



Maine Tree Fruit Newsletter

Monday, June 6, 2022
 Vol 29:17

Newport charts

Apple growth stages

Date Today's date highlighted. Bloom start/end dates in brown.	Observed & Predicted McIntosh bud stages
Sun, May 22	95% Petal Fall
Mon, May 23	100% Petal Fall
Tue, May 24	
Wed, May 25	
Thu, May 26	
Fri, May 27	
Sat, May 28	near 5mm King fruit
Sun, May 29	
Mon, May 30	6+mm King fruit
Tue, May 31	7+mm KF (PC target)
Wed, Jun 1	
Thu, Jun 2	
Fri, Jun 3	
Sat, Jun 4	
Sun, Jun 5	
Mon, Jun 6	
Tue, Jun 7	
Wed, Jun 8	
Thu, Jun 9	near 12mm KF
Fri, Jun 10	
Sat, Jun 11	
Sun, Jun 12	
Mon, Jun 13	
Tue, Jun 14	14+mm KF
Wed, Jun 15	
Thu, Jun 16	
Fri, Jun 17	
Sat, Jun 18	near 17mm KF
Sun, Jun 19	
Mon, Jun 20	
Tue, Jun 21	20+mm KF
Wed, Jun 22	
Thu, Jun 23	
Fri, Jun 24	
Sat, Jun 25	
Sun, Jun 26	
Mon, Jun 27	25+mm KF

Thinning

Weather data for Newport ME. Forecast values begin June 5, 2022

Estimated Apple Sensitivity to Chemical Thinners

Other factors may outweigh the weather effects use for these estimates. Other influences include: fruit diameter, fruit exposure to temperatures >=75 F, pollination, this year's cropload, last year's cropload, warm February-early April temperatures, frost or prolonged cool and cloudy weather during bloom, previous fall weather, or drought last summer.

Ratings below are for the influence of weather on fruit sensitivity to chemical thinning agents. Ratings assume fruit are less than 15mm diameter. Dates in bottom rows are beyond 20mm diameter for most cultivars, and are intended only for late cultivars.

Look at your fruit! The rating for each day accounts for conditions on that day AND the three following days, i.e. each rating is for a 4-day period. The rated value for a day indicates the influence of daytime clouds and night temperatures in the 96 hours following application on efficacy of a thinner applied on that day. For evening applications, use the rating for the next calendar day.

Estimated McIntosh King fruit diameter dates:

10mm - June 6, Mon. 15mm - June 14, Tue. 20mm - June 20, Mon.
25mm deadline to hand thin for return bloom - June 20, Mon.

Date after which fruit have exposure to 2 days of daily high temperature of at least 75 F: Monday, May 30

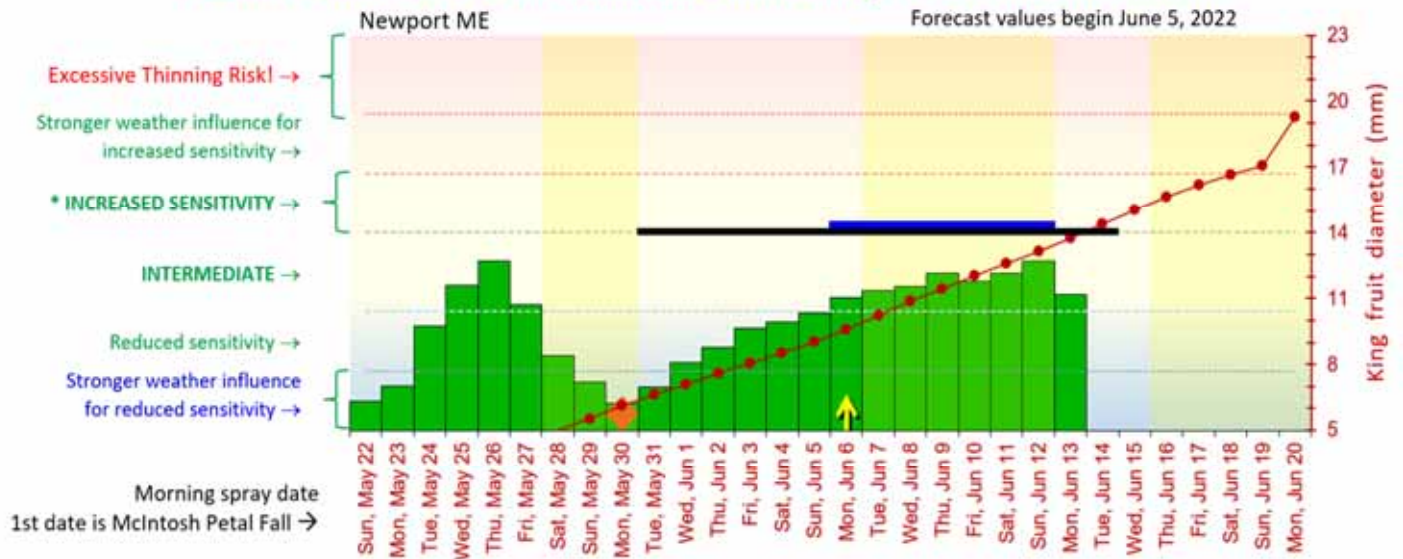
Very warm night temperatures (average > 69F = 19 heat units in table) can lead to "EXCESSIVE THINNING RISK", especially if combined with cloudy weather, or if combined with use of NAA.

