

LAURA MCDERMOTT, ENYCHP

Thompson Finch Farm is nestled near the Roeliff Jansen Kill in Ancram, NY in the southeast corner of Columbia County. It's a lovely farm with good silt-loam soils that has been in Marnie McLean's family for five generations. The farm was originally purchased in 1859 by William and Catherine Thompson and was transferred primarily through the women of the family. When Marnie's parents purchased the farm in 1982 Don and Marnie moved from Vermont to begin farming in Ancram. They planted the apple orchard that year and continued expanding the farm with strawberries and blueberries and grew lots of melons and other produce for about 10 years. During that time they realized that strawberries were a significant profit center so they have been building that portion of the business and now have 15 acres devoted to strawberry production. They also farm 1 acre of blueberries, 1.5 acres of apples, 1.5 acres of potatoes and carrots and lease hay ground. They continue to grow heirloom tomatoes in high tunnels. Don and Marnie have been focused on organic production systems and have been certified with NOFA-NY for over 25 years and are one of the only certified organic berry farms in the state.

Thompson-Finch Farm is perhaps best known for their organic U-Pick berries. The heirloom tomatoes, potatoes and carrots that they grow are primarily sold through well-established wholesale markets in the Ancram area. These are local stores and co-ops and a few CSA's including Camphill Village, a community living center for people with special needs. The apples that are grown at Thompson Finch are sold to the Hawthorne Valley CSA. Thompson Finch presells the fruit share which includes apples, strawberries and cider apples that is then added to the veggie share. Don and Marnie have never had

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Cornell Cooperative Extension

Eastern NY Commercial Horticulture Program

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The Produce Pages is a monthly publication of the Eastern New York Commercial Horticulture Program. For more information about the program and our events, please visit our website at : http://enych.cce.cornell.edu/.

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Strawberries Picked from this month's Featured Farm: Thompson Finch Farm

Serving the Educational and Research Needs of the Commercial Small Fruit, Vegetable and Tree Fruit Industries in Albany, Clinton, Columbia, Dutchess, Essex, Fulton, Greene, Montgomery, Orange, Putnam, Rensselaer, Saratoga, Schoharie, Schenectady, Ulster, Warren and Washington Counties their own CSA but are able to offer value to Hawthorne Valley's CSA and still be involved in that type of personal marketing with the consumer.

Don and Marnie admit that they haven't made as many changes to the farm in terms of infrastructure as they might have if there had been certainty about ownership.



Don and Marnie's Farm Stand

Although they have been on the farm for 35 years, they just recently purchased the entire farm from the remaining family. They were able to do this in the spring of 2017 when they joined forces with the Columbia Land Conservancy (CLC) and Equity Trust in Amherst, MA. The long range goal is to have the property be available for future farmers. They have launched a fund-raising campaign to allow them to complete the purchase of the land, which will ultimately be owned by CLC the through an agreement with the Columbia Land conservancy and Equity Trust in Amherst. For more information about that campaign, please visit http://clctrust.org/wp-content/ uploads/2017/05/tff brochure.pdf.

Beyond the immediate challenge of designing the long term plan for the farm and themselves, Don and Marnie have similar production challenges as other farmers. Foremost on their minds is an increase in strawberry leaf spot as existing organic materials require many applications to achieve reasonable control. Jewel has been the backbone of their system for many years, despite its disease susceptibility.

In order successfully manage strawberries organically, the McLean's plant dormant crowns of June bearing strawberries in the spring, then cultivate to keep weed growth controlled. They fruit the plants for one year and then till them in and cover crop for several years before they reintroduce strawberries. They use dwarf rape for their cover cropping.

Cornell Cooperative Extension has always been their first call for troubleshooting production problems. Steve McKay was their first contact with extension - since then Chuck Bornt has had PAGE

Potato trials on the farm and they have had help with small fruit and other questions from several other ENYCHP specialists.

Aside from the typical problems of farming, the McLean's really value living in an area that is uniquely perfect for a smaller scale, high value grower. The greater Ancram community values organic food and appreciates their efforts. They enjoy not having to drive hours to market

their produce. They realized years ago that people in their area really wanted to pick fruit! That allows both of them to stay on the farm – a good thing as they are the only full time employees. They do hire two part-time summer employees. Thompson Finch Farm has avoided agri-tourism completely. Their U-Pick is just about selling food to people that will need to pick it themselves.

Labor has also been a challenge. The expectations of an employee is a personal thing. The internship model didn't work for them – they couldn't take enough time to make sure the interns had the appropriate education, so the traditional paid employee was a better fit. As a couple, the complement each other in terms of skills. Don is a good mechanic so they haven't had to hire that out. And bookwork, field labor, marketing are all things that they can share. This has allowed them to keep the business at a scale that kept them from needing to borrow money. Their current scale allows them to

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Frost Protection at Thompson Finch Farm THE PRODUCE PAGES

enjoy the work and make enough money that neither of them needs to work off the farm.

