

NEWA

The Network for Environment and Weather Applications

2018 Empire State Growers Expo, OCCC

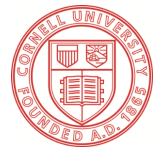
Dan Olmstead, NEWA Coordinator dlo6@cornell.edu

New York State IPM Program

Cornell AgriTech @ NYSAES

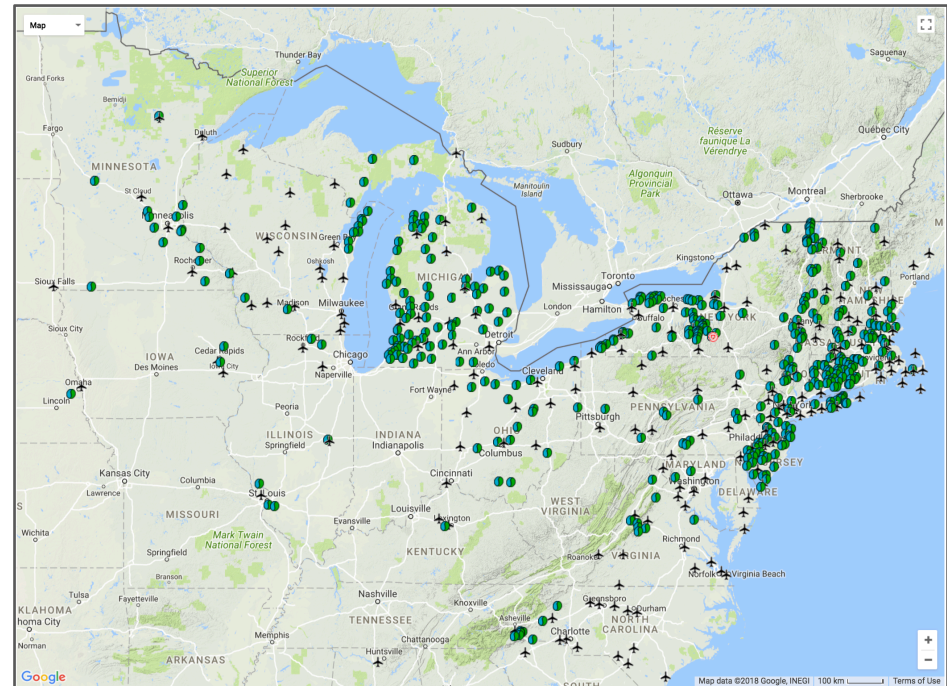
Geneva, NY

NEWA | newa.cornell.edu
New York State IPM Program

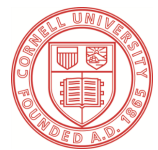


About NEWA

- A decision aide system (DAS) for agriculture.
- A collection of 40+ online models, tools and resources.
- 605 physical weather stations across the United States.



605 NEWA weather stations are located across the Northeast, Midwest, and Mid-Atlantic United States.



Weather station specifications

Rainwise AgroMET MKIII SP1-LR

2018 cost:

\$1890

Sensors:

- Temperature
- Dew point
- Relative humidity
- Rainfall
- Wind speed
- Wind direction
- Barometric pressure
- Solar radiation
- Leaf wetness
- Soil temperature (extra cost)
- Soil moisture (extra cost)

Data transmission:

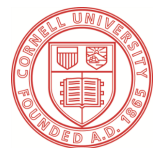
- Wi-Fi to IP100 (high speed internet required)
- Cellular (additional cost)

Service and support:

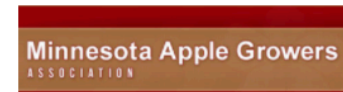
- 2-year warranty
- 6-year expected lifespan
- 2-year calibration cycle
- Rainwise.net access

Sales contact:

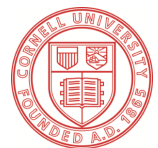
- Lonnie White
- 800-762-5723 (preferred)
- lonnie.white@rainwise.com



Partners and collaboration



NEWA | newa.cornell.edu
New York State IPM Program



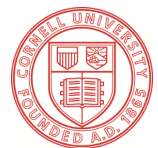
Short-term production risk

- NEWA provides:
 - Short-term risk assessment.
 - Present conditions.
 - Historical analysis.
 - Biological interpretation of short-term weather data for growers.
- NEWA does not provide:
 - Long-term forecasts of insect or plant disease pressure.
 - Climatic perspectives.

W. Wilcox, Cornell University

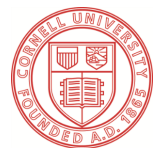


J. Ogradnick, Cornell University



NEWA IPM expertise

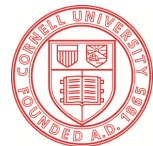
- Commodities
 - **Apples**
 - Dr. Juliet Carroll, Fruit IPM Coordinator, jec3@cornell.edu
 - **Grapes**
 - Tim Weigle, Grape IPM Specialist, thw4@cornell.edu
 - **Vegetables**
 - Abby Seaman, Vegetable IPM Coordinator, ajs32@cornell.edu
- Technology and development
 - Dan Olmstead, NEWA Coordinator, dlo6@cornell.edu



Models, tools, and resources

- Basic weather resources
 - Summaries.
 - Temp, precip, RH, etc.
 - Derived data.
 - Degree day calculators.
- Commodity-based management tools
 - Insect pests.
 - Plant diseases.
 - Crop load.
 - Irrigation.

The screenshot shows the NEWA website interface. At the top, there is a search bar and navigation tabs. The main content area includes a map of the Northeastern United States with many green location markers. Below the map, there are several sections with links to various tools and resources, such as 'National Weather Service Forecast', 'About NEWA', 'Other Weather Data Sources', 'Other Pest Forecast Tools', and 'Other Crop Management Tools'.



