Expand your market offering with bunches of newer varieties of sprouting broccoli. These varieties mature around 75 days.

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We're super proud to announce that CVP Specialist Christy Hoepting was honored with the Outstanding Accomplishments in Extension/Outreach award!

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VEGEdge

YOUR TRUSTED SOURCE FOR RESEARCH-BASED KNOWLEDGE

Volume 14 | Issue 25 | December 1, 2018

Cornell Cooperative Extension
Cornell Vegetable Program

Sprouting Broccoli Offers Marketing Opportunities

Robert Hadad, CCE Cornell Vegetable Program

This summer, Bejo Seed Co. had their annual open house field days. They showcase popular as well as new varieties they have developed to the seed trade. It is a very informative event and all growers who sell fresh market should check it out usually for two days on the last week of August at their farm in Geneva.

The summer heat and drought had been fierce and the vegetable trials still looked decent despite the adverse growing conditions. One particular field plot got my attention. This was the section of the broccoli trial devoted to sprouting varieties. Some new introductions really stood out considering how the weather was.

Now sprouting broccoli isn't that new. Several varieties have been around for many years. Santee is one that has offered growers large plants that produce

Burgundy sprouting broccoli in early October 2018. *Photo: R. Hadad, CVP*

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VegEdge newsletter is exclusively for enrollees in the Cornell Vegetable Program, a Cornell Cooperative Extension partnership between Cornell University and CCE Associations in 13 counties.

The newsletter is a service to our enrollees and is intended for educational purposes, strengthening the relationship between our enrollees, the Cornell Vegetable Program team, and Cornell University.

We're interested in your comments. Contact us at:
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Help us serve you better by telling us what you think. Email us at *cce-cvp@cornell.edu* or write to us at Cornell Vegetable Program, 480 North Main Street, Canandaigua, NY 14424.

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The next issue of VegEdge newsletter will be January 1, 2019.

Christy Hoepting Honored for Accomplishments in Outreach

from Cornell CALS

Kathryn J. Boor, the Ronald P. Lynch Dean of Cornell CALS with award winner Christy Hoepting of the CCE Cornell Vegetable Program.

Christy Hoepting was recognized for individual leadership in developing a highly innovative and responsive program that addresses stakeholder needs and affects New York State in a ceremony Nov. 5 celebrating research, extension and staff excellence at the College of Agriculture and Life Sciences.

Hoepting, senior extension associate with the Cornell Vegetable Program, works as part of a five-person team covering 13 counties...in Western New York. She specializes in the management of onions and cool weather crops such as cabbage and broccoli, and her highly productive and responsive approach emphasizes applied research and innovation. Over 17 years with the program, she has earned a great level of trust with growers and recognition as a regional and national onion expert, according to Kathryn J. Boor '80, the Ronald P. Lynch Dean of CALS.

"Christy's work epitomizes the Land Grant mission of CALS — to tackle the challenges of our time through purpose-driven science. Thank you, Christy, for supporting this enduring commitment," said Boor.

Hoepting currently chairs a multi-state committee to address the management of onion pests and diseases. Her research scouting program has resulted in a 50-74 percent reduction in insecticide sprays.

many small thin stalked florets ideal for bunching. The issue with it is that it takes a full season to produce the shoots. Either it is planted in the spring for late fall harvests when the weather gets cold or it's planted in late summer and protected undercover for shoot production in early spring. For the late or early season market this has merit and should be included if you are looking for another rotation crop for high tunnels.

What really caught my eye were two newer varieties. Even though they had bolted from the heat I could easily see how they could be a very marketable item. The plants were large with wide open heads. The green variety was a bit tighter and could be cut as a single head then copious side shoots would be ready about 3 weeks later. The purple floret variety was a real standout. Wide head open with loads of shoots. I was told to come back in the fall to see the next planting when they coming into harvest.

Later in October I returned to find a glorious stand of green and purple broccoli plants. A quick slice through with a harvest knife and a dozen green sprouts of Montebello with 8" shoots laid across the hood of the cart. The florets were 1.25-2.5" in diameter. The shoots were soft and sweet and the florets nicely tender and flavorful. If the harvest cut was a bit lower into the plant, a whole broccoli head could be taken and sold as is. New sprouts would come on in a few weeks.