A period of concern about farm ownership caused Don and Marnie to buy a farm in Puerto Rico about 10 years ago. They fell in love with the island and its people. Their farm there has is 11 acres where they grow citrus, coffee, plantain's and bananas. They haven't been there long enough during the winter season to start growing vegetables. It's an amazing climate that can grow anything except temperate fruit – and until the recent devastation of Hurricanes Irma and Maria it has been a true escape.

Marnie and Don have worked with several other interested farmers and business people (myself included!) to create a nonprofit called Amigos de Puerto Rican Eco-Farmers (APREF). APREF is currently accepting donations to help provide minigrants to help food farmers on the island get back on their feet. The need is enormous. To discover more about APREF and to donate please visit: <u>https://</u> www.amigosdepuertoricaneco-farmers.org/

When asked about advice that they would give to new growers, Marnie responded to be careful about borrowing money. Especially before you know what you are doing.

Don's advice is similarly cautionary - *Work into the idea that you are never going to completely know what you are doing – you will always* **be learning and experimenting.** It took them almost 2 decades to get to the system they are using now.

When asked about what they least enjoy about farming employee management was mentioned. It is especially difficult when there is not a deep labor pool. The stress of having to manage other people is tough for two individuals that clearly enjoy working by themselves. But both of them like the freedom of self-employment, and Marnie mentioned that she really enjoys doing some of the tasks that are seen as tedious. She likes to hoe and weed even for hours at a time and really loves being outdoors. In counterpoint, Don recognizes that the bureaucracy of farming is difficult, but he likes the challenge. Don says "We spent our lives doing things we didn't know how to do." And it seems that they have been very successful in doing so.



Upcoming ENYCHP Events

February 8th, 2018– Growing Alliums for Storage and Long-term Sales Ballston Spa, NY. Register Here: <u>https://enych.cce.cornell.edu/</u> event.php?id=880

February 20-21, 2018- Eastern New York Fruit and Vegetable Conference. The Desmond Conference Center, Albany, NY. More information and Registration: <u>https://enych.cce.cornell.edu/</u> event.php?id=881 **February 28, 2018–** *Orange County Onion School.* Orange County CCE. Bundle rate available with March 1st, Grower PSA Training! More info and Reg: <u>https://enych.cce.cornell.edu/events.php</u>

Beginning March, 1 2018– Good to Great: Ag Labor Management Highland NY. Four part series! More Info Here: <u>https://enych.cce.cornell.edu/</u> events.php

Cider Apple Supply Chain Analysis Results Presented at Expo MICHAEL BASEDOW, EYCHP



On the last afternoon of the 2018 Empire State Growers Expo, the Cornell Cooperative Extension's Hard Cider Program Work Team held a hard cider session that included talks and a tasting. Lindsey Pashow of Cornell's Harvest NY program presented on the Hard Cider Apple Supply Chain Analysis, a collaborative survey between Cornell, the New York State Apple Association, and the New York Hard Cider Association. The survey was sent to apple growers, cider makers, and nurseries in the spring of 2017, and asked participants about the sourcing of apples for New York's growing hard cider industry.

Cider makers reported 36% of the ingredients used in their ciders consisted of apples produced by their own operations. The remaining ingredients consisted of purchased apples (22%), purchased juice and juice concentrate (39%) and 3% other ingredients, which included ingredients like spices, syrups, and hops. Of the purchased apples and juices, 31% consisted of acidic dessert apples (e.g. McIntosh, Cortland, and Macoun). 30% consisted of sweet dessert cultivars (e.g. Fuji, Gala, and Honeycrisp), 14% were heirloom dual purpose apples (e.g. Newtown Pippin and Golden Russet), and the remaining 19% were specialty cider apples (e.g. Dabinett, Yarlington Mill, and Porter's Perfection).

58% of responding orchards reported selling apples to cider makers. The average price per bushel received was \$11.33. As a comparison, their reported average wholesale price was \$16.69 per bushel, and the average processing price was \$3.93 per bushel. The largest acreage of apples planted for use in cider were in the acidic dessert group on 2318 acres, followed by the sweet dessert group on 1732 acres. Heirloom dual purpose were planted on 110 acres, while the bittersweets and bittersharps were each planted on 45 acres, respectively. Orchards planned to increase their plantings of apples for cider, with the most planting being concentrated on the specialty bittersweet and bittersharp cultivars.

The most widely planted specialty cider varieties planted by acreage included:

Dabinett Kingston Black Porter's Perfection Harry Master's Tremlett's Bitter Brown Snout Ellis Bitter Chisel Jersey Michelin Brown's Apple

The survey concluded that there is currently high demand for specialty cider fruit, and they remain difficult to source. While respondents reported their acreage will continue to increase in the next three years, growers are still concerned over fire blight susceptibility of the specialty cider cultivars, the return on investment for growing these fruit, and their future market demand compared to fresh fruit.

