

## PREBLOOM LEGROOM

SYNCING  
WITH PINK  
(Art  
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Entomol-  
ogy,

Geneva; [ama4@cornell.edu](mailto:ama4@cornell.edu))



❖❖ After a teasing of spring weather that resisted committing for a few weeks, we finally appear to be within hailing distance of pink bud by now; as is typical, the Hudson Valley has vaulted past and is already well into apple bloom. Insect management duties at this period have always been somewhat transitory, and not nearly as urgent as at petal fall, but the following might help put the various possibilities into perspective for those that can take advantage of them.

First, if **San Jose scale** is a concern and you have yet to do anything to head it off, there is still a limited window of suitable management tactics available before foliar development progresses too far to permit effective coverage. If you were intending to use oil, a 1% spray through tight cluster (provided you're not past it) can be quite effective, if you're able to thoroughly cover the wood surfaces. Insecticidal options include Centaur (34.5 oz/A), Esteem (4–5 oz/A), Lorsban (4EC or Advanced at 1.5–4 pt/A; or 75WG at 2–2.67 lb/A), Sivanto Prime (10.5–14 fl oz/A) and Venerate (2–4 qt/A). Remember that you are limited to only 1 application of Lorsban in apples per season, whether prebloom as a foliar or trunk spray, or as a post-bloom trunk application.

The pests of greatest concern at pink bud are usually **rosy apple aphid** (RAA), **oriental**

**fruit moth** (OFM), and **tarnished plant bug** (TPB), with **European apple sawfly** and **plum curculio** on deck, optimally to be addressed at petal fall. OFM has yet to make its entrance in Geneva, but it established sustained flight in Highland a few weeks ago, so it will not be too long before biofix is established in a number of plantings statewide. In blocks with a history of OFM infestation, 1 or 2 traps checked at least weekly will help indicate the timing and relative size of the first generation population this year. What should be the response when the numbers start building?

In a normal year, the average temperature ranges tend to result in very little egg hatch during pink and bloom, as this usually holds off until petal fall. For growers wishing to save A-list products like Altacor or Delegate until after petal fall, a B.t. product would be an option from pink through

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## IN THIS ISSUE...

### INSECTS

- ❖ Insect pests at pink bud

### DISEASES

- ❖ Managing fire blight in 2020
- ❖ Weekly Apple Scab Update

### GENERAL INFO

- ❖ Virtual CCE LOF Pink meeting

### PEST FOCUS

### TRAP CATCHES

### PHENOLOGIES

### UPCOMING PEST EVENTS

bloom. Regardless, don't neglect the value of using (and frequently checking) pheromone traps to set the clock on both OFM and codling moth development in specific blocks. Also, the value of mating disruption as a component of OFM and CM management programs cannot be overstated. Now is the optimal time to deploy pheromones for both of these species; although CM starts to fly a bit later, our favored approach is to use products that incorporate the mating pheromones of both insects, so it's prudent to act now to ensure that you're ready for their emergence. These first flights of the season give us the best opportunity to get on top of internal worm control, because timing and development of the different stages only gets more complicated (i.e., less synchronized) as the season progresses. Options available include hand-applied products such as Isomate CM/OFM TT ties, Cidetrak CMDA Meso-A or OFM Meso-L dispensers, and mechanical aerosol dispensers such as Checkmate Puffer and Isomate CM/OFM Mist.

Depending on block history and personal philosophy, RAA and TPB can be either annual challenges, puzzling but token annoyances, or else a complete toss of the dice. Do they occur, do they need to be treated, are they able to be controlled adequately, and does it matter if they're just ignored? These pests also have yet to indicate their potential for problems this season, although it's likely that rosies can be found already in some orchards, given enough inspection. It's possible to scout for RAA at pink, but this is often not practical, considering all the other things demanding your attention at this time. TPB is not a good candidate for scouting, and if the bloom period is prolonged by cool, wet weather (still a likelihood this year), a pink spray is of little use. You'll need to decide for yourself whether this bug is of sufficient concern to you to justify treating.