Warm nights + Cloudy days ----> **Increased** sensitivity, maximum thinning.
 Warm nights + Sunny days ----> **Intermediate** sensitivity, moderate thinning.
 Cool nights + Cloudy days ----> **Reduced** sensitivity
 Cool nights + Sunny days ----> **Reduced** sensitivity, minimum thinning.

THINNER APPLICATION DATE Estimates assume morning application. For afternoon application use rating for next day.	Average % CLOUD SHADING on application day and the next three days. < 20% = "sunny blue sky" > 40% = "cloudy" Cloudy weather on four days after application increases thinning.	Average NIGHT HEAT UNITS = degrees above 50 F for 7pm-7am during four nights after application. Example: If average night time temperature is 55F, then value = 5. Values above 10 during four nights after application increases sensitivity to thinning.	SUMMARY Influence of weather on sensitivity of fruit to thinning agents for 4 days following a morning application Ratings assume that fruit are within diameter range of susceptibility for thinning.	1st and 2nd Measuring Dates to Track Thinning Response. Fruit >6mm smaller than the largest fruit on tree will likely drop.	Estimated Fruit Diameter (mm)
McIntosh 95% Petal Fall Sun, May 22	42%	6	Stronger influence for reduced sensitivity	May 27, Fri. & June 1, Wed.	Gold. Del.: pre-PF Honeycrisp: pre-PF McIntosh: pre-PF Zestar: 5.1
McIntosh 100% Petal Fall, Mon, May 23	sunny 2%	1	Stronger influence for reduced sensitivity	May 27, Fri. & June 1, Wed.	Gold. Del.: pre-PF Honeycrisp: pre-PF McIntosh: pre-PF Zestar: 5.6
Tue, May 24	sunny 2%	2	Reduced sensitivity	May 28, Sat. & June 2, Thu.	Gold. Del.: pre-PF Honeycrisp: pre-PF McIntosh: 3.5 Zestar: 6.0
Wed, May 25	sunny 0%	2	Intermediate	May 29, Sun. & June 3, Fri.	Gold. Del.: pre-PF Honeycrisp: pre-PF McIntosh: 3.8 Zestar: 6.4
Thu, May 26	50%	8	Intermediate	May 29, Sun. & June 4, Sat.	Gold. Del.: pre-PF Honeycrisp: pre-PF McIntosh: 4.1 Zestar: 6.8
Late cultivar Petal fall, Fri, May 27	27%	10	Intermediate	May 31, Tue. & June 6, Mon.	Gold. Del.: pre-PF Honeycrisp: 3.6 McIntosh: 4.5 Zestar: 7.4
McIntosh Fruit Set, Sat, May 28	51%	4	Reduced sensitivity	June 1, Wed. & June 6, Mon.	Gold. Del.: pre-PF Honeycrisp: 4.0 McIntosh: 5.0 Zestar: 8.1
Sun, May 29	sunny 13%	5	Stronger influence for reduced sensitivity	June 3, Fri. & June 7, Tue.	Gold. Del.: pre-PF Honeycrisp: 4.5 McIntosh: 5.5 Zestar: 8.7
Mon, May 30	sunny 13%	4	Stronger influence for reduced sensitivity	June 4, Sat. & June 9, Thu.	Gold. Del.: pre-PF Honeycrisp: 5.0 McIntosh: 6.1 Zestar: 9.4