Navigation

Navigation Menu: Weather Data, Pest Forecasts, Station Pages, Crop Management, Crop Pages

Search: Search NEWA website, Enter Search..., Search

Left Sidebar: National Weather Service Forecast, Enter "City, ST" or "zip code", About NEWA, Take the NEWA Survey, Other Weather Data Sources, Other Pest Forecast Tools, Other Crop Management Tools

Main Content: Welcome to the NEWA Home Page, Click on a map marker to go to the weather station's home page.



Navigation Menu: Weather Data, Pest Forecasts, Station Pages, Crop Management, Crop Pages, About Weather Station

Search: Enter Search..., Search

Map: faunique La Verendrye, Algonquin Provincial Park, Ottawa, Montreal, Sherbrooke



Weather Data Quick Links: Past 12 months shown, Current month highlighted, Daily Summary, Hourly Data, Growing Degree Days (Base 50F), Growing Degree Days (Base 50F BE), Growing Degree Days (Base 86/50F)

Ithaca Cornell Orchards, NY Weather Station Page: Station Page forecasts use default biofix dates and provide results for the current download date. For prior years, other biofix dates, locations and models, choose from Pest Forecasts or Crop Management on the main menu.

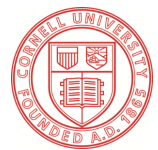
Ithaca Cornell Orchards Pest Forecasts: Apple Scab, Codling Moth, Grape Berry Moth, Fire Blight, Plum Curculio, Cabbage Maggot, Sooty Blotch/Flyspeck, Obliquebanded Leafroller, Onion Maggot, Leaf Wetness Events, Apple Maggot, Onion Diseases, Spotted Tentiform Leafminer, Grape Diseases, Potato Diseases, Oriental Fruit Moth, Grapevine Downy Mildew, Tomato Diseases

Station Location: Lat/Lon: 42.44/-76.46, Elevation: 902 ft.

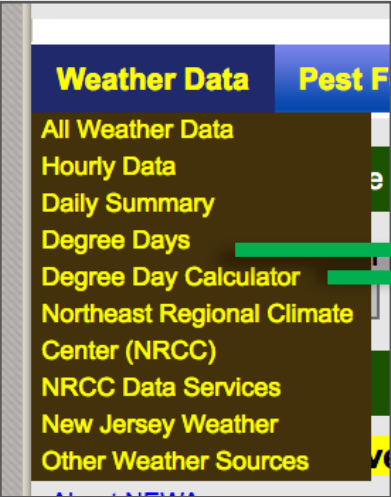
Last Download: 11/8/2017 2 PM

Station Sensors: Temperature, Leaf Wetness, Precipitation, Relative Humidity, Wind Speed, Wind Direction, Solar Radiation

Statewide and Regional Pest Forecasts: Sweet Corn Stewart's Wilt Forecast, Potato/Tomato Late Blight DSS, Sweet Corn Stewart's Wilt Map, Cucurbit Downy Mildew, Soybean Rust, Turfgrass Diseases



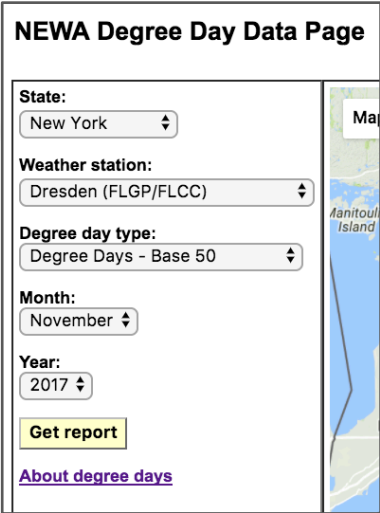
Degree day tools



Weather Data **Pest F**

- All Weather Data
- Hourly Data
- Daily Summary
- Degree Days
- Degree Day Calculator
- Northeast Regional Climate Center (NRCC)
- NRCC Data Services
- New Jersey Weather
- Other Weather Sources

Monthly reports



NEWA Degree Day Data Page

State: New York

Weather station: Dresden (FLGP/FLCC)

Degree day type: Degree Days - Base 50

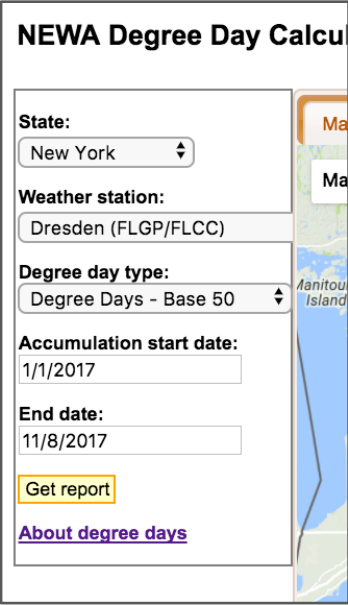
Month: November

Year: 2017

[Get report](#)

[About degree days](#)

Custom reports



NEWA Degree Day Calcul

State: New York

Weather station: Dresden (FLGP/FLCC)

Degree day type: Degree Days - Base 50

Accumulation start date: 1/1/2017

End date: 11/8/2017

[Get report](#)

[About degree days](#)



Degree day calculator

Home > Weather data > Degree day calculator

NEWA Degree Day Calculator

State:

