Cornell Cooperative Extension

Eastern NY Commercial Horticulture Program

Tree Fruit News

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Fall Pre-Emergent Herbicide Timing Results and Takeaways Michael Basedow, CCE ENYCHP and Janet can Zoeren, CCE LOFP

In the August TFN, David Bittner and I discussed his strategy of post-harvest applications of 2,4-D and clopyralid (Stinger) to clean up the herbicide strip and row middles of perennial broadleaves. In addition to making that application in the fall to manage your problem perennials, post-harvest can also be a good time to get your pre-emergent materials on to get a leg up on your annual weeds heading into the next growing season. In the next few paragraphs, we'll discuss some results from our ARDP funded project comparing fall and spring pre-emergent herbicide applications, and some strategies you can use to get the most out of your fall pre-emergent herbicide applications.

In our ARDP herbicide study, we compared fall versus spring timings of two pre-emergent herbicide combinations. In the fall of 2020, we applied Chateau and Prowl (along with glufosinate for burndown of existing vegetation) on a portion of a commercial herbicide strip in Peru and Albion, respectively. Another portion of the strip received that same combination of materials the following spring, while a third treatment received no pre-emergent application at all, just glufosinate to burn down existing vegetation. We scouted the weed plots throughout the growing season, paying close attention to the plots during the critical weed free period of May through July. We made follow up applications with post-emergent materials to each plot as needed.

You can see the full list of applications that went on each treatment in Peru (Figure 1) and Albion (Figure 2) in 2021 on the next page.

The Peru sites received more follow up applications than the Albion site. This was due to the heavy perennial weed pressure we had in Peru from species like quackgrass and perennial sowthistle.

We repeated these methods in the fall of 2021, this time using Alion as our preemergent material. Here you can see the full list of treatments that have gone in Peru (Figure 3) and Albion (Figure 4) in 2022 to date.

In Figures 5 and 6, you can see the effects of the timings on the overall weed cover within the plots when Chateau and Prowl were used in both Peru (Figure 5) and Albion (Figure 6).

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2021 Peru Treatment Calendar				
Date	Treatment 1: Fall Applied	Treatment 2: Spring Applied	Treatment 3: Posts Only	
11/6/2020	Prowl 4qt/Acre + Chateau 12oz/Acre + Forfeit 48 fl oz/Acre			
3/22/2021		Prowl 4qt/Acre + Chateau 12oz/Acre + Forfeit 48 fl oz/Acre		
4/27/2021	Poast at 1.5pt/Acre	Poast at 1.5pt/Acre	Poast at 1.5pt/Acre	
5/14/2021			Rely 280 48 fl oz/Acre	
5/24/2021	Milkweed hand cut	Milkweed hand cut	Milkweed hand cut	
5/26/2021	Rely 280 48 fl oz/Acre	Rely 280 48 fl oz/Acre		
6/8/2021	Milkweed hand cut	Milkweed hand cut	Milkweed hand cut	
6/16/2021	Poast at 1pt/Acre	Poast at 1pt/Acre	Poast at 1pt/Acre	
6/22/2021	Milkweed and rootsucker hand cut	Milkweed and rootsucker hand cut	Milkweed and rootsucker hand cut	
6/29/2021	Glystar Plus 2.5qt/Acre + Stinger at 1/3 pt/Acre	Glystar Plus 2.5qt/Acre + Stinger at 1/3 pt/Acre	Glystar Plus 2.5qt/Acre + Stinger at 1/3 pt/Acre	
8/6/2021	Milkweed and rootsucker hand cut	Milkweed and rootsucker hand cut	Milkweed and rootsucker hand cut	
8/10/2021	Rely 280 70 fl oz/Acre	Rely 280 70 fl oz/Acre	Rely 280 70 fl oz/Acre	
10/12/2021	Hand cut	Hand cut	Hand cut	
10/28/2021	Gramoxone 2.5pt/Acre	Gramoxone 2.5pt/Acre	Gramoxone 2.5pt/Acre	
11/4/2021	Alion 5 fl oz/Acre + Rely 48 fl oz/Acre			

Figure 1. Applications made to the three treatments at our Peru field site in 2021.