Tue, May 31	sunny 8%	2	Stronger influence for reduced sensitivity-- sensitivity may be less because of fruit exposure to 2+ days with high temps. >75F	June 5, Sun. & June 9, Thu.	Gold. Del.: 3.5 Honeycrisp: 5.5 McIntosh: 6.6 Zestar: 10.0
Wed, June 1	sunny 4%	4	Reduced sensitivity-- sensitivity may be less because of fruit exposure to 2+ days with high temps. >75F	June 6, Mon. & June 10, Fri.	Gold. Del.: 3.8 Honeycrisp: 5.9 McIntosh: 7.1 Zestar: 10.5
Thu, June 2	sunny 2%	2	Reduced sensitivity-- sensitivity may be less because of fruit exposure to 2+ days with high temps. >75F	June 7, Tue. & June 11, Sat.	Gold. Del.: 4.1 Honeycrisp: 6.3 McIntosh: 7.6 Zestar: 11.0
Fri, June 3	70%	3	Reduced sensitivity-- sensitivity may be less because of fruit exposure to 2+ days with high temps. >75F	June 7, Tue. & June 12, Sun.	Gold. Del.: 4.4 Honeycrisp: 6.8 McIntosh: 8.1 Zestar: 11.6
Sat, June 4	44%	2	Reduced sensitivity-- sensitivity may be less because of fruit exposure to 2+ days with high temps. >75F	June 8, Wed. & June 13, Mon.	Gold. Del.: 4.7 Honeycrisp: 7.2 McIntosh: 8.5 Zestar: 12.0
Sun, June 5	28%	4	Reduced sensitivity-- sensitivity may be less because of fruit exposure to 2+ days with high temps. >75F	June 9, Thu. & June 13, Mon.	Gold. Del.: 5.1 Honeycrisp: 7.7 McIntosh: 9.0 Zestar: 12.5
Mon, June 6	sunny 1%	5	Intermediate-- sensitivity may be less because of fruit exposure to 2+ days with high temps. >75F	June 10, Fri. & June 14, Tue.	Gold. Del.: 5.6 Honeycrisp: 8.2 McIntosh: 9.6 Zestar: 13.0
Tue, June 7	sunny 3%	9	Intermediate-- sensitivity may be less because of fruit exposure to 2+ days with high temps. >75F	June 11, Sat. & June 15, Wed.	Gold. Del.: 6.1 Honeycrisp: 8.8 McIntosh: 10.2 Zestar: 13.6
Wed, June 8	66%	3	Intermediate-- sensitivity may be less because of fruit exposure to 2+ days with high temps. >75F	June 12, Sun. & June 16, Thu.	Gold. Del.: 6.7 Honeycrisp: 9.5 McIntosh: 10.9 Zestar: 14.2
Thu, June 9	72%	4	Intermediate-- sensitivity may be less because of fruit exposure to 2+ days with high temps. >75F	June 13, Mon. & June 17, Fri.	Gold. Del.: 7.2 Honeycrisp: 10.1 McIntosh: 11.4 Zestar: 14.7
Fri, June 10	31%	4	Intermediate-- sensitivity may be less because of fruit exposure to 2+ days with high temps. >75F	June 14, Tue. & June 17, Fri.	Gold. Del.: 7.7 Honeycrisp: 10.7 McIntosh: 12.0 Zestar: 15.2
Sat, June 11	75%	4	Intermediate-- sensitivity may be less because of fruit exposure to 2+ days with high temps. >75F	June 14, Tue. & June 18, Sat.	Gold. Del.: 8.3 Honeycrisp: 11.3 McIntosh: 12.6 Zestar: 15.6
Sun, June 12	55%	5	Intermediate-- sensitivity may be less because of fruit exposure to 2+ days with high temps. >75F	June 15, Wed. & June 19, Sun.	Gold. Del.: 8.9 Honeycrisp: 11.8 McIntosh: 13.1 Zestar: 16.0
Mon, June 13	28%	6	Intermediate-- sensitivity may be less because of fruit exposure to 2+ days with high temps. >75F	June 16, Thu. & June 20, Mon.	Gold. Del.: 9.5 Honeycrisp: 12.4 McIntosh: 13.7 Zestar: 16.4

Weather Influence on McIntosh Sensitivity to Chemical Thinners



Left axis: Green columns show thinning sensitivity rating for apples on unstressed trees. Rating accounts for temperature and cloud cover for the 4 day window after a morning thinner application. For evening application, use rating for the following day. Horizontal dashed lines mark transitions between sensitivity categories.

***Optimum thinning sensitivity is expected from applications on day with rating in the "Increased Sensitivity" range.**

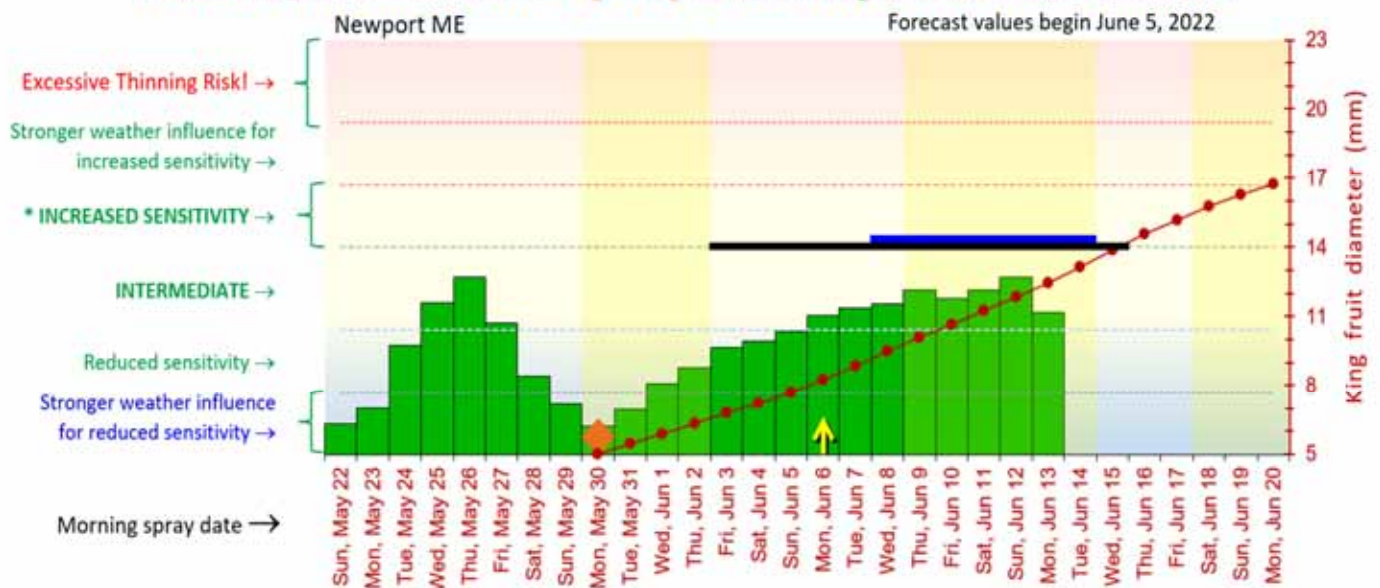
Right axis: Rising red line with circles shows estimated King Fruit (KF) diameter for an early sizing cultivar on each day.