Montebello shoots from one plant. *Photo: R. Hadad*

Montebello bunched. *Photo: R. Hadad, CVP*

The purple variety, Burgundy was a huge standout. Dark green foliage, long stems, and deep purplish maroon colored florets. The plant was easy to cut and a slice with the knife and 18-20 shoots about 10-12" long. The stems were soft yet crispy like asparagus. Chefs actually will use the shoots like asparagus. The florets were 1-2.5" in diameter. The appearance was striking.

For the market, it would make sense to put the stems/florets in bunches maybe 5-7. The green Montebello would be smaller and priced lower, around $3. The Burgundy variety, though, with the longer stems should fetch easily $5/bunch maybe more. This means that a single harvest, the plant could retail $15 or so. That is a nice return for broccoli.

Loads Burgundy shoots from one plant (left) make nice bunches (right). *Photos: R. Hadad*

Unlike the older Santee variety that is planted out once or maybe twice a season, Burgundy could be succession planted every two or three weeks for continued harvest across a longer time period. With the bigger retail price, more profit could be seen per linear foot of row than a lot of other crops over a longer period. Protected production could allow for planting in April and harvest in June with succession plantings and harvests into early November or longer if under cover. Both of these newer varieties mature around 75 days.

Unlike the Asian broccoli types or Italian rapi, Burgundy and Montebello produce consistently. Hot temperatures may speed up maturity but bolting is slow. Changes in temperature also doesn't have a huge effect either. Florets remain a good size, stems are long and tender.

This winter as the seed catalogs start stacking up, go through them and look for these varieties to trial. Add to them some of the early spring Asian and Italian varieties along with the long season Santee and you will certainly cover the broccoli bunch market next season.

What do Biofungicides Add to Vegetable Disease Management? Part 1 – Introducing the Project

Amara Dunn, NYS IPM; Sarah Pethybridge, Cornell; and Darcy Telenko, formerly of CCE Cornell Vegetable Program

This summer we compared three biofungicides added to a conventional cucurbit powdery mildew management program in field trials conducted in western and eastern NY and on Long Island. *Photo: Caitlin Vore, Cornell Vegetable Program*

What we're doing

This summer I have been working with great colleagues (Elizabeth Buck, Dr. Julie Kikkert, Dr. Margaret McGrath, Jud Reid, and Crystal Stewart) on a project funded by the New York Farm Viability Institute looking at the use of biofungicides (Remember what biofungicides are?) in vegetable disease management. Dr. Darcy Telenko (formerly of the Cornell Vegetable Program) helped plan the project before starting her new position at Purdue University, and Dr. Sarah Pethybridge has provided valuable advice based on her extensive work with white mold (including control with biofungicides). BASF, Bayer, BioWorks, Certis, Dow, and Marrone BioInnovations provided product for the field trials.

The project has two goals:

1) Quantify what biofungicides add to management of cucurbit powdery mildew and white mold in terms of…
   - disease control
   - yield
   - plant health
   - economic value (comparing yield gains to fungicide costs)

2) Evaluate the utility of NDVI (normalized difference vegetation index) as a measure of plant health and disease detection in fresh vegetables

Why this project?

For both diseases (cucurbit powdery mildew and white mold), we're considering biofungicides used with other pest management – other biofungicides, conventional chemical fungicides, and/or cultural practices. Biofungicides are not expected to be silver bullets, and they work best when used in an IPM strategy. But when deciding whether or how to use them in your operation, it's good to know what value you're getting for the extra costs of purchasing and applying the products. This summer we ran trials in three major vegetable-producing regions of the state: western NY, eastern NY, and on Long Island.

Biofungicides for cucurbit powdery mildew

For combatting cucurbit powdery mildew, we're comparing three biofungicides: LifeGard (*Bacillus mycoides* isolate J), Regalia (extract from the giant knotweed plant *Reynoutria sachalinensis*), and Serifel (*Bacillus amyloliquefaciens* MBI 600). All three were applied weekly starting when the plants were small. Then, when the first signs of powdery mildew showed up, we started a rotation of conventional fungicides (Vivando, Quintec, and Luna Experience). These three treatments plus a rotation of all-organic fungicides (LifeGard, MilStop, Serifel, and a mineral oil) are being compared to two control treatments: the conventional fungicides alone, and plants that received no treatment for powdery mildew. We ran the trials on a variety of bushing acorn squash ('Honey Bear') that has intermediate resistance to powdery mildew.