2021 Albion Treatment Calendar				
Date	Treatment 1: Fall Applied	Treatment 2: Spring Applied	Treatment 3: Posts Only	
10/23/2020	Prowl 4qt/Acre + Chateau 12oz /Acre + Interline 48 fl oz/Acre			
3/22/2021		Prowl 4qt/Acre + Chateau 12oz /Acre + Interline 48 fl oz/Acre		
5/6/2021			Interline 48 fl oz/Acre	
7/11/2021	Mad Dog Plus 2.5qt/Acre	Mad Dog Plus 2.5qt/Acre	Mad Dog Plus 2.5qt/Acre	
8/19/2021	Interline 80oz/Acre	Interline 80oz/Acre	Interline 80oz/Acre	
10/22/2021	Alion 5oz/Acre + Interline 48 fl oz/Acre			

In Peru, fall and spring applications of Chateau and Prowl gave similar levels of control, except on August 10 and October 12th when (refer to Figure 1 to see dates of follow up applications on each the fall treatment had more weed cover. We found there were no differences between any of the three treatments during the critical weed free period from May through July. This was likely due to us needing to make multiple follow-up burndown applications on all three treatments to keep the perennial weeds in check in these plots

Figure 2. Applications made to the three treatments at our Albion field site in 2021.

treatment).

In Albion, the fall-applied Chateau and Prowl had the least weed cover during the weed free period relative to the spring and postemergent only treatments.

2022 Peru Treatment Calendar				
Date	Treatment 1: Fall Applied	Treatment 2: Spring Applied	Treatment 3: Posts Only	
11/4/2021	Alion 5 fl oz /Acre + Rely 280 48 fl oz/Acre			
4/26/2022	Select Max 16 fl oz / Acre	Select Max 16 fl oz / Acre	Select Max 16 fl oz / Acre	
4/30/2022		Alion 5 fl oz /Acre + Rely 280 48 fl oz/Acre		
5/11/2022			Rely 280 48 fl oz/Acre	
5/20/2022	Rely 280 48oz/Acre			
5/31/2022	Select Max 16 fl oz / Acre	Select Max 16 fl oz / Acre	Select Max 16 fl oz / Acre	
6/3/2022	Milkweed hand cut	Milkweed hand cut	Milkweed hand cut	
6/16/2022	Milkweed hand cut	Milkweed hand cut	Milkweed hand cut	
6/28/2022	Milkweed hand cut	Milkweed hand cut	Milkweed hand cut	
7/7/2022	Glystar Plus 3qt/Acre	Glystar Plus 3qt/Acre	Glystar Plus 3qt/Acre	
	Milkweed and rootsucker	Milkweed and rootsucker hand	Milkweed and rootsucker	
8/12/2022	hand cut	cut	hand cut	
8/16/2022	Gramoxone 3pt/Acre	Gramoxone 3pt/Acre	Gramoxone 3pt/Acre	

Figure 3. Applications made to the three treatments at our Peru field site in 2022.

2022 Albion Treatment Calendar				
Date	Treatment 1: Fall Applied	Treatment 2: Spring Applied	Treatment 3: Posts Only	
10/22/2021	Alion 5 fl oz /Acre + Interline 48 fl oz/Acre			
4/30/2022		Alion 5 fl oz /Acre + Interline 48 fl oz/Acre		Figure 4.
6/8/2022	Select Max 16 fl oz / Acre	Select Max 16 fl oz / Acre	Select Max 16 fl oz / Acre	made to the
6/25/2022			Interline 48 fl oz/Acre	three treatments
7/29/2022		Interline 48 fl oz/Acre		at our Albion field site in
8/18/2022			Interline 48 fl oz/Acre	2022.