Yellow columns mark the **EARLY** (5-6mm), **MID** (12-14mm), and **LATE** (17-20mm) postbloom thinning windows. Sensitivity peaks at 10-13 mm. Beyond 16mm fruit lose sensitivity to NAA. Beyond 17mm, carbaryl and Maxcel have declining effect. Weather to create carbohydrate stress is required for effective chemical thinning regardless of fruit diameter. Sensitivity to chemical thinners ends around 20mm (vertical gray line).

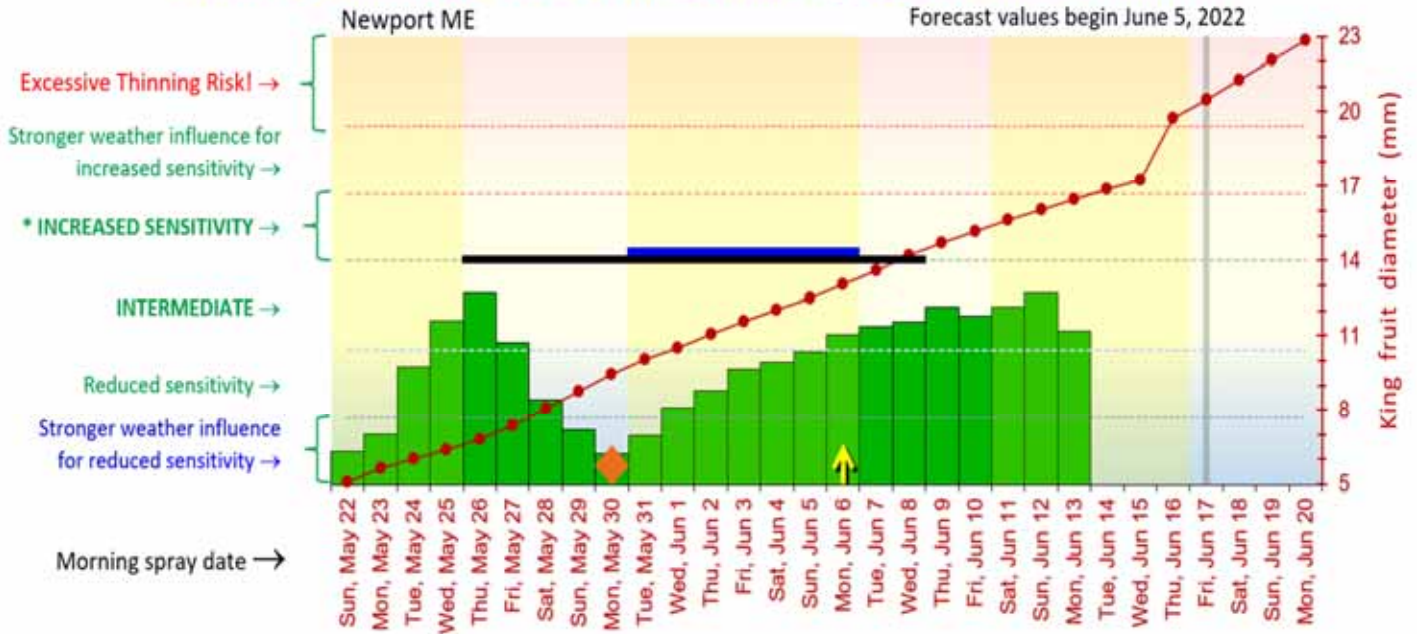
The horizontal black — & blue — lines mark dates with KF diameter at 7–14 & 10–13mm. Peak thinning occurs at 7–14mm fruit diameter (esp. 10–13mm) with INTERMEDIATE to INCREASED SENSITIVITY weather conditions.

◆ marks date when fruit have reduced sensitivity after two or more days of temperatures >75F. ↑ marks today's date.