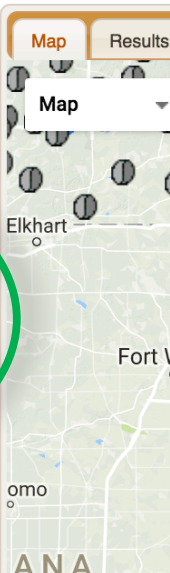
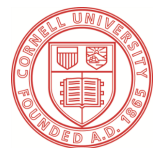
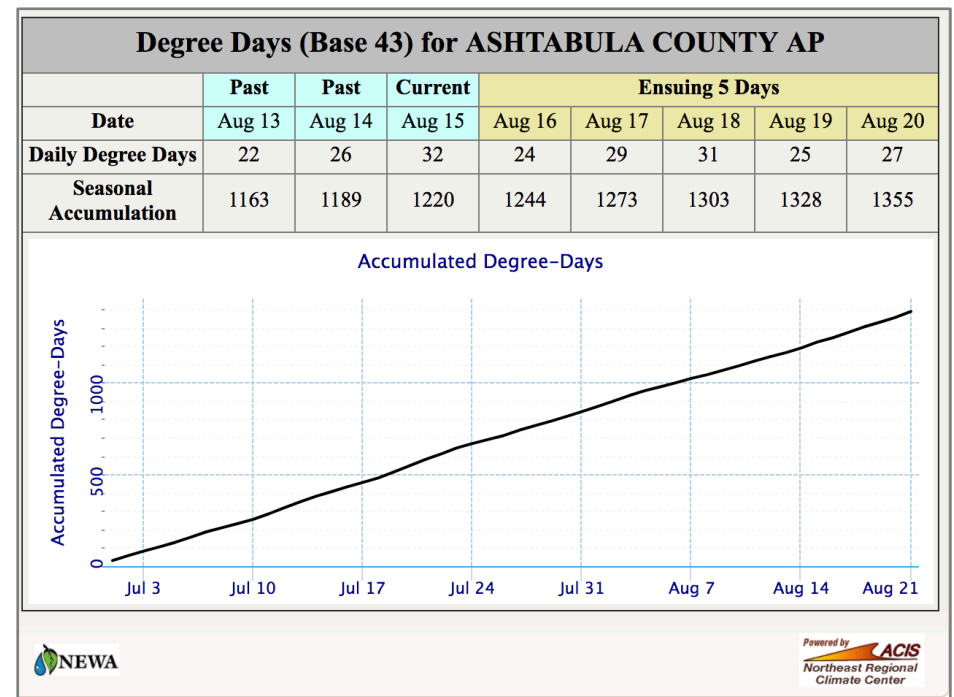
Weather station:

Degree day type:

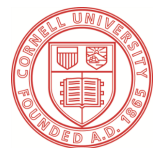
Accumulation start date:

End date:

[About degree days](#)

Accessing NEWA tools



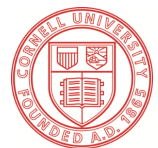
NEWA plant disease management

- Apples
 - Fire Blight.
 - Apple Scab.
 - Sooty Blotch/Flyspeck
- Grapes
 - Phomopsis
 - Powdery Mildew
 - Black Rot
 - Downy mildew
- Vegetables
 - Early blight (Potatoes).
 - Late blight (Tomatoes and Potatoes).

W. Wilcox, Cornell University



A. Dunn, NYSIPM



Apple Scab

Apple Scab Results for Ithaca

Primary scab season is over. Ascospores were essentially all released on May 1.
If you are unsure whether ascospores have been depleted in your orchard, enter your green tip date to recalculate ascospore maturity for your orchard.

Green Tip Date: 3/1/2017

[Ascospore Maturity Graphs](#)

Infection Events Summary

Date	Past		Current		Ensuing 5 Days			
	6/13	6/14	6/15	6/16	6/17	6/18	6/19	6/20
Infection Events	No	No	Combined	Yes	No	Combined	Combined	Yes
Days to Symptoms	-	-	-	9-10	-	-	-	9-10
Average Temp (F) for wet hours	67	76	62	63	-	71	68	61
Leaf Wetness (hours)	1	1	14	11	0	4	20	9
Hours ≥90% RH	2	9	6	11	9	10	19	8
Rain Amount	0.00	0.00	0.10	0.13	0.00	0.52	1.00	0.04

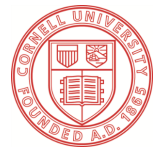
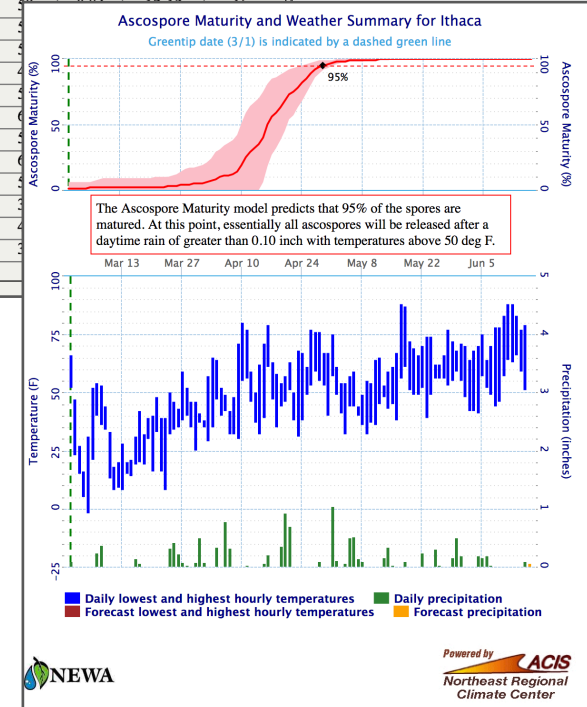
Download Time: 6/21/2017 23:00

Disease Cycle	Disease Management
<p>Secondary scab season. Keep in mind that inoculum doses are generally much lower for ascospores than for conidia, so the severity of infection can be greater if secondary inoculum is present, as compared with early in the season, when only ascospores are present.</p>	<p>Season-long control is difficult if primary infections develop, which produce secondary inoculum placing orchards at risk for secondary, conidial infections. After ascospores are depleted, continue to monitor scab infection events and maintain spray coverage accordingly for at least two more weeks, or until May 15. Scout orchards for primary scab infections after this time. Focus on protecting trees from secondary scab infections as needed, based on infection events. Both ascospores and conidia infect at similar rates when tested at equivalent temperatures and inoculum doses. Therefore, the infection events tabulated can be used for both primary and secondary infections. Apple scab fungicides control disease in different ways. Protectants must be applied before infection occurs. Those with post-infection activity must be applied within a narrow time after the beginning of an infection event. Some fungicides can suppress production of conidia from recent infections or established lesions, presymptom and postsymptom activity, respectively. Understanding these activities and knowing which fungicides exhibit them is important for maximizing the efficiency of a fungicide program.</p>