Figure 5. 2021 weed cover in Peru following fall applied Chateau + Prowl, spring applied Chateau + Prowl, and a post-emergent only program. Additional post-emergent applications were made on each plot as needed.





Figure 6. 2021 weed cover in Albion following fall applied Chateau + Prowl, spring applied Chateau + Prowl, and a post-emergent only program. Additional post-emergent applications were made on each plot as needed.

(Continued from page 2)

Now we will review the results of our Alion treatments in Peru (Figure 7) and Albion (Figure 8).

In Peru, the fall applied treatment had the least amount of weed cover on six of the nine scouting dates. On the other three dates, the other treatments had recently received a follow-up burndown application. The fall applied Alion also had the least weed cover when averaged over the weed free period. The spring applied Alion had a few breakthroughs early in the season, but still had considerably less weed cover than the postemergent only treatment throughout much of June and July. All treatments once again required follow up post-emergent applications throughout the summer to keep perennial weeds in check (refer back to figure 3 for the timing of these applications).

In Albion, the fall application of Alion kept weed cover below 5% through mid-July, and even by August weed pressure in the fall applied Alion plots was below 10% plot coverage. No burndown herbicide was applied to those plots aside from the single application of the grass-specific Select Max. Weed control was also fairly good in the spring applied Alion plots, although those required one burndown application in mid-summer. The postemergent only plots required two burndown applications, and pressure still reached 70% plot cover in mid-June.

Given these results, we conclude fall applications of these materials at both sites provided efficacy as good or better than applications made the following spring when integrated into a seasonlong weed management program. We recommend Figure 8. 20 making fall applications of pre-emergent herbicides where your herbicide strips are clean enough and weather conditions are favorable. Previous work by Deborah Breth, Dan Donahue, and Anna Wallis also found good efficacy from fall applications with the following materials/ combination of materials.

- Chateau (mostly annual broadleaves and some grasses) + Prowl (mostly annual grasses)
- Alion (annual broadleaves and grasses)
- Sandea (annual broadleaves and sedges)+ Prowl (mostly annual grasses)
- Goaltender (annual broadleaves and some grasses)
- Simazine (mostly broadleaves) + Diuron (mostly broadleaves)
- Sinbar (annual broadleaves)
- Casoron (annual broadleaves and grasses)
- Matrix (annual broadleaves and grasses)



Figure 7. 2022 weed cover in Peru following fall applied Alion, spring applied Alion, and a postemergent only program. Additional post-emergent applications were made on each plot as needed.



long weed management program. We recommend making fall applications of pre-emergent herbicides where your berbicide strips are clean enough and reeded.

Here are a few suggestions if you would like to apply pre-emergent herbicides this fall:

Choose materials that fit your weed composition – different materials work better on different weed species. Look at your plots this fall and see what you have in your plots when deciding on which material to apply. Our <u>herbicide lookup table</u> can help you select which material to use. Few products will cover everything you have, so tank mix materials to get the full spectrum of control that you need.

Pay close attention to weather requirements – Pre-emergent herbicides are finicky materials. For them to work well, they need to be applied under the right temperature/soil/tree conditions. Most need to go on prior to soil freeze up. Check the labels closely to make sure you are applying them under (as close to) ideal conditions as possible to maximize your weed control the following spring.

Apply to as clean of a strip as possible – Many pre-emergent

materials need to be applied to bare soil to get maximum efficacy. The chemical needs to reach the soil surface, so applying them on top of a weedy strip is going to greatly reduce your control. So with that in mind....

Clean up the strip ahead of your application as much as possible – In Peru, we went through two weeks ahead of our Alion application with paraquat to burn down the vegetation that had come up during harvest. We applied the Alion two weeks later, after the vegetation had time to burn back and expose the soil surface.

Don't rely on one application to give season long control – Like any IPM program, the best control is going to be gained by using multiple tools from the tool box. Use a variety of tactics (pre-emergent materials, timely burndown applications, well-timed systemic materials) to manage your weeds season-long.