The full report of the analysis will soon be available on the CCE Harvest New York website at <u>https://</u> <u>harvestny.cce.cornell.edu/</u>. If you would like more information on cider production in New York, or would like to take part in a future survey, please email Lindsey Pashow at lep67@cornell.edu. For more information on growing cider apples in Eastern New York, contact Mike Basedow (mrb254@cornell.edu) or Dan Donahue (djd13@cornell.edu), and visit the Cornell Hard Cider Page at <u>http://hardcider.cals.cornell.edu/</u>.

Tunnel Best Management Practices for Long Term Soil Health

and Fertility

JUDSON REID & CORDELIA MACHANOFF, CCE CORNELL VEGETABLE PROGRAM

These best management practices were selected by experienced high tunnel growers and extension staff as a result of a four year project tracking economic, soil and irrigation water data from high tunnels across New York State. They can be used remedially, or implemented in a new high tunnel system.

Soil test annually and keep track of trends in major nutrients (112)

Nutrient levels can shift quickly in high tunnel soils. Fertilizers are often over applied or contain non-target nutrients, leading to nutrient imbalances that impact yields. Keeping track of these levels is a key practice to maintaining productive tunnel soils. An annual soil test and knowing how to manage fertility in response to changing nutrient levels can help prolong the productivity of high tunnel soils.

- Perform an annual soil test at the same time each year with the same lab.
- Keep records of nutrient levels, especially phosphorus and calcium.
- Avoid fertilizers that contain phosphorus and calcium, especially when soil levels are high.
- Test amendments such as composts for these nutrients prior to application.

Actively address and manage soil pH, and irrigation water pH and alkalinity (158)

Over half of the tunnels we tested have soil pH higher than 7.0, while the optimal pH range for most crops is between 5.5 and 6.5. Outside of this range, micronutrients become less available to the plants and can lead to deficiencies in the crop. Keeping track of soil and water pH levels and managing fertility with

these levels in mind is crucial for long term tunnel productivity.

- Test soil pH and irrigation water pH and alkalinity • annually and keep track of changes over time.
- If either pH is higher than 6.5 and/or seems to be • rising over time, consider mitigation efforts.
- Apply elemental sulfur to soil in the fall or spring. •
- Add sulfuric or citric acid to irrigation water with an injector throughout the growing season.
- Leave plastic off for a season to mitigate high pH • soils, precipitation is naturally slightly acidic.
- Check the pH of any amendments, weigh the benefits against potential impact on soil pH.

Add Organic Matter (134)

Given the intensive nature of high tunnel growing, incorporating organic matter back into high tunnel soils is essential to maintain soil health and productivity. There are a number of effective methods, and some pitfalls to be avoided when aiming to increase organic matter levels.

- If organic matter levels are decreasing on soil tests, start adding organic materials to the program.
- Mulch aisles between rows with straw, and turn it in at the end of the season to decompose.
- Amend soil with peat moss, which has a low pH level and does not contribute additional nutrients.
- Incorporate cover crops into the tunnel rotation. More research is needed on the benefits to high tunnel soils of





Regular soil and foliar testing can lead to increased net revenue. Photo: Judson Reid, CCE Cornell Vegetable Program

growing a cover crop.

• If compost will be used, test for pH, salt level and nutrient content prior to application.

Foliar test the crop and respond to the results

Foliar testing is key for making sure your crop is getting the necessary nutrients from the soil or fertility amendments and avoid overloading high tunnel soils with excessive inputs. Foliar testing your crop will give you an inside look at how your plants are doing before symptoms arise.

What to Do After a Bad Sclerotinia White Mold Season JULIE KIKKERT, CCE CORNELL VEGETABLE PROGRAM

Wet weather during the 2017 growing season was conducive to many diseases, particularly white mold, caused by the fungus Sclerotinia sclerotiorum. This disease can infect nearly every vegetable crop except monocots such as sweet corn and alliums. In New York, it is regularly seen in snap beans, dry beans, lima beans, soybeans and cole crops. Tomatoes, potatoes, lettuce, pumpkins, hubbard and other winter squash are also common hosts. White mold can also be seen on weed hosts such as velvetleaf and ragweed.

The first symptoms are often bleached, water soaked spots. As the fungus grows, white cottony mycelial strands appear, hence the name white mold. The fungus may grow on the outside of the plant, or may be hidden inside stems or seed pods. Sclerotinia sclerotiorum is distinguished from other molds by mounds of fungal mycelium that harden and darken into black sclerotia embedded in the cottony mycelium (see photo).