Cucurbit powdery mildew looks like a dusting of powdered sugar on the cucurbit leaf. These powdery spots start on the underside of the leaf, and then develop on the upper surface of the leaf, so excellent spray coverage is important. *Photo: Amara Dunn, NYS IPM*

Biofungicides for white mold

In the white mold trial, we're looking at Double Nickel (*Bacillus amyloliquefaciens* strain D747) alone or in combination with Contans (*Paraconiothyrium minitans* strain CON/M/91-08; formerly *Coniothyrium minitans*). Next year we'll look at these biofungicides in combination with reduced tillage at one site. Reduced tillage is another IPM strategy for white mold. The active ingredient in Contans is a fungus that eats the resting structures (sclerotia) of the fungus that causes the disease white mold. Because of this, it needs time to work, and is applied either in fall or spring. The goal is to reduce the number of sclerotia present in the next crop. Next year we'll collect data on whether applica-

continued on next page

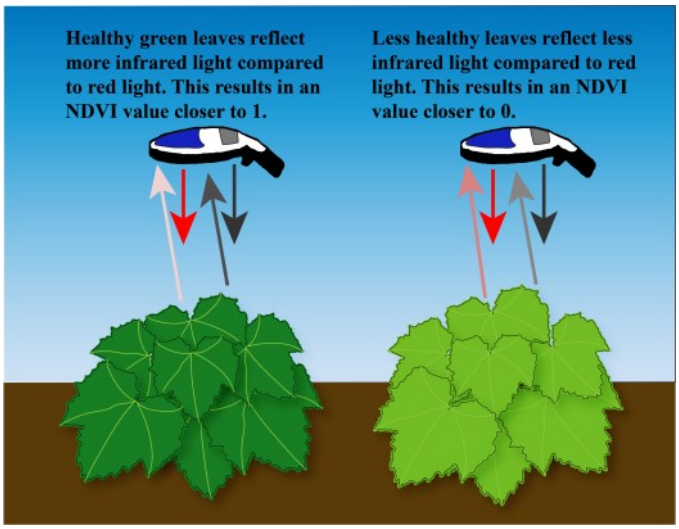
tion of Contans reduced disease. In the meantime, during the 2018 growing season treatments we tested were Double Nickel, Cueva (an OMRI-approved copper) and no treatment for white mold on snap bean. Previous research by the EVADE Lab at Cornell AgriTech at The New York State Agricultural Experiment Station, Geneva, New York, has shown that Double Nickel is a promising biofungicide for white mold.

Most vegetable crops are susceptible to white mold, with legumes being among the most vulnerable. The name comes from the dense white "tufts" that the fungus forms. These develop into dark, hard sclerotia that can survive for years in the soil.
Photo: Amara Dunn, NYS IPM

What is NDVI, anyway?

In a nutshell, the "normalized difference vegetation index" (NDVI) is a way to quantify how much healthy, green foliage is present. The device we used emits different types (wavelengths) of light (red and near infrared), and measures how much of each type of light is reflected back from the leaves of the plant. Leaves that are dark green and healthy reflect more infrared light and absorb a lot of red light. Less healthy leaves reflect less infrared light. A NDVI value closer to 1 indicates healthier plants. A NDVI value closer to 0 indicates less healthy plants (or more bare ground).

NDVI and similar indices are already used in other crops and in other places to help growers make decisions about when to fertilize, or to help detect parts of a field where a pest may be present. So far in NY, NDVI is not being widely used by fresh market vegetable growers for disease detection.



NDVI (normalized difference vegetation index) quantifies the amount of dark green foliage based on how much light of different wavelengths is reflected. It is used in some crops to decide when to apply fertilizer, or to help detect below-ground pests.
Graphic: Amara Dunn, NYS IPM

Collecting NDVI data from this project will do two things:

1) Help us quantify the health of plants. Even though NDVI is not a measure of disease, we would expect to see more healthy foliage if biofungicides are contributing to disease control.

2) Provide some preliminary data to help us determine whether NDVI measurements could be useful to NY fresh vegetable growers.

Field meetings were held at each powdery mildew trial location so that local growers could see the trials and hear about the project.

Growers and industry reps had a chance to visit the 2018 cucurbit powdery mildew field trials shortly before they were harvested.
Photo: Amara Dunn, NYS IPM

We're currently wrapping up data analysis from the 2018 field season. You'll be able to learn about results from the first year of this two-year project at winter meetings around NY, in Extension newsletters, and on the Biocontrol Bytes blog. Also, stay tuned for Part 2 of this post with details about how these biofungicides work (modes of action), and how to use them most effectively.