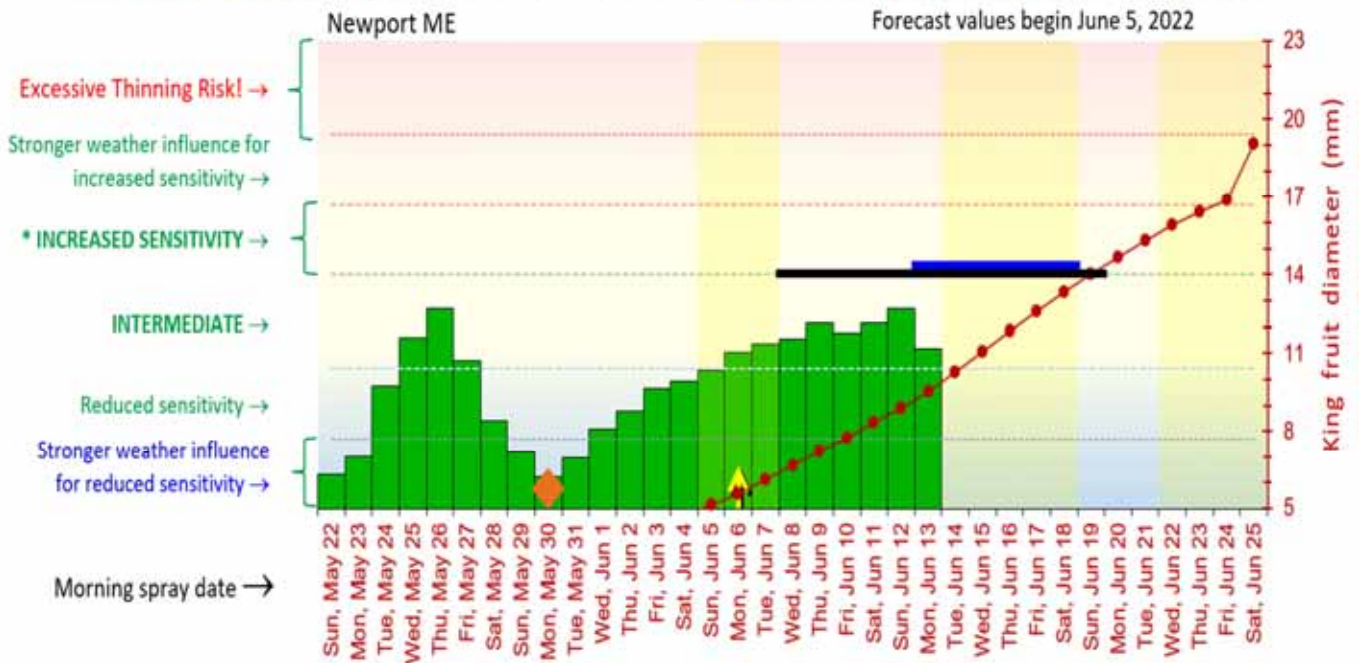
Weather Influence on Honeycrisp Sensitivity to Chemical Thinners



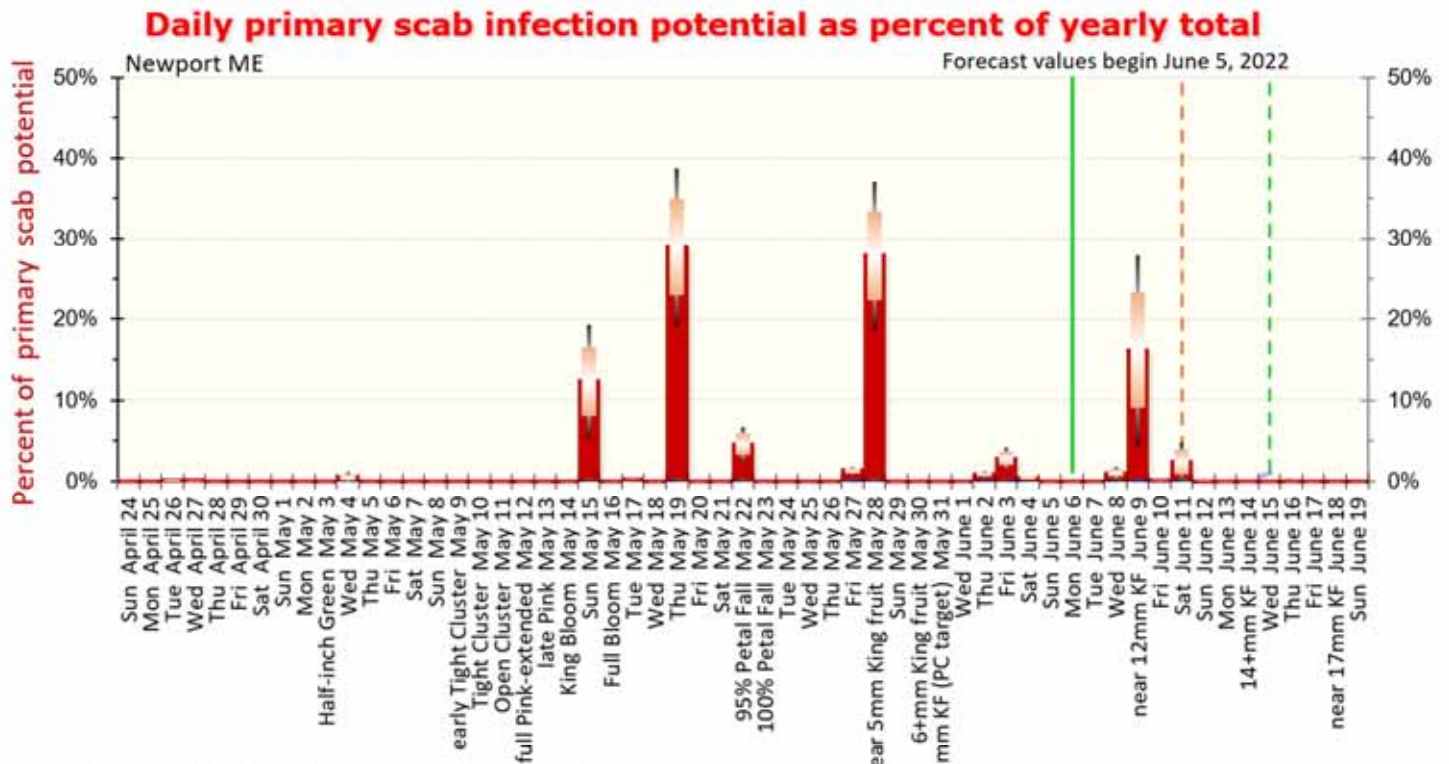
Weather Influence on Zestar Sensitivity to Chemical Thinners