Apple Scab Infection Events (March 1 - June 21)

Start Date & Time	End Date & Time	Wet Hours	Temp Avg. (F)	Rain (in.)	Days to Symptoms	Combined Event
June 18 7:01 PM	June 20 8:00 AM	27	67	1.56	9-10	Yes
June 15 2:01 PM	June 16 10:00 AM	16	65	0.23	9-10	Yes
June 10 3:01 AM	June 10 9:00 AM	6	61	0.01	9-10	
June 4 9:01 AM	June 7 9:00 AM	39	55	0.58	14	Yes
May 29 3:01 AM	May 31 9:00 PM	34				
May 25 9:01 AM	May 27 11:00 AM	43				
May 12 8:01 PM	May 15 12:00 AM	29				
May 4 5:01 PM	May 8 8:00 AM	77				
May 1 6:01 PM	May 3 11:00 AM	13				
April 27 11:01 PM	April 28 5:00 AM	6				
April 19 12:01 PM	April 21 1:00 PM	44				
April 15 3:01 PM	April 16 7:00 PM	8				
April 3 11:01 PM	April 4 12:00 PM	13				
March 30 7:01 PM	April 2 9:00 AM	44				
March 28 11:01 AM	March 29 10:00 AM	23				
March 24 8:01 AM	March 27 9:00 AM	39				

Dry conditions last 39 hours at download



Fire Blight

Fire Blight Risk Predictions for Ithaca

Orchard Blight History: Fire blight occurred in your neighborhood last year.
Select the fire blight history in your orchard block of interest and the tool will calculate risk. Toggle orchard blight history to recalculate risk.

First blossom open date: 5/15/2017
The first blossom open date above is estimated based on degree-day accumulations. Enter the actual first blossom open date for your orchard block of interest and the tool will calculate the protection period during bloom more accurately.

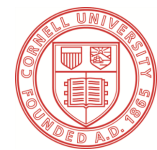
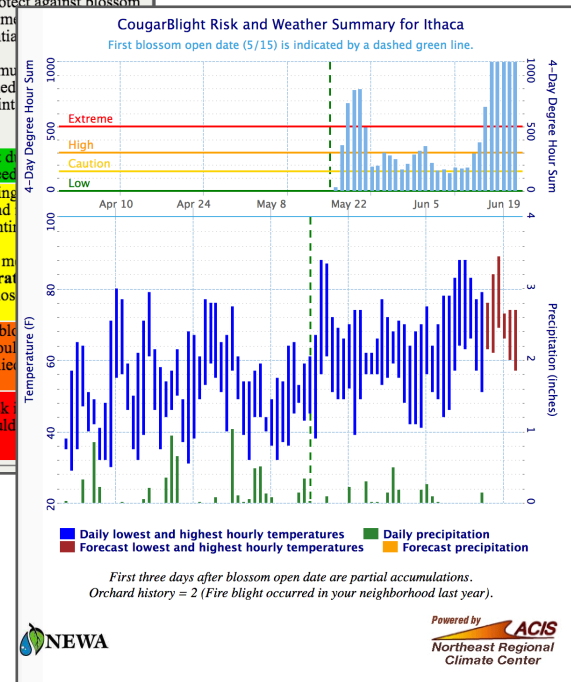
Accumulated degree days (base 43°F) through 6/15/2017: 1178 (0 days missing)

Date	Ensuing 5 Days							
	6/13	6/14	6/15	6/16	6/17	6/18	6/19	6/20
Cougarblight 4-Day DH	Extreme 1542	Extreme 1468	Extreme 1281	Extreme 1033	Extreme 1029	Extreme 1267	Extreme 1216	Extreme 1212
Infection Potential EIP value	Infection 397	Infection 311	Infection 233	Infection 159	Infection 219	Infection 299	Infection 304	Infection 235
Wetness Events								
Rain Amount	0.00	0.00	0.16	0.07	0.00	0.52	1.00	0.04
Dew ?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Leaf Wetness (hours)	1	1	14	11	0	4	20	9
Hours >90% RH	2	9	6	9	8	10	19	8
RH max/min	99/49	100/35	97/65	96/63	100/54	99/53	100/75	100/49
Temp avg F	74	66	64	67	74	76	69	66

NA - data not available [View Cougarblight Charts](#) Download Time: 6/21/2017 23:00

Streptomycin Spray Date:

Disease Cycle	Disease Management
Blossom blight.	<p>Blossom blight risk predictions begin at <u>first blossom open</u>, which usually occurs once 230 to 440 degree days (DD) base 43F have accumulated from January 1. If bloom in your orchard has not yet occurred, continue to check fire blight risk predictions and monitor bloom daily. Infection cannot occur without open blossoms.</p> <p>Most serious fire blight epidemics begin with infection during bloom. Certain antibiotics can effectively protect against blossom infections when applied shortly before or immediately after bloom. The Cougarblight and Infection Potential based on the principle that</p> <p>(a) a certain number of heat units must accumulate for a threshold level of inoculum to be reached (b) a wetting event is necessary after this point bacteria to their infection sites; and (c) the average temperature is above 60F.</p> <p>Low risk If none of these conditions is met during bloom, risk is 'Low' and bactericides are not needed. If only the heat units are met during bloom, risk is 'Caution' and watch the forecast closely for wet weather and rain.</p> <p>Caution or Moderate risk If only one of these conditions is met during bloom, risk is 'Moderate' and watch the forecast closely for warm weather and rain.</p> <p>High risk If two conditions are met during bloom and forecasted wetting events should be considered and a bactericide applied after a rain.</p> <p>Extreme or Infection risk If all three conditions are met, risk is 'Extreme' and an antibiotic should be applied before (or after) a rain.</p>