If you would like to discuss weed management on your farm in more detail, or if you have ideas for future weed management research you would like to see me perform, please get in touch with Mike at 518 410 6823 or at mrb254@cornell.edu.

We thank the NY Apple Research and Development Program for funding this project!

Late Season Pest Considerations

Art Agnello, Cornell University, edits by Michael Basedow, CCE ENYCHP and Monique Rivera, Cornell University

With the start of harvest, there are just a few remaining insect pest management issues to keep in mind.

The primary concern at this point should be **internal leps**. With labor concerns and a good crop, fruit may hang on the trees longer than originally thought, and it is important to stay vigilant to protect the crop. There is usually a third "flight" of codling moth, which normally doesn't result in larval populations of any consequence, but this year's extended stretch of favorable temperatures may carry that generation's development further than normal.

Therefore, to be cautious, we shouldn't rule out the possibility that blocks with a history of internal worm problems might need a lastminute application of an appropriate-length PHI material to help stave off the final feeding injury caused by young larvae. Before the harvest period begins in earnest, a fruit examination could help determine whether the last brood of any of the likely species needs a final deterrent before the sprayer is put away. Potential choices (and PHIs) include Altacor (5/10 days, pome/stone fruits, respectively), Assail (7 days), a B.t. (0 days), Delegate (1 day, peaches; 7 days, apples/pears/plums), Exirel (3 days), Besiege (21/14 days, pome/ stone fruits, respectively), Minecto Pro (28/21 days, pome/stone fruits, respectively), a pyrethroid (PHI varies), or a sprayable pheromone (0 days), as applicable.

Apple maggot adults are continuing to emerge in portions of ENY. Should they be needed, possible late-season options include Assail, Imidan (both 7 days), Altacor (5 days), Avaunt (14 days), Delegate (7 days), Exirel (3 days), and various premixes and pyrethroids.

Stink bugs - Keep an eye on your traps and trees on the orchard perimeter to prevent late season fruit damage. You can use either black pyramid or clear sticky panel traps; the clear sticky panel traps are less costly and easier to install/remove/ scan. A 10 adult per trap threshold has been determined for black pyramid traps. There isn't a clear threshold for clear panels, but it appears to be much lower than the black pyramids (<5).



Clear panel trap used for catching stink bugs. Photo: Steve Schoof, NCSU

When thresholds are exceeded, or stink bugs become visible along the orchard edge, applications should begin. Border-row applications



9-Apr

29-Apr

19-May

8-Jun

28-Jun



7-Aug

18-Jul

27-Aug

28-May Weekly trap counts from our Saratoga and Clinton county oriental fruit moth and codling moth traps.

18-Jun

9-Jul

7-May

16-Apr

should be the first line of defense, followed by alternate-row applications, and finally whole orchard applications. Whole-orchard applications should be made if nymphs are found further within the orchard. Review your options carefully with regards to harvest dates, PHIs, re-application intervals, and seasonal a.i. amount maximums. Typically for BMSB, pyrethroid insecticides work best. Brigade 2EC and Brigade WSB were approved for statewide registration in New York in 2022. Both have been approved for use on apple against stink bugs and other apple pests. Please note, while other biftenthrin containing insecticides may be on the market as generic formulations, Brigade 2EC and Brigade WSB are the only two we currently know that are registered statewide for BMSB on apple. Other products have not been registered for this use at this time. As always, check the label before use to make sure. Other management options can be found in the Cornell Guidelines. These other products consist mostly of the pyrethroids or some pre-mix products. Most of these products are rated as moderate efficacy. A full list of materials is available on pages 149 and 150 of the Cornell Tree Fruit Guidelines.