The sclerotia drop to the soil and much like weed seeds, they can remain in the soil waiting for the right conditions to germinate and become a problem in subsequent years. When the soil conditions are moist, shaded and cool (40 to 60°F) the sclerotia at or just below the soil surface produce tiny mushrooms called apothecia that release spores into the air. Senescing blossoms are a particularly good source of nutrients for the germinating fungal spores. Sclerotia in contact with roots or crowns of plants can also infect tissue directly.

- Check with your local Cooperative Extension office for reputable labs in your state.
- Sample two weeks post-transplant and then every 2-3 weeks throughout the growing season. Collect 5-10 of the youngest fully mature leaves from one variety and send to a lab for analysis.
- The lab should provide you with macro and micronutrient levels and recommended ranges for each nutrient, and your local extension agent can help with interpretation of the data.



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Different stages of white mold infection on lima bean pods. Note the mounds of fungal growth that turn into hard black sclerotia. This is diagnostic for this fungus. Photo: J. Kikkert,

What to do if you detect a white mold infection:

- It is too late to apply fungicides once the fungus is detected
- Rogue out infected plants if possible to prevent the formation of sclerotia
- Take and keep accurate notes about which fields or portions of fields are infected and how much white mold is seen. Record disease and yield data for different crops and varieties on your farm to help in future planning.
- Harvest infected fields last to avoid spreading sclerotia to non-infected fields.
- Tillage current research supports the hypothesis that sclerotia degrade faster if left on the soil surface. continued on next page

Deep tillage buries sclerotia initially, but they are brought to the surface with subsequent tillage and may cause infection.

- Consider the use of the biocontrol fungus, Coniothyrium minitans, commercially available as Contans. This fungus is a parasite of sclerotia and degrades them. It takes several months to work and when there are a lot of sclerotia from an infested field, it is best applied to the surface of the soil after harvest, with no or little tillage to follow. Used at a rate of 2 lbs/acre, the product costs about \$50 per acre. It will not completely eliminate white mold infection in future years, but can reduce the level of inoculum and subsequent crop damage.
- Plant only non-susceptible cover crops such as grasses and grains. Red clover and other legumes are hosts.

ADDITIONAL STEPS FOR FUTURE YEARS

- Crop rotation with grains and corn or other nonhosts for three or more years
- Plant disease-free seed
- Avoid fields where infected plant debris, such as cabbage leaves and winter squash were dumped.
- Manage plant canopies to improve air-circulation.
- In high risk situations, fungicide sprays to beans during the bloom period may be warranted. Check the Cornell Guidelines for more information and always read and follow product labels.
- Watch for additional information at our winter meetings.

Thanks to Sarah Pethybridge, Amara Dunn and Carol MacNeil from Cornell for resource information for this article. Origannaly Printed in *VegEdge*, *12/1/17*

Evaluations of Organic Integrated Pest Management Options for Late Blight and Bacterial Diseases in Tomatoes

Late Blight trial reports by Darcy Telenko and David Ludwig, CCE Cornell Vegetable Program, from VegEdge, 1/1/18 and by bacterial disease control reports Dr. Chris Smart and Holly Lange from the EXPO proceedings, 1/16/18. Edited by Crystal Stewart

This year some exciting work evaluating organic IPM strategies for tomato disease management was started in Western New York. Darcy Talenko and David Ludwig completed a first year of trial/demonstration work with varieties and organic products for late blight control; and Dr. Christ Smart and Holly Lange completed a first year of trialing products to control bacterial diseases (there are not yet fresh market varieties resistant to bacterial diseases in tomatoes).

The following information is drawn from their research reports. We are looking forward to expanding this work to include more cultural considerations and more biopesticide options, as well as additional combinations. If you have ideas for treatments that should be evaluated, please let us know!

Late Blight IPM Trial Report (edited):

Late blight (Phytophthora infestans) has the potential to

significantly reduce tomato yields, especially for organic growers. We evaluated four organic spray programs and resistant varieties for ability to control disease and improve yield. Our objectives were:

1. Demonstrate the importance of using disease resistant cultivars.

2. Evaluate new biopesticides for organic tomato production.

By evaluating and demonstrating the importance of host resistance and evaluating new biopesticide fungicide programs for efficacy we aim to identify new tools that will be effective, and potentially reduce the number of copper sprays needed and slow the development of fungicide resistance. This will save growers time and money. Additionally, these trials allow us to monitor and detect the movement of these diseases into New York.