Sooty Blotch/Fly Speck

Sooty Blotch and Flyspeck Risk Summary - Northeastern US Model								
	Past	Past	Current	5-Day Forecast			Forecast Details	
Date	May 13	May 14	May 15	May 16	May 17	May 18	May 19	May 20
Days since petal fall	12	13	14	15	16	17	18	19
Accumulated Leaf Wetness Hours - ALWH	108	119	NA	NA	NA	NA	NA	NA
Risk Level	Low	Low	NA	NA	NA	NA	NA	NA
Rain Events and Fungicide Depletion Estimate								
Days since last fungicide application	-	-	-	1	2	3	4	5
Rain since last fungicide application	-	-	-	NA	NA	NA	NA	NA
Daily rain amount (inches)	0.16	0.35	NA	NA	NA	NA	NA	NA
Rain probability (%)			- -	- -	- -	- -	- -	- -
Night Day ?								

NA - data not available. Download Time: 5/15/2017 1:00

Sooty Blotch and Flyspeck Risk Predictions for Ithaca

Petal fall date for McIntosh:
Petal fall date above is estimated based on degree day accumulations or user input. Enter the actual date for blocks of interest and the model will calculate the accumulated leaf wetness hours since petal fall more accurately.

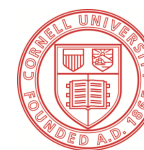
Most recent fungicide application date:
If petal fall has passed, enter the date of your most recent fungicide application. If no fungicide applications have been made, do not enter a date.

In the Risk Summary table, note the accumulated leaf wetness hours since petal fall (Leaf Wetness Hours) and the Risk Level. Leaf wetness hours, rain events, and the last fungicide application date are taken into consideration in assessing risk level. To estimate risk in the near future, look at the probability of rain.

Consult the Risk Level IPM Guidelines below the Risk Summary table.

Risk Level IPM Guidelines for Sooty Blotch and Flyspeck:

- NO RISK** - No action needed.
- LOW RISK** - If first cover application has not been made, make first cover fungicide application for apple scab. Otherwise, no action needed.
- MODERATE RISK** - Check the 5-day forecast; a cover application should be made if two or more days with precipitation are predicted. See Fungicides below.
- HIGH RISK** - A cover application for Sooty Blotch and Flyspeck should be made. See Fungicides below.



Grape Diseases

Grape Disease Infection Events for Ithaca									
	Past	Past	Current	Grape Disease 5-Day Forecast					Forecast Details
	May 13	May 14	May 15	May 16	May 17	May 18	May 19	May 20	
Phomopsis	Combined	Combined	Yes	-	-	-	-	-	
Powdery Mildew	Yes	Yes	No	-	-	-	-	-	
Black Rot	No	No	No; temp<50	-	-	-	-	-	

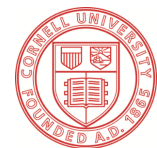
Phomopsis - calculates when weather conditions may allow spores to infect susceptible tissue.
Powdery Mildew - calculates primary infection when weather conditions may allow overwintered, primary spores (ascospores) to infect susceptible tissue; runs from bud break until pre-bloom. Once primary infections have occurred, secondary infections (disease spread) are possible every day. The threat is greatest when temperatures are between 65 to 90 degrees F and is particularly high when conditions are cloudy.
Black Rot - calculates when weather conditions may allow spores to infect susceptible tissue.

Phenological stage: 3-5 inch shoot

Choose the phenology stage for the grape variety of interest to display management messages. Concord grape phenology is estimated by the model from historical records for this variety.

Disease	Disease Management
Phomopsis	The early spray at around 3 inch shoot growth, when clusters first become visible, is most important for controlling rachis infections, shoot infections that serve as future sources of inoculum, and infections that move from berry stems into the fruit. A minimal spray program should include at least one application during this period to protect against infection events, especially in blocks with a history of Phomopsis and on <u>highly susceptible varieties</u> .
Powdery Mildew	A lot of powdery mildew the previous year = More primary inoculum to cause infections this spring. The model logs potential primary infection events. Consider early sprays near the 3-5 inch shoot growth stage for <u>highly susceptible V. vinifera and hybrid varieties</u> in vineyards where powdery mildew was prevalent 30 days before leaf fall last year.
Black Rot	Bury mummies by cultivating or mulching within the row. A reminder - under NY conditions, berries are <u>highly susceptible</u> to black rot from cap fall until 3-4 weeks (Concord) or 4-5 weeks (Riesling, Chardonnay) later, gradually losing susceptibility and finally becoming highly resistant after another 2 weeks.

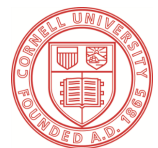
[Show grape infection events log](#)
[Show leaf wetness events log](#)



Onion Diseases

		Past 7 Days		Today	5-Day Forecast				
Disease		Number of days favorable	Average rating per day	May 15	May 16	May 17	May 18	May 19	May 20
Rain Prob (%) Night Day ?				- -	- -	- -	- -	- -	- -
Botrytis leaf blight	Michigan Botrytis forecast (BLB)	1	14	62	-	-	-	-	-
	Modified Blight Alert (IPI)	-	-2.39	-	-	-	-	-	-
Downy Mildew		-	NA	-	-	-	-	-	-
Purple Blotch (PRI)		-	3.4	-	-	-	-	-	-

Past 7 Days	Threshold Levels
Extremely favorable	Michigan Botrytis: BLB \geq 50
Very favorable	Modified Blight Alert: IPI \geq 7
Moderately favorable	Purple Blotch: PRI \geq 5.7
Slightly favorable	
Not favorable	
	Over threshold Below threshold



Potato Diseases

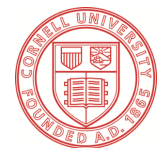
Potato Disease Forecast for Ithaca								
Forecast	Yesterday	Today	Ensuing 6 Days					
	6/14	6/15	6/16	6/17	6/18	6/19	6/20	6/21
Early blight P-Days Show p-day log	244	252	261	271	279	286	295	304
Late Blight Blitecast Severity Values Show severity value log	20	20	20	21	21	25*	26	26

** indicates wet period in progress; reported value is for forecasted end of wet period.
Observed data available through 6/21/2017 23:00.*

P-Days Key	
< 300	Below threshold.
>=300	P-Day threshold exceeded.
Blitecast Key	
>= 18	Severity value threshold exceeded.