We have seen few orchards in western NY (and only slightly more in the Hudson Valley) where TPB control is warranted, simply because the most effective treatment has been to use a py-

rethroid, which: a) kills predator mites, and b) still rarely lowers TPB damage enough to be economically justified. If you elect a spray of Asana, Baythroid, Danitol, Gladiator, Pounce, Warrior or Be-seige at pink for plant bug, you'll take care of rosy apple aphid (plus mullein plant bug and STLM) at the same time. If RAA is your main concern, you could elect a pink spray (non-pyrethroid options include Actara, Assail, Beleaf, Esteem, Lannate, Lorsban, or Vydate) if you have the luxury of a suitable application window. Once again, be sure to consider potential impacts on non-target species such as beneficials, and be aware of your bee supplier's concerns about effects on pollinating bees.

**Leafrollers** are also out there, but only a portion of the population will be active at this time, so although you might get good control of any larvae you spray now, don't forget that the rest of the population won't be out (and susceptible to sprays) until bloom or petal fall, so it's probably better to wait until then to address this pest.

As noted in the April 13 issue, **dogwood borer** deserves to be taken seriously as a potential

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## scaffolds

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problem in most orchards these days, and while it may be past the time for a prebloom trunk spray (something that can still be elected after petal fall), the recommended complementary tactic of mating disruption should be kept in mind for the period between now and first adult flight in mid-June. If you're hanging ties or meso dispensers for leps now, it could be convenient to multi-task and set out Isomate-DWB ties at the same time.

Finally, if **mites** normally need attention in a given block, and you haven't elected (or been able to use) a delayed-dormant oil application as a part of your early season mite management program, you'll be needing to rely on either: one of the ovicidal acaricides (Apollo, Savey/Onager, Zeal) available for use, whether before or after bloom; a rescue-type product after bloom (add Acramite, Banter, Envidor, Kanemite, Nealta, Nexter, and Portal to the above list) that can reduce motile numbers later on if they should begin to approach the threshold; or Agri-Mek, which falls somewhere between these two strategies. Like the true ovicides, Agri-Mek should also be considered a preventive spray, as it needs to be applied early (before there are very many motiles) to be most effective, generally within the first 2 weeks after petal fall. Recall that Proclaim and Minecto Pro are related to Agri-Mek, and also have miticidal activity, if you expect to use them at petal fall for leafrollers. For any of the rescue products, the operational threshold (through June) is an average of 2.5 motiles per leaf (see the chart on p. 75 of the Recommends). ❖❖

## PEST FOCUS

### Geneva:

Spotted Tentiform Leafminer 1st catch  
5/1.

## FEELING THE BURN

### MANAGING FIRE BLIGHT IN 2020

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### 2019 Fire Blight Season Recap

The number and magnitude of fire blight outbreaks in NY in 2019 was similar to 2018, but lower than the previous years. Fire blight was reported in most areas of the state, but there were no widespread outbreaks and no growers brought to our attention any reports of planting-wide losses due to the disease. Production areas in the Hudson Valley experienced a period of "extreme risk" of fire blight around the middle to end of May; because this was at approximately petal fall, only young plantings with protracted bloom and those with rattail boom would have been at high risk. Production areas in the rest of the state didn't reach bloom until after the first week of May, delayed slightly relative to other years due to cool spring weather. In these regions, weather remained cool during bloom, therefore fire blight risk was low. Overall, 2019 was a light fire blight season for most of NY State. Younger plantings with vigorous growth and protracted bloom may have had problems around the end of May, but overall, there were few reports of fire blight.