Organic fungicide programs and two cultivars of tomato were evaluated at the Cornell Lake Erie Research and Extension Laboratory (CLEREL), Portland, NY. Calendar sprays of each program were applied on 29 Jun, 13 Jul, 20 Jul, 2 Aug, 16 Aug, and 25 Aug and included:

- 1) Untreated
- 2) Standard copper spray (Badge X2 @ 1 lb/A)
- 3) Oxidate 2.0 (1.0%)

4) Standard copper spray (Badge X2 @ 1 lb/A) + Oxidate 2.0 (0.5%)

5) Serifel (4 oz/A) in-furrow on 7 June; foliar spray on 29 Jun, 20 July, 16 Aug; alternated with Copper (Badge X2 @ 1 lb/A) spray on 13 July, 2 Aug, 25 AugTomato cultivars included:

- 1. Polbig (susceptible to late blight)
- 2. Iron Lady (resistant to late blight)

Incidence of late blight were rated, approximately once per week after each disease was first detected. Late blight was first detected on 12 August. Fruit was harvested and weighed approximately once per week after first fruit-set reached maturity.

In tomato, all organic programs reduced disease compared to untreated, no significant differences between the fungicide programs were detected and

Report (edited)

Bacterial disease outbreaks have become an unfortunately common annual occurrence in tomato fields across New York. The three most common bacterial diseases of tomato in New York are bacterial canker, caused by Clavibacter michiganensis subsp. michiganensis, bacterial speck, caused by Pseudomonas syringae pv. tomato, and bacterial spot, caused by several species of Xanthomonas. It has been our experience that bacterial canker and bacterial speck are much more common than bacterial spot in New York. However over the past two seasons (2016 and 2017) bacterial spot has been found in several fields across the state. While copper can be effective in controlling bacterial diseases, it is difficult to control spread under conducive environmental continued on next page

there were no significant differences in yield between programs. Iron Lady exhibited season-long resistance to late blight and had twice the yield of Polbig.

These trials demonstrated the importance of utilizing disease resistance when available in organic tomato production. Host resistance is the best defense option for organic production. The organic fungicide programs helped to protect the crops, but overall were not as effective as resistance in Iron Lady tomato.

Editor's note: Fruition Seeds is conducting a limited release of a Brandywine cross with demonstrated Late Blight resistance. It's called Brandywise, and may be worth trialing on your farm.

Bacterial Disease Suppression Trial







Late Blight in untreated tomato demonstration plots Polbig (left) with 80% incidence and Iron Lady (right) with only 1% incidence.

The second



L: Bacterial Spot

C: Bacterial Canker

R: Bacterial speck on leaves and fruit

conditions particularly with wind-blown rain. Cultural practices are a critical component in the control of tomato bacterial diseases, and it is important to clean and disinfect anything that may have come into contact with plants. This includes greenhouse tables, benches, floors, hoses, flats, containers, pruning shears, trellising stakes and anything else that could come into contact with the plants. It is important to do thorough cleaning

even if you had no disease last year. Pathogens could still be present in the greenhouse or on trellising stakes from the previous season and spread to healthy transplants under optimal environmental conditions.

Symptoms of **bacterial canker** can include wilting of plants, and production of cankers on the stem, but the most frequent symptoms we see are curling of leaflets, browning of the leaflet margin and fruit symptoms. The disease can become so severe that total defoliation occurs. This bacterial pathogen can spread systemically through the xylem of a plant, so once a plant is infected there is little that can be done.

Bacterial speck has become a common problem on tomato in New York, and can spread rapidly during cool wet weather. Symptoms of bacterial speck can occur anytime during the growing season and include small (1/16-1/8 inch) dark brown to black lesions on

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leaflets and fruit. Foliar lesions are surrounded by a yellow halo, and can be confused with early symptoms of septoria leaf spot or early blight.

Bacterial spot thrives in warm (or hot) wet conditions, and is a huge problem annually in Florida and has devastated fields in many other states as well. The bacterium that causes bacterial spot continued on next page

2017 Bacterial Speck Trial

Treatment and Rate/A	Active Ingredient	Mean AUDPC* (disease over time)	
Unsprayed control		234.8 a**	
Regalia EC 4 qt	Reynoutria sachalinensis extract	174.5 b	
Double Nickel LC 32 fl oz	Bacillus amyloliquefaciens	166.3 b	
Actinovate AG 12 oz	Streptomyces lydicus	161.3 b	
LifeGard WG 4.5oz/100 gal	Bacillus mycoides	153.8 b	
Actinovate AG+Regalia EC		150.0 b	
Champ 30 WG 2.0 lb	Copper hydroxide	145.0 b	

*Area Under the Disease Progress Curve (AUDPC) reports the amount of disease over time, so a larger number means more disease **Values followed by the same letter are not significantly different. All products tested were significantly better than the unsprayed control, but were not statistically different from each other.

2017 Bacterial Canker Trial



Fruit with no disease lesions



Bars with the same letter are not significantly different.

on tomato can also cause bacterial spot on peppers. Symptoms are similar to bacterial speck, but lesions are larger and have a bit of a water-soaked or greasy appearance.