More Information

Disclaimer: These are theoretical predictions and forecasts. The theoretical models predicting pest development or disease risk use the weather data collected (or forecasted) from the weather station location. These results should not be substituted for actual observations of plant growth stage, pest presence, and disease occurrence determined through scouting or insect pheromone traps.



Tomato Diseases

Tomato Disease Forecast for Ithaca								
Forecast	Yesterday	Today	Ensuing 6 Days					
	6/14	6/15	6/16	6/17	6/18	6/19	6/20	6/21
Early blight, Septoria leaf spot, anthracnose TOMCAST Show Tomcast log	14	14	17	17	17	20*	21	21
Late Blight Blitecast Severity Values Show severity value log	20	20	20	21	21	25*	26	26


* indicates wet period in progress; reported value is for forecasted end of wet period.
Observed data available through 6/21/2017 23:00.


TOMCAST Key	
< 25	Below threshold.

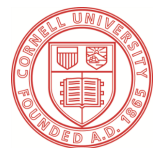
Blitecast Key	
>= 18	Severity value threshold exceeded.

More Information

Disclaimer: These are theoretical predictions and forecasts. The theoretical models predicting pest development or disease risk use the weather data collected (or forecasted) from the weather station location. These results should not be substituted for actual observations of plant growth stage, pest presence, and disease occurrence determined through scouting or insect pheromone traps.

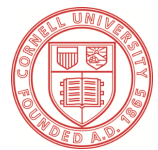
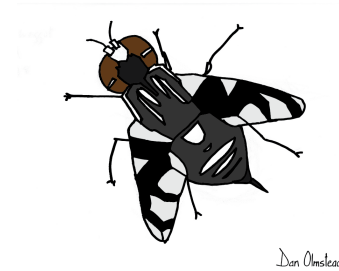
 NEWA

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Northeast Regional Climate Center



NEWA insect pest management

- Apples
 - Codling Moth, Obliquebanded leafroller, Plum Curculio, Oriental Fruitmoth, Apple maggot, Spotted Tentiform Leafminer, and San Jose Scale.
- Grapes
 - Grape Berry Moth.
- Vegetables
 - Cabbage maggot and onion maggot.



Apple Insects

Codling Moth Results for Ithaca

First Trap Catch:

First Trap Catch date above is estimated based on degree day accumulations or user input. Enter the actual date for blocks of interest and the model will calculate the protection period after first trap catch more accurately.

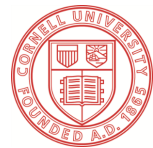
Accumulated degree days (base 50°F) first trap catch through 5/14/2017: 229 (0 days missing)

	Past	Past	Current	5-Day Forecast		Forecast Details		
Date	May 13	May 14	May 15	May 16	May 17	May 18	May 19	May 20
Daily Degree Days (Base 50BE)	1	3	0	-	-	-	-	-
Accumulation since January 1	280	284	284	-	-	-	-	-

Accumulated Degree-Days

Pest stage:

Pest Status	Pest Management
Eggs usually begin to hatch about 220 DD after the first catch, and catches of adults should be increasing in pheromone traps.	Apply the first spray for control of overwintering CM at 250 DD after first catch. In some seasons, Plum curculio will still be active at this time and a broad spectrum material should be selected to control both of these pests at this time in high risk PC orchards. If <u>internal worm damage</u> has been observed in past years in an orchard, CM populations may be resistant to organophosphate and synthetic pyrethroid insecticides and other classes of materials may be more effective.



Grape Berry Moth

Grape Berry Moth Results for Ithaca

Wild Grape Bloom: 5/1/2017

Wild Grape Bloom date above is estimated based on degree day accumulation or user input. Enter the actual date for blocks of interest and the model will calculate the results more accurately.

Accumulated degree days (base 47.14°F) wild grape bloom through 5/15/2017: 63 (0 days missing)

Daily Degree Days for Ithaca

Base Temp	Past	Past	Current	5-Day Forecast					Forecast Details
	May 13	May 14	May 15	May 16	May 17	May 18	May 19	May 20	
47.14F - GBM	3	3	NA	NA	NA	NA	NA	NA	
Accumulation	60	63	NA	NA	NA	NA	NA	NA	