### Present Season

Currently, orchards in the Hudson Valley are beginning to bloom, but the sudden change to cooler temperatures at beginning of this week is keeping the initial risk of fire blight low. In Western NY, the sudden cool weather is slowing tree growth, and king bloom may be more than a week away. Given the early warm weather at the end of February and

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march followed by cool weather in April, the season may be slow to reach bloom and petal fall subsequently. The long-term forecast suggests more cool weather in May, and it may be an easy fire blight season if conditions remain cool through petal fall. Despite the potential for a cool bloom, weather can change suddenly, and it will be important to watch disease and weather forecasts and follow extension specialists' alerts and bloom predictions.

### Forecasting Infection Events

Keep track of first blossom open dates for each of your varieties, especially those that are susceptible to fire blight. Make a note on a piece of paper or in notes on your phone. Use these dates to run the NEWA fire blight model to increase precision. If you have such precise information, avoid using the model default dates or generalized, region-wide dates.

As you consider disease forecasting outputs from NEWA or other forecasting models, here are some things to consider before making applications of antibiotics or other costly materials for managing blossom blight:

#### 1 - **Predictions and forecasts are theoretical.**

The theoretical models predicting 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 and disease occurrence determined through scouting or monitoring.

2 - **Consider the history of fire blight in the planting.** If there was no fire blight the previous season or if you have never had fire blight do not let excessive model predictions or extension alerts (including this article) "intimidate you" into applying unnecessary antibiotics each time an alert is released.

3 - **Consider the age and susceptibility of your trees.** Age and variety can play a large role in the development of fire blight. Presently, none of the models consider these factors

in a formal sense. Adjust your interpretations of model predictions based on tree age, variety and rootstock. If you have a young planting of a highly susceptible variety, it may be more important to protect these blocks based on model predictions than a 15-year-old 'McIntosh' planting on resistant rootstocks, which may not warrant the same level of protection during bloom and which you no longer have a market for. A [listing of susceptible cultivars and rootstocks](#) is linked from the NEWA model page for fire blight.

4 - **The models only identify risk of infection based on weather conditions.** This includes temperature and moisture conditions. All wetting events are now color-coded light blue in NEWA to draw attention to the weather factors that promote bacterial ingress into the flowers. Despite the use of words like "extreme" and "infection" colored in vibrant red, the models only predict infections based on favorable weather conditions. If the apple variety is not highly susceptible, if there is no prior history of fire blight, and if the trees aren't being pushed into high vigor with nitrogen, the actual risk of fire blight infection may be low to non-existent.

5 - **Weather forecasts and predictions can change frequently.** Model predictions are based on weather predictions, so when forecasts change, the model predictions and corresponding risk will also change drastically. The bacteria causing fire blight double in population size every 20 minutes when temperatures are greater than 60°F. The models use hourly weather data, rather than daily summaries, to accommodate the rapid growth rate of these pathogens. Check the fire blight predictions, especially those in the forecasts, frequently. The 1- and 2-day forecasts are the most reliable; those at 3-, 4- and 5-days are less reliable as predictors. NEWA uses the National Weather Service forecasts. Compare these to your favorite local weather forecast provider.

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We have continued to refine and update our guidelines for managing fire blight in NY with an emphasis on young plantings. The guidelines below are broken up into three sections: general guidelines for season-long management, additional guidelines for new plantings, and guidelines for on-farm nursery production:

### **Nine general guidelines for season-long management of fire blight in apples and pears**

1 - All fire blight strikes and shoots with larger cankers should be removed during winter pruning. Remove any trees where the central leader or main trunk has become infected. Infected wood should be removed from the orchard and either burned or placed where it will dry out rapidly. The fire blight pathogen can withstand cold temperatures but is intolerant to drying.

2 - Copper sprays should be applied at green tip. Processing varieties can be protected with copper as late as 1/2-inch green depending on requirements of the label.

3 - Preventive applications of prohexadione-calcium (Apogee or Kudos) for shoot blight should be seriously considered, especially on highly susceptible apple varieties during shoot elongation beginning in late bloom.