Editor: In order to conduct trials, Chris and Holly intentionally infect their tomato crop with bacterial diseases. This ensures that the crop is uniformly, highly infected. The results below show that there was no complete control for bacterial disease, which may look discouraging. But remember that the pressure was high and that no cultural controls such as sanitation or plant removal were used.

- Bacterial diseases continue to be an annual problem in NY
- Sanitation is key!
- No control products are completely effective, but there are products that are as effective as <u>copper</u>
- Some resistant varieties are available, and breeders are working increase the number of varieties with resistance to speck and spot

Growing for Wholesale: Grading and Packing Guidelines by Crop

Cheryl Thayer, CCE Harvest New York; from VegEdge, 12/1/17

Grading and packing guidelines are now available for 16 commonly grown specialty crops in NYS: broccoli crowns, Brussels sprouts, corn, green peppers, cucumbers, green cabbage, red cabbage, savory cabbage, cauliflower, eggplant, green beans, jalapenos, poblanos, Hungarian hot peppers, summer squash, and zucchini. Find all 24 sheets online at https://cvp.cce.cornell.edu/submission.php?

Acceptable quality standards and common defects that should be sorted out on the grading line are depicted in these resources, both visually and in outline form.



WIII I Make Money Growing Tomatoes?

but yields are more in your control with the varieties you choose and the production practices you use.

2. Consider the full costs of serving different markets. A farmer's market price may be higher than a wholesale price (in general wholesale prices are 60-70% percent less than the retail price of tomatoes).



So a \$3.50/lb tomato in the store would be a \$1.40-\$1.05/lb to the farmer. However, a farmer may be able to sell 100% of their tomatoes to a wholesaler with little staff time and labor compared to selling the same volume at 3 farmers markets with staff time, travel costs.

Consider the following scenario. A farmer has

Many growers are attracted to tomatoes because of the relatively high market prices and consistent customer demand. If you are new to tomato production let's look at a few of the factors that can help make you successful.

 Grow the right varieties. There are so many interesting varieties of tomatoes that it can be daunting to pick the right ones. Many growers are attracted to heirloom or more interesting varieties. However – some of these varieties are more prone to diseases, deformity or just have lower yields. If you lose <u>a</u> high percentage of your crop to disease, cracking and other deformities, then you have fewer tomatoes to sell. Fewer units means less profit. If you are growing a lower yielding variety make sure that it consistently attracts a much higher market price that can compensate for the lower yields. two possible markets for the same volume of tomatoes: farmers markets and a wholesale market. Assume that the farmer goes to three markets per week during the tomato season (12 weeks) or 36 markets. Each market requires one staff person for 10 hours (packing, driving, marketing, and clean-up) at \$15/hr with salary and benefits. The markets are each 100 miles from the farm. The total cost for marketing is about \$9000 for the season. On the other hand, the farmer can also sell his tomatoes to a wholesale market 50 miles away with 8 drop offs during the season each taking the staff person 5 hours (packing, driving, delivery, clean-up). Total marketing cost is \$1000.

As you can see, as the price per pound goes down, the wholesale marketing channel becomes much more profitable because of the added labor costs of the direct

					marketing channel
	10000	11000	12000	13000	Also as the volume of
\$3.50 farmers market	\$13,356.00	\$16,856.00	\$20,356.00	\$23,856.00	production goes up, the wholesale marke
\$2.36 farmers market	\$1,981.00	\$4,343.50	\$6,706.00	\$9,068.50	becomes more profitable, and is less
\$2.36 wholesale	\$10,084.00	\$12,444.00	\$14,804.00	\$17,164.00	likely to become as
\$1.23 wholesale	(\$1,266.00)	(\$41.00)	\$1,184.00	\$2,409.00	quickly saturated.
					Eventually, unless the

A change in yield from 10000 to 13000 pounds per acre has almost the same bottom line benefit as receiving a dollar more per pound. A grower can't control prices,

market grows, a farmer's market farmer will need to add additional markets to move

additional tomatoes. In this example,

customer base of a

Yield per acre / price per pound	\$1.00	\$2.00	\$3.00	\$4.00
10000	(\$2,500)	\$7,500	\$17,500	\$27,500
11000	(\$1,500)	\$9,500	\$20,500	\$31,500
12000	(\$500)	\$11,500	\$23,500	\$35,500
13000	\$500	\$13,500	\$26,500	\$39,500

need to sell more than 13,000 lbs to justify adding an additional farmers market.

These are simplified examples, clearly the farmer could have other products to sell, such that marketing costs would be spread out over more crops. Knowing how quickly each market channel would be saturated and how reliable the channel is would also factor into their decision making. However

every additional farmer's market has about \$3000 in fixed costs. Adding an additional market to move from 12,000 lbs of tomatoes to 13,000 lbs, when the fixed cost of labor for a new market (\$3,000) is considered, would mean that the net profit was about the same. The farmer would

one thing that is clear, having a handle on your costs of production and knowing at what price you are making money and losing money can go a long way towards making better decisions about market channel selection.