NA - not available

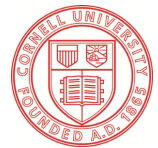
Download Time: 5/15/2017

Pest Status

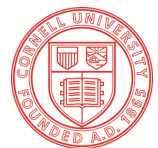
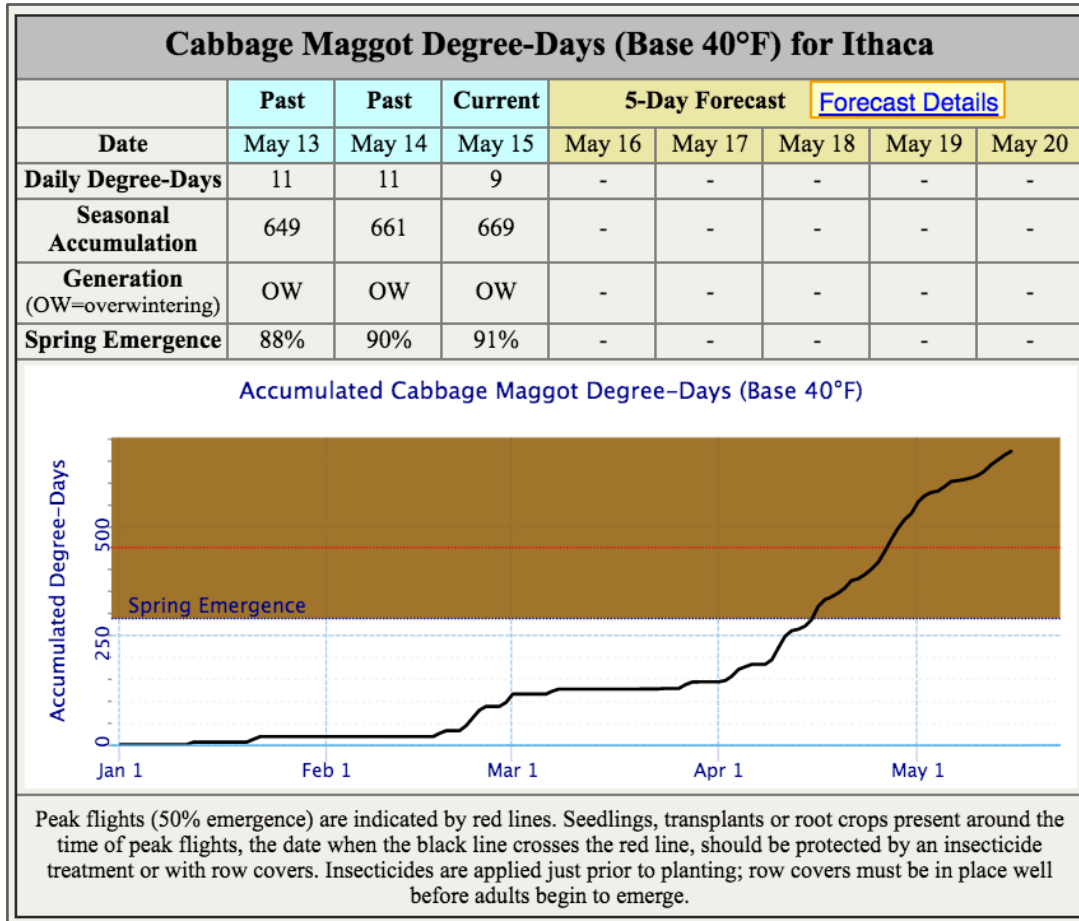
First generation of grape berry moth larvae are hatching and beginning feeding. Grape berry moth will not be at significant population levels in all but the highest risk vineyards.

Pest Management

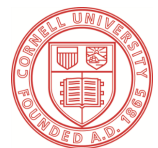
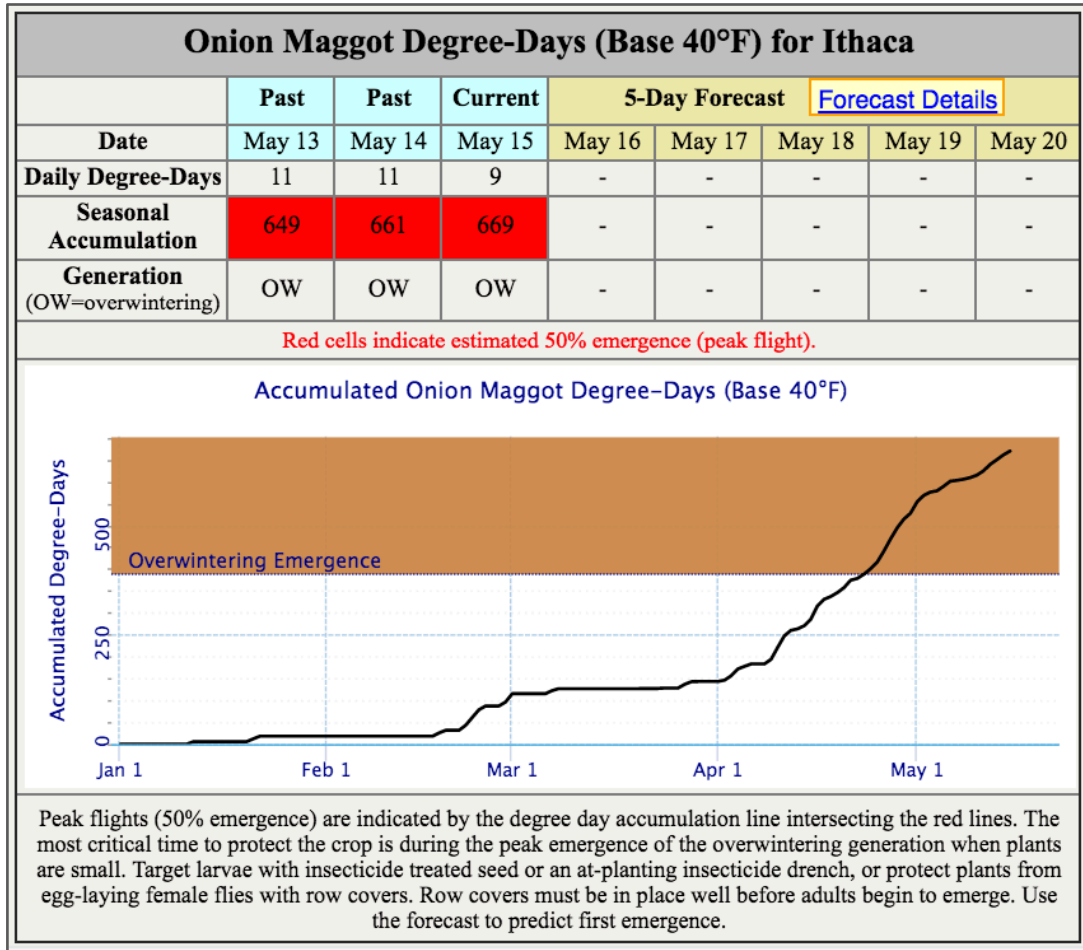
Research has shown that this insecticide timing for the first generation provides little, if any, additional control of grape berry moth in vineyards classified as being at low, intermediate or high risk for grape berry moth damage. However, an insecticide timed with the immediate postbloom fungicide application can be used in vineyards experiencing significant crop loss from grape berry moth on a yearly basis or in high value vinifera blocks.