4 - An application of prohexadione-calcium at pink at 6 oz/100 gal may reduce blossom blight and subsequent shoot blight in high-vigor blocks. However, this practice should not be a substitute for a robust blossom blight program, but could be used to reduce the number of antibiotic applications in a cool season where risk is slow (see 6).

5 - During bloom, follow a blossom blight forecasting system such as the ones offered in NEWA ([newa.cornell.edu/index.php?page=apple-diseases](http://newa.cornell.edu/index.php?page=apple-diseases)). Time applications during high risk weather only. If the operation rarely or has never had fire blight, it may not be necessary to apply antibiotic each time a high-risk period is forecast. Regardless of model predictions, it is rarely necessary to make more than three applications for blossom blight.

6 - Begin antibiotic applications for blossom blight with a single application of streptomycin at 24 oz/acre. Consider including the penetrating surfactant Regulaid (1 pt/100 gal of application volume) in the first streptomycin spray to enhance the effectiveness of streptomycin. Regulaid would be especially beneficial when applied under rapid drying conditions. Regulaid can be omitted from subsequent applications to minimize the leaf yellowing that is sometimes associated with repeated applications of streptomycin. If later antibiotic applications are needed, streptomycin or kasugamycin (Kasumin 2L 64 fl oz/A in 100 gallons of water) should be used. Consider making at least one application of Kasumin 2L for resistance management purposes.

7 - In the two weeks following bloom, scout for and prune out fire blight strikes promptly. Destroy pruned strikes by burning or leaving them out to dry. It is best to prune well back into healthy wood, at least 12 inches behind the water-soaked margin. Take care, as summer pruning may stimulate active shoot growth leading to new susceptible tissues that could later become infected. If fire blight reaches the central leader, the tree should be removed. However, the spot may be safely replanted.

8 - Preventive applications of prohexadione-calcium (Apogee or Kudos) for shoot blight should be seriously considered, especially on highly susceptible apple varieties during shoot elongation beginning in late bloom.

a - For maximum effectiveness, prohexadione-calcium should be applied at 6–12 oz/100 gal (3–6 oz/100 gal for tree <5 years) when trees have 1–2" of shoot growth. A second application should be made 14–21 days later.

b - If one has made an application of prohexadione-calcium at pink, a second petal fall application may not be needed.

c - A program where prohexadione-calcium is applied at low rates slowly over the

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period of active shoot growth is gaining popularity for reduced impacts on tree productivity. Specific programs may vary slightly, but generally consist of three applications at 1–2 oz/100 gal on a 14-day schedule beginning with early shoot growth in mid- to late bloom. Take caution, as such programs have not been widely validated over many seasons and locations.

9 - Preventive applications of copper can be used post-bloom and during the summer to protect against shoot blight infections. Copper must be applied before infection occurs as it will only reduce bacteria on the surface of tissues. Copper will have no effect on existing shoot blight infections. Copper may cause fruit russet in young developing fruit. Apply with adequate drying time and use hydrated lime to safen copper. Terminal shoots can outgrow protective residues of copper. Hence, a low rate fixed copper program consists of applications on a 7–10-day schedule during high risk weather until terminal bud set.

10 - It may be possible to save plantings on resistant rootstocks that have a moderate amount of shoot blight. Apply prohexadione-calcium at the highest rate for the planting (6–12 oz/100 gal) and allow 5 days for the product to affect the tree. Afterwards, prune out existing and newly developing shoot blight every two weeks for the rest of the season. Remove any trees where fire blight has reached the central leader. If pruning seems to stimulate additional shoot growth, a second application of prohexadione-calcium could be warranted.

11 - Replant skips in late fall to better synchronize next season's bloom with the established trees, if you need to interplant apple trees in existing orchards where trees were killed by fire blight and removed.

### **Eight additional guidelines for new plantings (1-2 years)**

1 - If possible, plant varieties grafted on fire blight-resistant rootstocks.

2 - Immediately after planting, and 14 days later, a copper application should be made using the lower copper rates that are labeled for use after green tip. Ensure that soil has settled to avoid phytotoxicity to roots.