A couple of less common last-minute pests can surface in certain cases. One is western flower thrips, particularly in nectarines growing in drought-stressed areas. Adults move from alternate weed or crop hosts to fruit just prior to and during harvest, feed on the fruit surface in protected sites, such as in the stem end, the suture, under leaves and branches, and between fruits. This results in silver stipling or patches; injury is particularly obvious on highly colored



External (left) and internal (right) damage to apple fruits due to BMSB feeding. Photo: Douglas C. Pfeiffer, Virginia Tech.

varieties. An application of Delegate or Entrust immediately before the first harvest may prevent subsequent losses;



Western flower thrips adult. Photo: E. Beers

20-Aug

10-Sep

30-Jul

however, an additional application may be needed if pressure is severe. The PHI varies from 1 day (peaches and nectarines) to 7 days (plums and prunes) to 14 days (apricots). Other options include Besiege, Endigo, and Voliam Flexi.

The black stem borer ambrosia beetle can still be found playing out its final few weeks of flight, although the literature indicates that this brood is probably not responsible for new infestations, so any direct treatments for this species probably should be deferred until next spring. However, it's not too early to begin removing any dead and



dying trees having confirmed infestations, to eliminate them as a potential source of attacks next year. Pull out the roots as well, and burn all affected wood.

Leaf damage caused by pearleaf blister mites. Photo: Art Agnello

Another season-end problem that may deserve consideration

now is **pearleaf blister mite**, a sporadic pest of pears that shows up in a limited number of commercial pear orchards and is a fairly common problem in home plantings. The adults are very small and cannot be seen without a hand lens; the body is white and elongate oval in shape, like a tiny sausage. The mite causes three distinct types of damage. During winter, the feeding of the mites under the bud scales is believed to cause the bud to dry and fail to develop.

This type of damage is similar to and may be confused with bud injury from insufficient winter chilling. Fruit damage is the most serious aspect of blister mite attack. It occurs as a result of mites feeding on the developing pears, from the green-tip stage through bloom, causing russet spots. These spots, which are often oval in shape, are usually depressed with a surrounding halo of clear tissue. They are 1/4-1/2 inch in diameter and frequently run together. A third type of injury is the blistering of leaves (Fig. 2); blisters are 1/8-1/4 inch across and, if numerous, can blacken most of the leaf surface. Although defoliation does not occur, leaf function can be seriously impaired by a heavy infestation.

For those plantings that might be suffering from this errant pest, a fall spray is recommended sometime in early October, when there is no danger of frost for at least 24-48 hr after the spray. Options include Sevin XLR Plus (1.5–3 gt/A) or 80S (1.88–3.75 lb/A); alternatively, next spring during the dormant period you can use Diazinon 50WP (1 lb/100 gal) plus 1–1.5% oil.

Looking for More Tree Fruit IPM Resources?

For additional apple IPM information, we highly recommend reviewing the videos available at https://www.youtube.com/ playlist?list=PLoNb8lODb49vifrm9Tla4GmAVhlIL0527

For stone fruit IPM information, visit our video playlist on Youtube at https://www.youtube.com/playlist?list=PLk2Qbw9Aiu5NUJa7IwI Obs1V5-RSUGb

Visitor Food Safety Policies for a Successful Pick-Your-Own Season Elisabeth Hodgdon, CCE ENYCHP

With pick-your-own (PYO) apple season upon us, customers are eager to get outdoors and enjoy the fall season and orchard scenery. Welcoming visitors to the orchard requires many advanced preparations to ensure a positive experience for both customers and employees. Food safety considerations should be included in these preparations as well. In this article, I review visitor requirements for farms covered by the Food Safety Modernization Act (FSMA) Produce III customers Safety Rule, as well as best management practices to reduce microbial contamination in PYO orchards.

Visitor policies

Does your farm have a visitor policy? FSMA considers PYO customers and school groups entering the farm property to be visitors. Farms covered by FSMA must make sure that visitors are aware of their policies. To do this, you could post your policy at the entrance of the orchard or check-in station for PYO. It's also a good idea to post your policies and expectations for customers online. This helps make sure that customers aren't surprised when they arrive. For example, a visitor should know not to bring their dog along to the orchard when your policy prohibits pets in production areas.