Weather Influence on Golden Delicious Sensitivity to Chemical Thinners



Apple Scab



Top of wide red bar shows best estimate of primary scab ascospore infection potential.

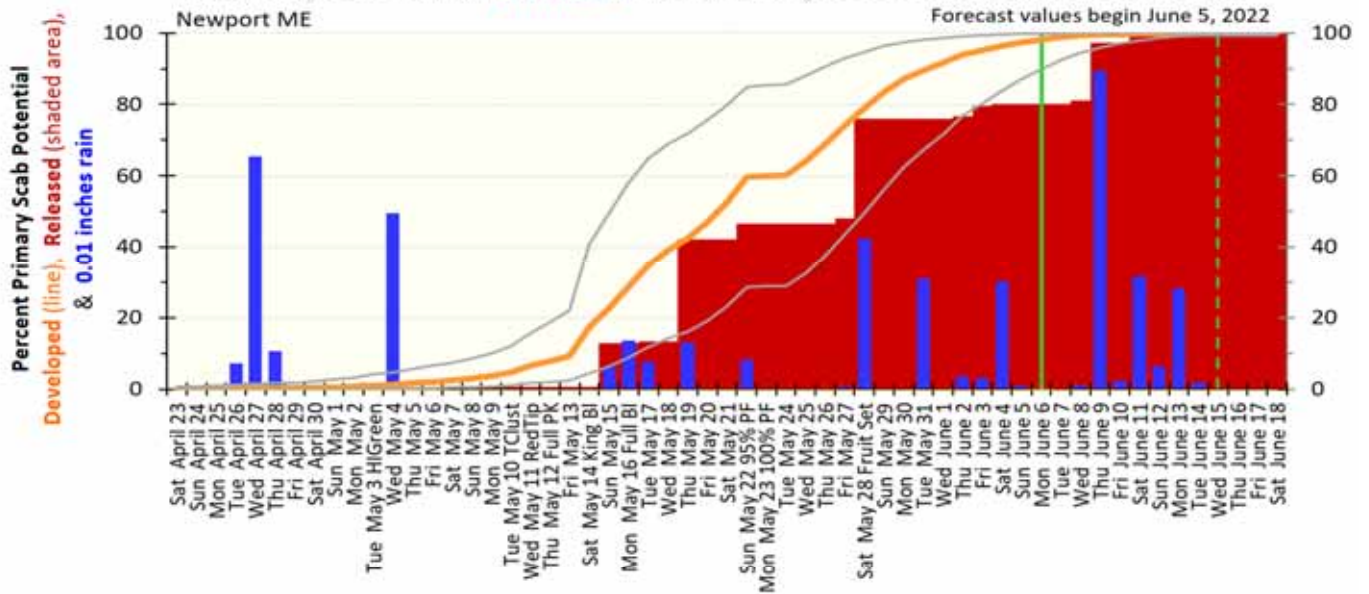
White-to-light red shaded narrow boxes overlaid on red bars show range expected to contain the true value most of the time (68% confidence interval). Thin vertical black bars show 90% confidence interval.

Vertical green line = today's date. Vertical dotted green line = end of forecast range.

Vertical orange dotted line = date of final significant primary scab infection period (estimated 99+% cumulative spore release, and 95% chance of at least 95% cumulative spore release).

Infection potential rating is for scab ascospores (i.e. primary scab) only. Uncontrolled infections can produce secondary scab spores that magnify infection risk beyond what is indicated by this chart, starting 9-17 days after the infection period.

Development and Release of Primary Scab Infection Potential



Blue columns show 100ths of inch rain for each date.

Rising thick orange line = cumulative primary scab infection potential developed by that date.