3 - Trees should be scouted at 7-day intervals for fire blight strikes until July 31st. Infected trees should be removed as described above. Plantings also need to be scouted 7–10 days after hail or severe summer storms. The NEWA fire blight disease forecast tool ([newa.cornell.edu/index.php?page=apple-diseases](http://newa.cornell.edu/index.php?page=apple-diseases)) can assist by providing an estimate of symptom emergence following a storm or other trauma event. Also, scout the planting at the end of the season (mid-September).

4 - If possible, remove flowers before they open. New plantings may have considerable numbers of flowers the first year, and blossom removal may not be practical. If done, remove the blossoms during dry weather and before a lot of heat units have accumulated, because both factors contribute to higher risk of fire blight infection.

5 - Trees should receive an application of copper at a stage equivalent to bloom. Observe the labeled REI before blossom removal.

6 - To protect any remaining bloom, follow the chemical management program above.

7 - Infected trees should be removed entirely in high density orchards.

### **Eleven guidelines for on-farm nursery production**

1 - Collect budwood from orchards where fire blight is not established or from a neighboring farm without fire blight.

2 - Limit streptomycin and kasugamycin applications to 2–3 per season. These should be timed according to a disease forecast prediction or CCE alert.

3 - When fire blight pressure is high and shoots are actively growing, apply copper at the lowest labeled rate to prevent shoot blight.

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4 - Before conducting tree management tasks in the nursery apply a copper product at the lowest labeled rate and observe the labeled REI.

5 - Any pinching or leaf twisting should be done on dry sunny days with low relative humidity, after the REI of a copper application has expired.

6 - When working in the nursery, field workers must wear clean clothing, and should wash hands and disinfect working tools often.

7 - If fire blight is found in the nursery, completely remove the infected trees including the root system, and place them in trash bags between rows. Subsequently, remove the culled trees from between the rows and discard them.

Under no circumstances should unbagged infected trees be pulled between nursery rows when trees are wet, otherwise fire blight will be spread down the rows.

8 - Manage potato leafhoppers in the nursery using a registered product.

9 - Maintain weed control through cultivation. Apply registered post-emergence herbicides using a shielded boom. There are some residual herbicides registered for use in nurseries.

10 - When trees have reached the desired height, consider applying the lowest labeled rate of Apogee (1–2 oz/100 gal) to slow growth and reduce susceptibility to shoot blight.

11 - Manage nitrogen levels to balance tree growth and fire blight susceptibility. ❖❖

**Weekly Apple Scab Update for NY (5/4 to 5/9/20)**

Below are apple scab predictions for NY apple regions based on the NEWA disease forecast system (<http://newa.cornell.edu/index.php?page=apple-diseases>). Information is kept concise. Alerts will also be posted to Twitter @FruitPathology with updates occurring throughout the week, which would allow notifications to send to mobile device. The various outputs are explained below table.

	Hudson Valley	Finger Lakes	Wayne County	Niagara County	Champlain Valley
<b>Infection Predicted</b>	None 	None 	None 	None 	None 
<b>Maturity</b>	97%	76%	54%	35%	15%
<b>Discharge</b>	86%	51%	30%	17%	4%

\* Predictions are regional; the model works best under local conditions. Always check weather and crop stage before making a management decision.

**Infection predicted:**

- "Low": <10% ascospores discharged; "Moderate": 10-20% ascospores; "High": >20% ascospores discharged; "None" – no infection predicted for the week;
- "Date": An infection event is predicted for the date listed. If a multi-day infection event is predicted, the first full date of the infection will be listed

**Ascospore maturity:** The ascospore maturity during the predicated infection event. If no infection event is predicted, the maturity by the end of the week is listed.

**Discharge:** The percent ascospore discharge during the predicted infection event(s). If no infection event is predicted, the cumulative ascospore discharge by the end of the week is listed.