What should be included in the food safety policy, and what are the objectives you are trying to achieve? Following your policy should ensure that customers have a safe experience while minimizing food safety risk. Basic food safety items in the policy should include:

- 1. An advisory for customers to stay home if they are feeling ill
- 2. Wash hands prior to picking
- 3. Use provided restroom facilities, and wash hands afterward
- 4. Pets are not allowed in the orchard

Signage reminding customers to stay home while ill can help prevent both foodborne illness and COVID transmission. Customers experiencing stomach pain, diarrhea, fever, cough, sore throat, and/ or vomiting should not visit the farm.

Restroom and handwashing facilities

Toilets and handwashing facilities must be accessible to PYO customers if you are subject to FSMA. Consider the flow of traffic and set up portable toilets and handwashing stations at the entrance to the orchard. Avoid requiring customers to take long walks to find toilets. Post signs in the orchard directing customers toward the restrooms and prohibiting use of the nearby woods/fields as an alternative spot to "go to the bathroom." A restroom facility inside a farm store may suffice for small operations as long as it is immediately accessible from the orchard. If your farm has a petting zoo, provide handwashing stations at the zoo exit and encourage (Continued on page 8)

(Continued from page 7)

customers to visit the zoo after (not before) picking their apples.

Check regularly and restock supplies such as soap and toilet paper as needed, especially on weekends when the orchard is busy. Provide trash cans next to toilets and handwashing stations for paper towels and other garbage, and dump it regularly. Assign these tasks to specific employees and provide a standard operating procedure and checklist to help ensure that the job is completed consistently. Be sure that the handwashing stations are refilled with potable water, and check with your portable toilet provider to be sure they are following your expectations for service. Keep your portable toilet provider's phone number handy if immediate service is needed (e.g. the toilet tips over or something breaks). Install pictorial signage near sinks to remind customers to wash their hands with soap and water for at least 20 seconds. Laminated bilingual signs are available for purchase from the National Good Agricultural Practices website (see "sources" below).

Keep in mind that handwashing stations do not need to be expensive. Simple, do-it-yourself handwashing station designs are available using readily available materials. See "sources" below for more details.

Pets in the orchard

Pets pose safety risks on farms for multiple reasons. They can contaminate produce with pathogens. Pets can frighten livestock, petting zoo animals, and other customers. As a farm owner, you are not obliged to let customers bring their pets (non-service animals) onto the farm. A "no pets" policy should be posted predominantly at the farm and online. As a compromise, some farms have opted to create a dog park or designated area for pets away from production areas.

If a customer brings a service animal onto the farm, you may legally ask only two questions:

- 1. Is the service animal required because of a disability?
- 2. What work or task has the service animal been trained to perform?

The rights of individuals with disabilities and their service animals (dogs and ponies) are covered by the Americans with Disabilities Act (ADA), while comfort and emotional support animals are not. Legally, you may not ask the individual to disclose their disability or show you documentation proving the service animal's status. If a customer with a service animal comes to the farm, be sure to advise them on specific policies regarding service animals, including where they may be allowed on the farm.

Ensuring policy success

At the start of the season, all employees should be trained and familiarized with the policy and your expectations for facility maintenance. A visitor policy should be revisited annually, preferably at the end of the season when issues are still fresh in the mind. The policy should be revised as needed and updated in the farm's food safety plan. Each farm is unique, and your policy should be

personalized to reflect your own operation's food safety risks and other considerations.

Sources and Additional Reading:

"No Pets Allowed" and Other Rules for a Berry Safe Pick Your Own Experience, by Connie Fisk, former Produce Safety Alliance Regional Extension Associate. <u>https://</u>

conniefiskfoodadventures.wordpress.com/2019/03/01/no-petsallowed/

Improving Handwashing Stations, by Chris Callahan and Andy Chamberlin, UVM Extension. <u>https://blog.uvm.edu/</u> <u>cwcallah/2020/06/09/improving-handwashing-stations/</u>

National Good Agricultural Practices Program Educational Materials, including links to purchase laminated handwashing and toilet use signs. <u>https://gaps.cornell.edu/educational-materials/</u>

