Vermont Apple IPM News

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Stage of Development:

2006 Reports of Apple Bud Stage (McIntosh) for Selected Sites

Date	UVM HRC South Burlington Chittenden Co. Elev. 71 M	Shoreham Addison Co. Elev. 107 M	South Hero Grand Isle Co. Elev. 54M	Dummerston Windham Co. Elev. 171 M
4/01	Dormant / Slight Swelling	Dormant Silver Tip (4/05)	Dormant	Early Silver Tip
4/10	Silver Tip		Silver Tip	Green Tip (4/13)
4/17	Green Tip (GT) 4/13 Half-Inch Green (HIG) 4/19	GT 4/13 HIG 4/19	GT 4/14	GT 4/13 1/4" GT 4/17
4/24	Early Tight Cluster (TC)	TC 4/27	HIG 4/19	Early Tight Cluster (TC)
5/1	TC 4/27		TC	Pink 4/29

Disease Management Update

Apple Scab - - As you can see from the ascospore maturity degree day (DD) accumulation in the following table, we have reached the "accelerated phase" of ascospore maturity. It is a time of high scab risk. A high percentage of the season's ascospores accumulate rapidly during dry weather. The accelerated phase extends from approximately 300 DD to 700 DD. To date, at the UVM Horticulture Research Center (HRC) we have had 3 infection period since green tip: April 15, April 22-23, April 24-25. In determining an infection period, I recommend that you start counting the hours of leaf wetness from the first hour of rain regardless if the rain started in the day or night. As you may know, only a small percentage of the potential ascospore dose of an orchard will be released at night and in low inoculum orchards, if the rain began between 7:00 pm and 8:00 am (DST) the past New England Apple Pest Management Guide (NEAPMG) stated that counting of leaf wetness hours could begin at 8:00 am in the morning. However, in high inoculum orchards and even in low inoculum orchards during the peak period of ascospore release, night-time release of ascospores can be significant. Thus, start counting hours when

2006 Degree Day Accumulation for Apple Scab Ascospore Maturity

2006 Estimated Degree-Day Accumulation (Base 32F, from McIntosh Green Tip) for Selected Sites				
	UVM HRC South Burlington Chittenden Co. Elev. 71 M	Shoreham Addison Co. Elev. 107 M	South Hero Grand Isle Co. Elev. 54M	Dummerston Windham Co. Elev. 171 M
Date	04/13 (GT)	04/13 (GT)	04/13 (GT)	04/14(GT)
4/15	60	65	40	74
4/22	192	201	175	218
4/29	269	281	252	310
4/30	287	298	270	327

the first rain is recorded. The following are the hours of leaf wetness required at different temperatures for infection. Note that scab lesions should be appearing if your orchard was not protected for the early mid-April infection period.

Average Temp (°F)	Relative infection level[2] Low	Moderate	High	Days until first lesions[3]
78	10	14	23	
77	8	11	18	
76	6.5	9	16	
61–75	6	9	16	9–10
60	6.5	10	17	11
57–59	7	11	19	12–13
55–56	8	12	20	13–14
54	8.5	13	21	14
52–53	9	14	22	15
51	10	15	24	16
50	11	16	26	16
49	11.5	17	27	17
48	12	17	27	17
47	14	20	32	17
46	16 (13)	21	34	17
45	17 (15)	23	37	17
44	19	25	40	17
43	21 (18)	27	44	17
42	23	30	47	17
41	21	34	50	?
40	29	38	53	?
39	33 (28)	42	57	?
38	37	47	61	?
37	41 (30)	52	65	?
36	48 (35)	69	93	?
34	48 (41)	69	93	?

Often there are questions about how to determine an infection period if wetting periods are separated by a short dry period. The following are the guidelines from the NEAPMG:

Determining an infection period when two rain events are separated by a short dry period:

- Two successive wet periods, the first started by rain and the second started by rain or dew, should be considered a single, uninterrupted wet period if the intervening dry period is 24 hours or less, regardless of weather conditions (sunshine, temperature, and relative humidity) during the intervening dry period. Dew at night is common in early spring, but only one dew period should be considered as the second wetting period.
- Note: Combine only the hours the leaves were wet during the two wet periods; *do not include the hours the leaves were dry.*

How should the above be interpreted? - - The above guideline implies that a high enough percentage of the ascospores survive up to 24 hours of drying on the leaves and fruits to consider the infection process to be uninterrupted when the surfaces become wet again. The hours the surfaces are dry are *not* included in calculating the infection period because the infection process stops during the dry period.

Arthropod Update

2006 Estimated Degree-Day Accumulation (Base 50F, from Jan. 1) for Selected Sites

Date	UVM HRC South Burlington Chittenden Co. Elev. 71 M	Shoreham Addison Co. Elev. 107 M	South Hero Grand Isle Co. Elev. 54M	Dummerston Windham Co. Elev. 171 M
4/01	19	19	17	32
4/08	22	22	20	40
4/15	49	52	46	77
4/22	81	83	77	114
4/29	87	91	82	128
4/30	92	96	87	133

Degree Day and other weather information received from Skybit E-Weather Service: http://www.skybit.com/

Insect activity increased this past week with the warmer temperatures. At the UVM HRC, we are above the tight cluster threshold for **Tarnished Plant Bug** captures on white sticky traps. We saw an increase in trap captures for **Leafminer** adult moths on red sticky trunk traps this past week, with one trap catching 107 moths ! We also started to capture **European Apple Sawflies** on white sticky traps. The following are some expected arthropod "events" as DD increase:

Arthropod 'Events' Based on Degree-Day Accumulation[1]	
Pest Event	**Estimated DD Base 50 F for Event (from Jan 1)**
European Red Mite (ERM) - egg hatch observed	100-168
STLM - 1st generation adult peak flight	113-209
San Jose Scale (SJS) - 1st adult catch	186-324
CM - 1st adult catch	190-330
STLM -1st sap-feeding mines observed	165-317

[1] Source of Estimated DD (Base 50F) for arthropod pest events: 2006 Pest Management Guidelines for Commercial Tree-Fruit Production. A Cornell Cooperative Extension Publication, Table 14: "Degree-day accumulations (from January 1) corresponding to selected fruit phenology and arthropod pest events." http://www.nysaes.cornell.edu/ent/treefruit/

***Contact Information*:** If you have any questions, please call or write:

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