Cabbage Maggot

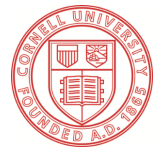


Onion Maggot



NEWA crop management tools

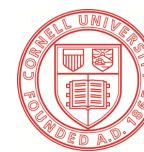
- Apples
 - Carbohydrate thinning model.
 - Irrigation model



Apple Carbohydrate Thinning model

Home > Crop Management Tools> Apple Carbohydrate Thinning

Apple Carbohydrate Thinning Model for Ithaca								
Change green tip and/or bloom date and click "Calculate" to recalculate results.								
Green tip date			Bloom date			Calculate		
3/1/2017			4/25/2017					
Apple Carbohydrate Thinning Model Results								
Date	Max Temp (°F)	Min Temp (°F)	Solar Rad (MJ/m2)	Tree Carbohydrate Status (g/day)				Thinning Recommendation
				Production	Demand	Balance	4-Day Ave Balance	
5/11	64	36	18.3	72.12	71.98	0.14	-26.59	Decrease chemical thinner rate by 15%
5/12	65	45	15.5	65.10	97.09	-31.99	-27.97	Decrease chemical thinner rate by 15%
5/13	53	48	5.0	24.68	76.54	-51.86	-23.17	Decrease chemical thinner rate by 15%
5/14	59	43	11.7	56.29	78.94	-22.65	-34.25	Decrease chemical thinner rate by 15%
5/15	61	45	20.2	83.14	88.54	-5.40	-56.06	Decrease chemical thinner rate by 30%
5/16	67	38	15.3	73.20	85.97	-12.77	-63.59	Decrease chemical thinner rate by 50%
5/17	88	56	26.7	90.92	187.12	-96.19	-62.21	Decrease chemical thinner rate by 50%
5/18	87	61	21.9	82.58	192.45	-109.87	-45.18	Decrease chemical thinner rate by 30%



Apple irrigation model

Home > Crop Management Tools> Apple Irrigation

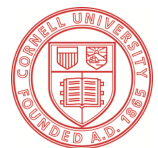
Apple ET Model for Ithaca

Change green tip date or tree density and click "Calculate" to recalculate results. Changing "Age of Orchard" will automatically recalculate table.

Green tip date	In row spacing	Between row spacing	Trees per acre	Age of orchard	Water balance
3/1/2017	10 feet	6 feet	726	Mature	

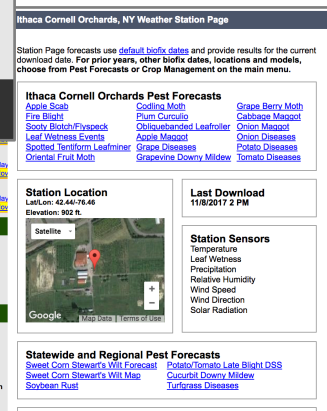
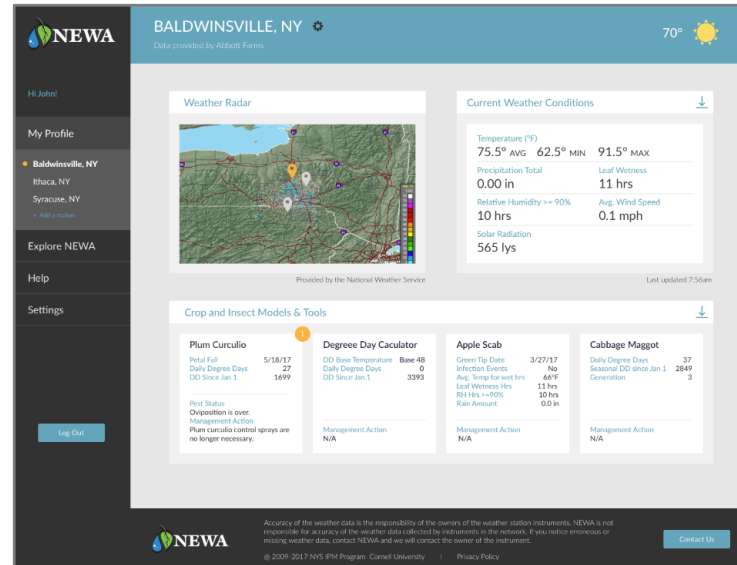
Apple Evapotranspiration Model Results

Date	Orchard ET (gallons)		Rainfall		Irrigation	Water Balance (gallons/acre)	
	per tree	per acre	inches	gallons/acre	gallons/acre	Daily	Cumulative
May 8	1.2	851	0.09	1711	0	860	0
May 9	2.3	1649	0.00	0	0	-1649	-1649
May 10	1.9	1385	0.00	0	0	-1385	-3034
May 11	2.7	1931	2.4	45619	0	43688	0
May 12	2.8	1997	0.01	190	0	-1806	-1806
May 13	0.5	352	0.16	3041	0	2690	0
May 14	1.4	1036	0.35	6653	0	5617	0
May 15	-188.3	-136704	0.04	760	0	137465	0
May 16	-188.3	-136704	0.00	0	600	137304	0
May 17	-188.3	-136704	0.00	0	0	136704	0
May 18	-188.3	-136704	0.10	1901	0	138605	0
May 19	-188.3	-136704	0.00	0	0	136704	0
May 20	3.3	2402	0.00	0	0	-2402	-2402
May 21	3.0	2154	0.00	0	0	-2154	-4555



Future NEWA

- Major redesign
- 2019 tentative launch
- Compatibility with all devices and computers
- User accounts*
 - Saved settings
 - Selectable models



A customizable NEWA station page concept created by Cornell graduate students in fall 2017.

Current static NEWA station page design.