Are You Required to Let the Public Bring Their Animals Onto Your Retail Farm?, by Wes Kline and Meredith Melendez, Rutgers University. <u>https://plant-pest-advisory.rutgers.edu/are-you-required-to-let-the-public-bring-their-animals-onto-your-retail-farm/</u>



Pick-your-own check in station with handwashing stations and visitor policies prominently displayed. Photo: E. Hodgdon

Monkeypox: CDC Guidance for Farm Worker Housing

Richard Stup, Cornell Extension

COVID has been tough, and the last thing any of us need is a new disease. Unfortunately, Monkeypox is circulating in the population. The U.S. Centers for Disease Control and Prevention (CDC) has posted <u>guidance about Monkeypox</u> to their website. CDC indicates the disease is spread through close contact, including: direct contact with a rash, respiratory secretions, and through contact with shared fabrics like clothing, bedding, or towels. For these reasons, CDC gives particular guidance for <u>congregate housing settings</u>, which would include farm worker housing in many cases. Employers who operate farm worker housing should <u>review CDC guidance</u> on issues such as: communications with employees, responding to cases, identification of cases, handwashing, cleaning and disinfection, and personal protective equipment. This is particularly important as new workers arrive for fall harvest and housing population densities increase.

Please take steps now, such as communication and increased sanitation measures, to prevent the spread of Monkeypox among the farm workforce.

Dr. Kaitlyn Lutz from the CCE's Northwest New York Dairy, Livestock & Field Crops Team produced flyers in English and Spanish for producers to use for communication with employees.

Monkeypox Flyer in English Monkeypox Flyer in Spanish

In addition, the <u>Institute for Food Safety at Cornell</u> <u>University</u> developed a <u>Monkeypox Factsheet for the Food</u> <u>Industry</u>. You can also find the factsheet under the resources page on the IFS@CU's website.

How-To Video on Apple Maturity Testing for Long-Term Storage

Michael Basedow, and Andy Galimberti, CCE ENYCHP

Your apple harvest should be timed to provide the best quality fruit to your specified market. While fruit destined for immediate sales and eating can be picked for optimal color and flavor, fruit destined for long-term storage need to be picked while less mature, to prevent the fruit from being over-ripe when they reach the consumer.

To help determine when your blocks are ready to be harvested for long-term storage, there are a few maturity metrics you or an employee on your farm can test, including fruit firmness, brix, and the starch pattern index.

If you would like a brush up on the basics of these tests, or would like to train some of your new employees, we developed a short training video demonstrating how to perform these tests on the farm to help key-in on your optimal harvest windows.



The video can be viewed on the ENYCHP YouTube channel at the following link: <u>https://www.youtube.com/watch?v=V6WjbQ2v6w0</u>

Please Fill Out Our Statewide Survey on the Use of Beneficial Fungi in NY Orchards Michael Basedow, CCE ENYCHP, Mario Miranda Sazo, CCE LOFP, and Jason Londo, Cornell University

Extension Specialists and researchers of Cornell ENYCHP, Cornell LOFP, and Cornell AgriTech are launching a statewide effort to better understand the role commercially available mycorrhizal fungi products could play in promoting early tree growth in the nursery and at orchard establishment.

Many species of beneficial mycorrhizal fungi form symbiotic relationships with plant roots, including apple. These fungi greatly increase the surface area of the roots, allowing trees to take up more nutrients and water from the soil when these are limited in the field. Some previous studies have found mycorrhizal fungi also increase apple tree resistance to nectria canker. Mycorrhizal fungi occur naturally in our soils, but there are also commercially available formulations of mycorrhizae that can be incorporated at the nursery and during orchard planting. We are curious to know if incorporating these commercial products may improve tree survival

and growth, and help trees take up nutrients and water more efficiently, possibly allowing growers to reduce the amount of fertilizer and irrigation required to grow a high quality crop.