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

**Geneva, NY**

**Highland, NY**

	<u>4/27</u>	<u>5/1</u>	<u>5/4</u>		<u>4/20</u>	<u>4/27</u>	<u>5/4</u>
Green fruitworm	0.0	0.0	0.5	Green fruitworm	0.0	0.0	0.0
Redbanded leafroller	3.0	10.5	43.5	Redbanded leafroller	64.5	72.5	82.5
Spotted tentiform leafminer	0.0	0.5*	7.5	Spotted tentiform leafminer	79.0	151.5	188.0
Oriental fruit moth	0.0	0.0	0.0	Oriental fruit moth	2.5	5.5	65.5
				Codling moth	0.0	0.0	0.0

\* first catch

## EVENT ANNOUNCEMENT

**Monday May 11 – Lake Ontario Fruit program's 'Spring Pink Meeting' via Zoom**

The Lake Ontario Fruit program will be holding our spring pink meeting this year through Zoom. Please join us on Monday May 11, 2020. Noon-1pm, Eastern Time. This event is free to all, but you will need to pre-register using the following link:

[https://cornell.zoom.us/webinar/register/WN\\_UL8vOrpTR16qBuG-QObq6A](https://cornell.zoom.us/webinar/register/WN_UL8vOrpTR16qBuG-QObq6A).

**Topics/Speakers:**

- Counting flower buds/readjusting bud load via pruning at pink, and blossom thinning considerations - T. Robinson and M. Miranda Sazo (live from a Honeycrisp orchard at VanDeWalle Fruit Farm in Wayne County)
- Foliar sprays/ground applications/protocol for Peel SAP analysis of Honeycrisp - L. Cheng and M. Miranda Sazo
- Early 2020 Season Disease Update - K. Cox
- Spring insect management priorities - A. Agnello
- Factors to consider to optimize pollination this spring - J. van Zoeren
- Questions and Answers

**PHENOLOGIES****Geneva:**

Apple	
(McIntosh):	early pink
Empire:	50% early pink
(Red Delicious):	30% early pink
(Idared):	tight cluster
Pear (Bosc):	green cluster to early white bud
Sweet Cherry:	bloom
Tart Cherry:	white bud to early bloom
Peach:	pink to early bloom
Plum:	bloom to petal fall
Apricot:	bloom to petal fall

**Highland:**

Apple	
(McIntosh):	50% king bloom
(Ginger Gold):	full bloom
(Red Chief):	50% king bloom
(Smoothie):	50% king bloom
(Empire):	full bloom
(Honeycrisp):	40% king bloom
(Zestar):	full bloom
(Jersey Mac):	full bloom
(Gala):	70% king bloom
(Liberty,	10% bloom
Scarlet O'Hara,	
Florina Querina):	60% full bloom
Pear	
(Bartlett):	full bloom
(Bosc):	90% bloom
Sweet Cherry:	35% petal fall
Peach:	95% petal fall / 32% shucks on

## UPCOMING PEST EVENTS

	43°F	45°F	50°F
Current DD* accumulations (Geneva 1/1–5/4):	218.4	168.6	83.7
(Geneva 1/1–5/4/2019):	223.3	177.6	93.3
(Geneva "Normal"):	269.0		131.4
(Geneva 1/1-5/11, predicted):	228.0	174.3	84.5
(Highland 1/1–5/4):	360.7		148.0

<u>Upcoming Pest Events (Geneva):</u>	<u>Ranges (Normal ±StDev):</u>		
Comstock mealybug nymphs in pear buds	215-441		80-254
Green apple aphids present	111-265		38-134
Obliquebanded leafroller larvae active	158-314		64-160
Oriental fruit moth 1st catch	220-320	189-275	95-160
Pear psylla 1st egg hatch	174-328		60-166
Rosy apple aphid nymphs present	134-244		56-116
McIntosh pink	266-316		121-160

\*all DDs Baskerville-Emin, B.E.

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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