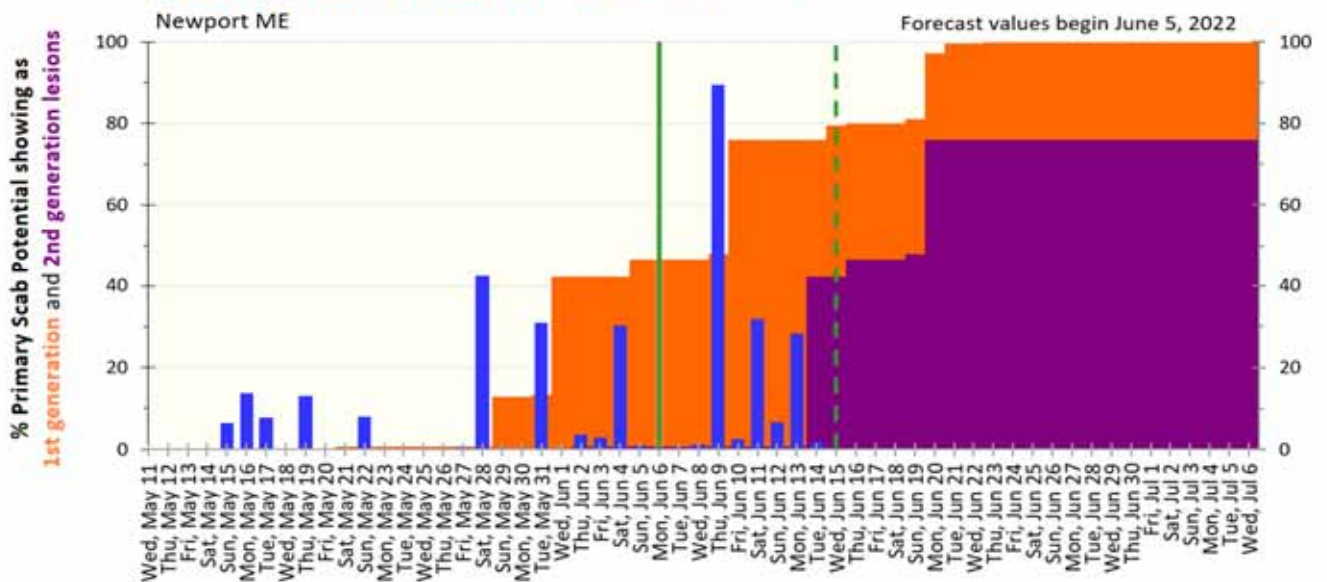
Rising thin gray lines = 90% confidence interval for estimate of cumulative infection potential developed, but not necessarily released, by each date.

Solid red area under orange line shows estimated cumulative percent primary scab infection potential released by end of that date. The red area is below the orange line unless a warm soaking daytime rain allows full expression of infection potential.

Vertical line = today's date and beginning of forecast values. Vertical dashed green line = end of forecast range.

Note: This is a relative, not absolute, measure of scab infection severity. In high scab blocks even a small portion of the year's scab potential can cause significant infection! This chart represents risk from primary spore releases only. If primary scab is not controlled, secondary spores can greatly magnify infection potential for later infection periods.

1st generation (primary) & 2nd Generation Scab Lesion Appearance Dates



Orange area shows the percent of potential 1st generation apple scab infections that have had time to become visible. Absence of visible scab infections after 100% of primary scab potential has had time to appear as 1st generation lesions is good news, but it is not conclusive verification of successful scab control. Light infestation of 1st generation lesions can be difficult to detect. Infections delayed but not killed by fungicide application, or by partial resistance of older leaves, may appear later.

Purple area shows the percent of 2nd generation apple scab lesions that have had time to become visible. Absence of visible scab after 90-100% of primary scab infection potential has had time to appear as 2nd generation lesions indicates that primary scab control was successful. However, scab scouting should continue to detect later emerging lesions.

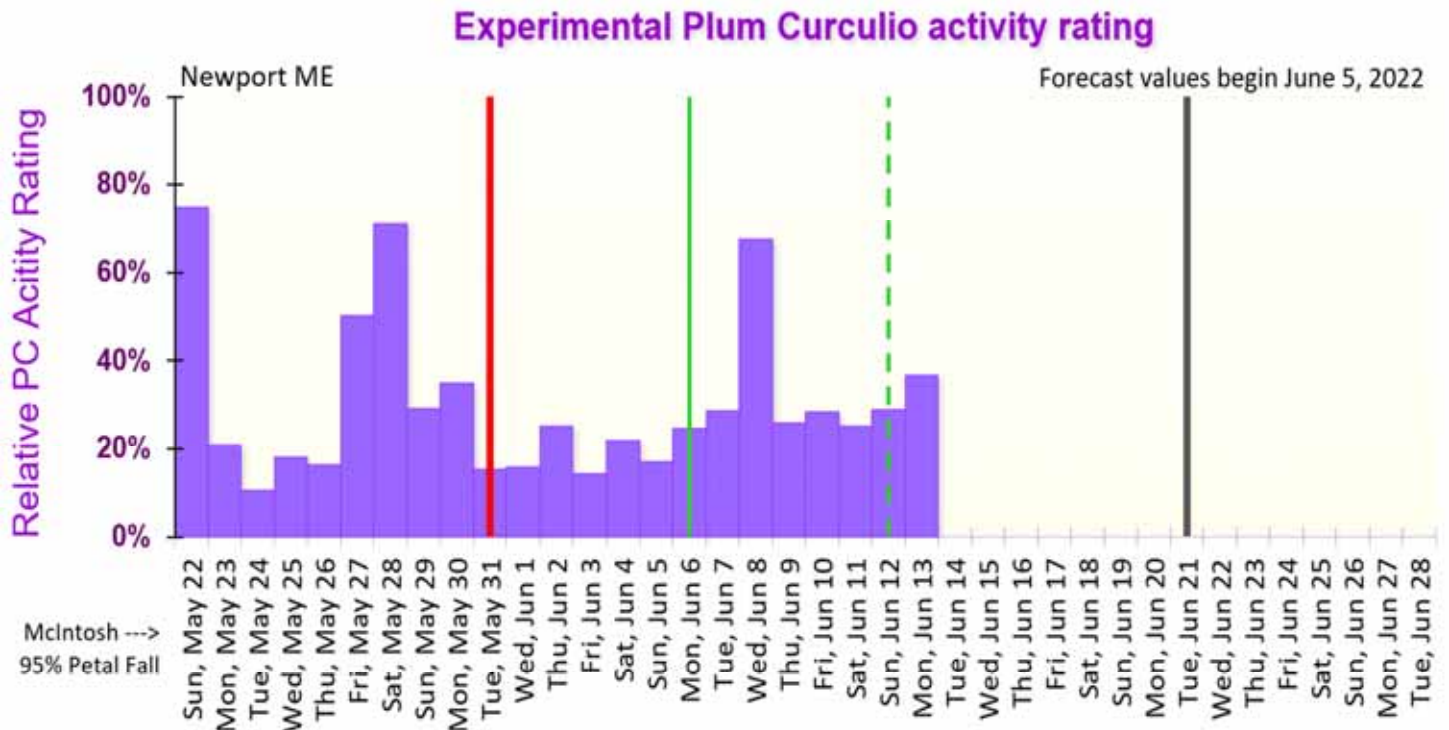
Blue columns show 100ths of inch rain for each date.