Before we move this work forward, we would like to hear from you! We would like to know your interest in using these products, and what questions you would like us to research so that we can better identify barriers to their use, and develop a project that best addresses these barriers.

The survey should take under five minutes to complete, and is anonymous. You can complete it by clicking on the following link:

https://cornell.ca1.qualtrics.com/jfe/form/SV_2rEeIIPOuC2mifs

If you'd like to discuss mycorrhizal inoculants more in depth, please get in touch with Mike at 518 410 6823 or at mrb254@cornell.edu.

How Profitable Will My New Orchard Investment Be?

Elizabeth Higgins, CCE ENYCHP, Farm Business Management

Should I stay or should I go now? If I go there will be trouble. And if I stay there will be double. So you gotta let me know. Should I stay or should I go? – The Clash

Tree fruit farmers who are looking to the future always have an array of potential investment decisions for new orchard systems to choose from. Do you invest in new varieties, new planting systems, robotics, more labor, new equipment? How do you decide?

Sometimes there are projects that are obvious winners or obvious dogs. But unfortunately, most of the time there isn't a single solution that is the best solution for every farm. For example, your choice could depend on your planning horizon, a farmer looking to sell and retire in the next 5 years might make different investment decisions than a farmer planning to transfer their farm business to their next generation during that period. The farmer looking to sell only wants to make investments that will enhance the final sales price but the farmer looking to transfer the business will be making investments that will allow the business to thrive in the future. Some farms have a lot of cash on hand or have had an unusually good income year and are looking for longer term capital investments. Other farms need to finance capital projects with loans and are concerned about cash flow. Labor may be more of a constraint on some farms than others.

The one thing that <u>all</u> farmers looking to make investment decisions need is the tools and skills to make financial projections. The Eastern NY Commercial Horticulture Program and the Lake Ontario Fruit Team will be holding a series of one-hour lunchtime webinars in December, that will cover the key financial concepts a manager should understand. All webinars will be recorded and additional supporting information will be provided.

Schedule of Webinars, all webinars from 12:30-1:30

12/2 Friday: Using Excel for Financial Analysis and Class Resources for this Program.

12/5 Monday: Best Practices for Using Financial Data for Financial Analysis.

12/6 Tuesday: Farm Financial Statements.

12/7 Wednesday: Calculating Profit.

12/8 Thursday: Common Financial Ratios Based on Financial Statements.

12/9 Friday: 5 Step Decision Making Process for Managers.

12/12 Monday: Cost Volume Profit Analysis. As you change your prices, volume of sales or costs of production how does your profit change?

12/13 Tuesday: Operating Budgets and Strategic Planning

12/14 Wednesday: Enterprise Budgets and Sensitivity Analysis

12/15 Thursday: Decision Making and Relevant Information – we will explain which costs and benefits are relevant and which are not—and how you should think of them when choosing among alternatives. 12/16 Friday: Capital Budgeting - the process of making long-run planning decisions for investments in projects.

The webinars will be followed by a one-day, in-person class held at 5 locations around the state this winter to practice applying the concepts learned in the webinars, using tree-fruit scenarios. Using tree-fruit farm scenarios from the region, you will practice applying the financial management skills you learned in the webinars. Participants will be able to test various new orchard scenarios with different varieties, orchard systems, and risk-reducing technologies for profitability, payback period, and return on investment.

You will leave the class with a set of Excel spreadsheets that you can use with your own farm data, a workbook with resources, and a better understanding of how your farm's financial information can be used to make better management decisions.

The dates and location for these classes will be set this fall. For more information: Contact Liz Higgins, ENYCH Farm Business Management (<u>emh56@cornell.edu</u>)

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The Eastern New York Commercial Horticulture Program is a Cornell Cooperative Extension partnership between Cornell University and the CCE Associations in these seventeen counties: Albany, Clinton, Columbia, Dutchess, Essex, Fulton, Greene, Orange, Montgomery, Putnam, Rensselaer, Saratoga, Schenectady, Schoharie, Ulster, Warren & Washington.