Good to Great: Navigating the Ag Labor Maze

Cost: \$20

Location: Jordan Hall, NYS Agricultural Experiment Station 630 W. North St., Geneva, NY, 14456

To register, visit <u>https://enych.cce.cornell.edu/event.php?id=882</u> If you are unable to register online, contact Abby Henderson at (518) 746-2553 or <u>aef225@cornell.edu</u>

Program

11:30am-12:00pm Registration

12:00pm-4:00pm Program

Tips and tools for employers of foreign born agricultural workers. Learn how to build better relations between farmers and workers and how to establish meaningful communication across cultures and language barriers. Mary Jo Dudley, Director of the Cornell Farmworker Program, will discuss how to create positive workplaces and reduce miscommunication and culturally-based misunderstandings. Other speakers will address access to health services, opportunities for English language learning, and tips for worker and employer emergency preparedness.

4:00-5:00 pm Optional informal discussion about navigating the H2-A temporary guest worker program

Questions? Contact Mary Jo Dudley at <u>Farmworkers@cornell.edu</u>or (607) 254-5194



Scholarships for Veterans and Grants for Beginning Farmers!

The Cornell Small Farms Program has funding from NYS to provide scholarships for NYS veterans to attend this program.

To learn more about this opportunity, and determine if you are eligible for a scholarship, please contact Kat McCarthy at <u>kmm485@cornell.edu</u> or (607 255-9911.

The CSFP also has grants for beginning farmers to receive 1:1 technical assistance in Human Resources. Beginning farmers attending these trainings are eligible to apply.

2018 Eastern New York Fruit and Vegetable Conference

The Desmond Conference Center 660 Albany Shaker Rd Albany, NY 12211

Tuesday, February 20th & Wednesday, February 21st



Cornell Cooperative Extension Eastern NY Commercial Horticulture Program

DAY ONE- TREE FRUIT

4 DEC Credits available (10, 1A, 22)

8:00 Registration

8:50 Introductions and Announcements -Dan Donahue, CCE ENYCHP

9:00 Evaluation of Blossom and Shoot Blight Control with Different Copper Formulations, Apogee, Actigard, and Newer Biologicals - Dr. Srdjan Acimovic, Cornell HV Research Laboratory

9:45 Biology of the Fire Blight Pathogen Erwinia amylovora Under Starvation Conditions: Survival Strategies and Virulence -Dr. Ricardo Delgado-Santander, Postdoctoral Associate, Cornell University

10:25 Expanding the Range for Establishing the Samurai Wasp, Trissolcus japonicus in Orchards and Vegetable Crops of NYS -Peter Jentsch, Senior Extension Associate in Entomology, Cornell University

10:30 Break

11:00 Observation and Discussion of Apple Decline in the Hudson Valley of New York State -Dan Donahue, CCE ENYCHP

11:30 Updates on Products for Managing Diseases of Apples: Apple Scab, Powdery Mildew, Bitter Rot, and Fire Blight - Dr. Kerik Cox, School of Integrative Plant Science, Cornell University

12:00 Hot Buffet Lunch and Trade Show 1:30 Crop Insurance -Elizabeth Higgins, CCE ENYCHP

2:00 Update on Plum Pox Virus in the Hudson Valley -Margaret Kelly, Assistant Director, Division of Plant Industry, New York State Department of Agriculture & Markets

2:15 Crop Load Management in Apples: Getting the Most Out of PGRs -Dr. Poliana Francescatto, School of Integrative Plant Science, Cornell University

3:00 Registration and Efficacy Trial Updates on New Tree Fruit Insecticides in New York -Dr. Art Agnello, Department of Entomology, Cornell University

3:30 Northeast Pollinator Partnership findings and The Native Bee Assessment Tool -Maria Van Dyke, Department of Entomology, Cornell University

4:00 Trade Show

DAY ONE- BUSINESS MANAGEMENT

Tuesday, February 20th

8:00 Registration

8:25 Introductions and Announcements- Liz Higgins, CCE ENYCHP

8:30 Community Supported Agriculture in Eastern New York - 2017 Data -Liz Higgins, CCE ENYCHP

9:00 Media Relations for Farmers: Are You Ready to Communicate Effectively with the Press and the Public About Your Farm? -Steve Ammerman, New York Farm Bureau Public Affairs Manager

10:30 Navigating Through the Ag Labor Maze: Resources for Farmers with a Latino Workforce -Mary Jo Dudley, Cornell Farmworkers Program Director & Liz Higgins, CCE ENYCHP

12:00 Hot Lunch Buffet and Trade Show

DAY ONE- SMALL FRUIT

Tuesday, February 20th 2.5 DEC Credits available (10, 1A, 22)