Vertical green line = today's date and beginning of forecast values.

Vertical dotted green line = end of forecast range. Date lines may be beyond range of chart.

Plum curculio

Warm nights and rainy weather will provide any surviving plum curculio with ideal conditions for cutting fruit to lay eggs this week. The heavy rain forecast for Thursday June 9 will deplete previously applied insecticide coverage. In Newport, insecticide application on or after June 10 will be required for residual protection to last through the end of PC immigration from outside the orchard which is forecast to last until June 21.



Purple columns show Temperature x Air moisture (vapor pressure deficit) as a possible indicator of the relative level of plum curculio (PC) activity on each day compared to other days at the same location.

Vertical red line = McIntosh, Cortland etc. King Fruit at 7mm diameter when PC egg laying begins.

Vertical green line = today's date. Vertical green dashed line = end of forecast range.

Need for protection against plum curculio egg laying begins around 7mm fruit diameter on Tue., May 31.
 A final plum curculio insecticide application on Friday, June 10 is expected to give adequate protection until the end of the immigration period on Tuesday, June 21 (indicated by yellow highlight).
 If using Surround deterrent, rough estimate for decline in plum curculio egg laying is Sunday, July 3.

Weather data for Newport ME. Forecast values begin June 5, 2022

95% McIntosh Petal Fall estimated or reported as: May 22, Sunday

Full-dose Plum Curculio insecticide application date	Cumulative Plum curculio degree days	Inches Rain	Estimated end of protection	Percent of PC control period (& PC degree days) completed by end of protection
	95% McIntosh Petal Fall			
Sun, May 22	7	0.08	June 3, Fri	36% (112)
Mon, May 23	11	0	June 4, Sat	38% (118)
Tue, May 24	19	0	June 5, Sun	40% (124)
Wed, May 25	25	0	June 6, Mon	43% (134)
Thu, May 26	38	0	June 7, Tue	47% (145)
Fri, May 27	51	0	June 8, Wed	51% (156)
Sat, May 28	63	0.42	June 9, Thu	52% (162)
Sun, May 29	76	0	June 9, Thu	52% (162)
Mon, May 30	81	0.31	June 9, Thu	52% (162)
Tue, May 31	88	0	June 10, Fri	56% (172)
Wed, June 1	97	0	June 11, Sat	59% (180)
Thu, June 2	101	0.04	June 12, Sun	61% (189)
Fri, June 3	107	0.03	June 13, Mon	65% (200)
Sat, June 4	114	0.30	June 14, Tue	70% (215)
Sun, June 5	123	0	June 15, Wed	75% (231)
Mon, June 6	134	0	June 16, Thu	79% (244)
Tue, June 7	145	0	June 17, Fri	84% (258)
Wed, June 8	151	0.01	June 18, Sat	89% (273)
Thu, June 9	151	0.89	June 18, Sat	89% (273)
Fri, June 10	161	0.02	June 19, Sun	93% (287)
Sat, June 11	170	0.32	June 22, Wed	100% (332)
Sun, June 12	179	0.07	June 22, Wed	100% (332)
Mon, June 13	189		June 25, Sat	100% (379)
Tue, June 14	204		June 25, Sat	100% (379)
Wed, June 15	220		June 28, Tue	100% (429)
Thu, June 16	234		June 28, Tue	100% (429)
Fri, June 17	248		June 28, Tue	100% (429)
Sat, June 18	248		June 29, Wed	100% (445)
Sun, June 19	262		June 29, Wed	100% (445)
Mon, June 20	277		June 30, Thu	100% (463)
Tue, June 21	291		July 1, Fri	100% (480)
	306		July 2, Sat	100% (498)
			July 3, Sun	100% (516)

Newsletter shortened for web posting.