

**Fruit size and fruit set at Highmoor Farm on June 10**

<table>
<thead>
<tr>
<th>Variety</th>
<th>Fruit diameter in millimeters</th>
<th>Average number of fruit per cluster</th>
</tr>
</thead>
<tbody>
<tr>
<td>McIntosh</td>
<td>13</td>
<td>3</td>
</tr>
<tr>
<td>Cortland</td>
<td>12</td>
<td>3 to 4</td>
</tr>
<tr>
<td>Honeycrisp</td>
<td>11</td>
<td>4</td>
</tr>
<tr>
<td>Macoun</td>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td>Golden Delicious</td>
<td>12</td>
<td>3 to 4</td>
</tr>
</tbody>
</table>
Thinning suggestions listed below are based on temperatures in the range of 70 to 75°F.

For orchards in Southern Maine where thinner has not yet been applied:
- Easy to thin varieties: Sevin and Fruitone at 3 ozs. per 100 gallons dilute equivalent
- Difficult to thin varieties: Sevin and Fruitone at 4 ozs. per 100 gallons dilute equivalent
- Golden Delicious: Sevin and Fruitone at 6 ozs. per 100 gallons dilute equivalent

For orchards in Northern Maine where thinner has not yet been applied:
- Easy to thin varieties: Sevin and Fruitone at 2 ozs. per 100 gallons dilute equivalent
- Difficult to thin varieties: Sevin and Fruitone at 3 ozs. per 100 gallons dilute equivalent
- Difficult to thin varieties with a heavy cropload: Sevin and Fruitone at 4 ozs. per 100 gallons dilute equivalent.

Maxcel can also be combined with Sevin to get aggressive thinning. Use Maxcel at 32 fl. ozs. per 100 gallons dilute equivalent for easy to thin varieties. For difficult to thin varieties combine Sevin with Maxcel at a rate of 48 to 64 ozs. depending on variety and crop load. The thinning rate for Sevin is 1 pint per 100 gallons.

Pears can be thinned by Fruitone or another NAA product or by Maxcel up to 28 days after full bloom. Product rates are listed in the 2011 New England Tree Fruit Pest Management Guide on page 188. If you have not thinned pears yet, there may be a few days left when fruit will respond to thinners. Carbaryl is not listed as a thinner of pears since it can lead to misshapen fruit.
**Return Bloom Enhancement**

Honeycrisp and Golden Delicious are very biennial in bearing habit. If they have a heavy crop this year, the chance for good return bloom next spring is slim. To enhance return bloom, Ethrel or an NAA product can be repeatedly applied after the thinning season. Ethrel breaks down into ethylene, a naturally occurring plant hormone that promotes flower development. It can be applied at 0.5 pint per 100 gallons dilute equivalent in three weekly sprays beginning four to six weeks after bloom (starting at the end of June at Highmoor Farm). Fruitone at 2 ozs. per 100 gallons dilute equivalent at the same timings as for Ethrel also promotes flowering.

Other biennial bearing varieties that could benefit from repeat bloom enhancers are Jonagold, Macoun, Mutsu, Northern Spy, Fortune, Fuji and Pristine.

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**Other stuff**

**Apple Twilight meeting**

A twilight meeting for apple growers is planned for 5:30pm, June 15 at Pulsifer Orchard in Parsonsfield ME. The rain date is June 16. Attendance will qualify for one pesticide applicator recertification credit.

**Topics of discussion:** Current strategies for thinning apples, Pest management situation, Preventing problems with spray drift, Tour of the orchard.

Anything else you want to talk about!

**Directions:** Pulsifer Orchard is located at 24 Pulsifer Orchard Drive (off of Brackett Road). The orchard is located 10 miles south of Kezar Falls just off Route 160. Going south, the orchard is located on the right. The map shown in the previous newsletter was incorrect, and the map at the Maine State Pomological Society website is now correct.


The farm and market are owned by Fran Pulsifer, and she can be contacted by telephone at (207) 632-1720.

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**Lo-o-o-oong Term Rain Outlook**


“Shifting Precipitation Regimes

Precipitation varies between years considerably more than temperature, which makes it more difficult to distinguish long-term trends from short-term fluctuations. Consequently, regional estimates of climate change induced shifts in precipitation patterns vary considerably. Notwithstanding a severe drought in the early 1960s, annual average precipitation in the northeastern United States has increased 5–10% since 1900.”

“...the Northeast is projected to see a steady increase in annual precipitation, with a total increase of about 4 inches by the end of the century. Heavy-precipitation events (> 2 inches of rain falling in 48 hours) are projected to increase 8% by 2050 and 12–13% by 2100.”

“Small decreases in summer precipitation are also forecast by the end of the century under the higher-emissions scenario. Despite only small summer precipitation decreases, evapotranspiration increases due to warmer temperatures are likely to make summers dryer, with an increased incidence of droughts.”
“Farming looks mighty easy when your plow is a pencil and you’re a thousand miles from the corn field.”

- Dwight D. Eisenhower

Orchard Radar weather and pest tracking models at http://pronewengland.org/AllModels/DecisionModels.htm

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