12:00 Hot Buffet Lunch and Trade Show

2:00 Introductions and Announcements -Laura McDermott, CCE ENYCHP

2:05 New Information on Integrating Low Tunnels into Day Neutral Strawberry Systems - Marvin Pritts, School of Integrative Plant Science, Cornell University

2:45 Evaluating and Constructing Your Weed Management Plan -Bryan Brown, NYS Integrated Pest Management Program, Cornell University

3:30 Re-tooling Your Sprayer for Better SWD Control -George Hamilton, University of New Hampshire Cooperative Extension Field Specialist

4:00 NEWA's Berry Models - How You Can Make Them Work for You - Juliet Carroll, NYS Integrated Pest Management Program, Cornell University

4:30 Why Can't I Grow Strawberries Anymore? Diagnosing and Managing Soil problems -Laura McDermott, CCE ENYCHP

5:00 Adjourn

DAY TWO- TREE FRUIT

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Wednesday, February 21st 2.5 DEC Credits available (10, 1A,22)

8:00 Registration, Sign DEC Rosters, coffee, and visit the Trade Show!

8:50 Introduction and Announcements— Michael Basedow, CCE ENYCHP

9:00 Asymptomatic Fire Blight Infections of Apple Rootstocks After 2016 Epidemic in NE New York and Implications for Apple Growers in NY Champlain and Hudson Valleys -Dr. Srdjan Acimovic, Cornell Hudson Valley Research Laboratory

9:30 Overview of Current Apple Rootstock Technologies in the Geneva Apple Rootstock Breeding Program -Dr. Gennaro Fazio, Cornell , USDA-ARS

10:00 New Varieties from the Cornell Apple Breeding Program -Dr. Susan Brown, Cornell University

11:00 The Land Grant Mission in 2018: Why R&D innovation in ag matters to consumers, and your farm's future- Julie Suarez, Associate Dean, CALS, Cornell University

11:30 New York Apple Association Update -Marketing New York Apples, a summary of promotional activities for 2017 crop year and NYAA's strategic work plan,-Cynthia Haskins, President

11:50 New York State Horticultural Society Update

12:05 Hudson Valley Research Laboratory Update

12:20 Hot Buffet Lunch, Visit Trade Show

1:30 Managing Fire Blight: A Cost/Benefit Analysis -Elizabeth Higgins, CCE ENYCHP

2:00 Honeycrisp, Bitter Pit, and Eastern New York: Connecting the spots? -Dan Donahue, CCE ENYCHP

2:30 Identification of Microbial Problems from Eastern NY Apple Orchards - Blossom Blast and Marssonina Leaf Blotch -Dr. Srdjan Acimovic, Cornell Hudson Valley Research Laboratory

3:00 Evaluations, DEC Sheets, & Visit Trade Show

DAY TWO- VEGETABLES

Wednesday, February 21st 3.5 DEC Credits available (10, 1A, 23)

8:00 Registration and Trade Show

8:55 Introduction and Announcements - Chuck Bornt, CCE ENYCHP

9:00 Developing Precision Water and Nutrient Systems in Vegetables - Dr. Darcy Telenko, CCE Cornell Vegetable Program

9:35 Managing Sweet Corn Worm Pests with Newer Insecticides- Dr. Galen Dively, Department of Entomology, University of Maryland

10:10 Optimizing Crop Protectant Performance with Adjuvants - Curt Matthews and Brooks Barefoot, Helena Chemical Company

10:45 Morning Break

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11:15 Bird Management in Sweet Corn - Evaluating New Tools - Dr. Darcy Telenko, CCE Cornell Vegetable Program

11:50 Allium Leafminer: Looks Like It's Here to Stay -Teresa Rusinek and Ethan Grundberg, CCE ENYCHP

12:15 Hot Lunch Buffet and Trade Show

1:30 Making the Most of Bio-Controls: Mode of Action and Compatibility - Greg Rodgers, Certis Crop Protection

2:00 Honey Bee and Wild Bee Health Update and Management Considerations -Maria van Dyke, Department of Entomology, Cornell University

2:35 Afternoon Break

3:05 Growing Fall Cucumbers: Efficacy and Economics of Downy Mildew Resistant Varieties - Susan Scheufele, University of Massachusetts

3:40 Sensor Technologies and Drones in Crop Production - Jim Meyers, CCE ENYCHP

4:15 pm Evaluations, DEC Sheets, & Visit Trade Show

SAVE \$20! Pre-register before Tuesday, February 13th, 2018

REGISTER ONLINE:

https://enych.cce.cornell.edu/event.php?id=881

ENYCHP Enrolled farms will also receive a \$10 discount per conference attendee! Enroll online at: https://enych.cce.cornell.edu/enrollment.php

Interested in coming by bus from the Hudson Valley?

Please contact: Dan Donahue 518-322-7812