Potato Tuber Blemishes Affecting Marketability

Sandra Menasha, Vegetable/Potato Specialist, CCE Suffolk County

Potato tubers can display a wide range of skin defects or blemishes that can affect their marketability. Each year we see all or some of the blemishes discussed below. Causes can be environmental or pest/disease related. Understanding the causes and identifying the symptoms can help with management in the future.

Silver Scurf: Considered a seed-borne disease caused by the fungus *Helminthosprium solani*. It is believed that this disease organism does not survive more than a single season in the soil. Infected seed is still considered the primary source of inoculum. Purchasing seed free of silver scurf, rotation, and controlling volunteers are key management strategies. Common symptoms of the disease include tan and/or gray blemishes on the surface of the potato tuber which become infected during the growing season. Symptoms can often be confused with black dot. In storage, incidence and severity of silver scurf can increase significantly and can cause shrinking and shriveling of infected tubers. Storage conditions for potatoes often favor disease development (humidity >90% and temps 38 F or higher). By reducing relative humidity (<90%), spore production will cease and tuber to tuber spread can be minimized in storage. There is very little information available as it pertains to variety susceptibility but red, yellow and white smooth skinned varieties have been characterized as susceptible because lesions are very obvious whereas russet skin types are considered resistant because symptoms are not as obvious. For more "susceptible" varieties, harvesting early can lessen the amount of silver scurf on tubers.

Black Dot: Although not as common in our area as other blemish disorders discussed in this article, black dot has been observed in past years on LI. This disease is caused by the fungus *Colletotichum coccodes.* The pathogen can be seed/tuber-borne or soil-borne. The fungus can overwinter on tuber surfaces or plant debris. Tuber infection appears and brown to gray discoloration over a large portion of the tuber or as round spots typically over ¼" in diameter. Under the right conditions, dot-like black sclerotia can appear within the discolored areas which differentiate it from silver scurf. Discolored tubers and shrinkage in storage leads to reduced yields. Management practices include rotation (3-4 years out of Solanaceous crops), purchasing clean seed, avoiding plant stress, maintaining adequate fertility, and deep plowing to bury debris and encourage decomposition.

Potato black rot. *Photo: Thomas Zitter, Cornell*

Common Scab: Probably the more well-known of tuber blemishes, common scab is caused by the pathogen *Streptomyces scabies*. Most potato soils have a resident population of *S. scabies*. Populations will increase with successive plantings of susceptible crops. Lesions can range from a superficial raised corky area to a pitted area (shallow to deep hole). These variations are all caused by the same pathogen but variety susceptibility, time of infection, environmental conditions and pathogen strain more so determine the type of lesions observed. Individual scab lesions are circular but can coalesce into large scabby areas. Tubers can become infected through lenticels or wounds. The pathogen will survive in lesions on the tuber but will not increase or spread in storage. However, planting tubers with scab can lead to soil infection as spores are shed from lesions into the soil and will also result in infection of daughter tubers. Soil pH levels below 5.2 will greatly control and/or suppress common scab. "Acid scab" which is not as widespread as common scab but has been found in the Northeast, can grow in soils with pH levels as low as 4.0. Soil moisture can also have a significant effect on common scab infection. Dry periods following tuber initiation can increase scab infection. So to manage common scab it is recommended to use resistant varieties in problem fields, plant scab-free seed, rotate with small grains, corn or alfalfa to reduce pathogen levels, maintain soil pH levels between 5.0 and 5.2, and avoid moisture stress for the 2-6 weeks following tuber initiation.

Enlarged/Infected Lenticels: This is a tuber problem we are seeing more often, especially in smooth-skinned yellow varieties. Lenticels are the tubers breathing pores and they allow for gas exchange in the tuber necessary for growth and development. Lenticels take in oxygen and exchange carbon dioxide. Conditions that lead to reduced oxygen levels around the tuber like waterlogged soils and/or highly compacted soils will result in the lenticels becoming enlarged in order to acquire more oxygen. Enlarged lenticels offer a pathway or entryway for pathogen infection in and around the lenticel. Bacterial soft rot *(Pectobacterium carotovora)* has been the pathogen most often associated with infected lenticels but others like Dickeya species, pythium, pink rot, late blight and common scab can also infect lenticels. Bacterial soft rot can survive in the lenticels through storage and lead to tuber soft rot so it is important to keep oxygen levels adequate to prevent any spread in storage. Really best not to store these potatoes. Other considerations include ensuring washed tubers are dry before packaging. Other management considerations include improving soil compaction through organic matter additions and cover cropping, improve field drainage, and avoid overwatering.

Root lesion nematode: Lesion nematode, *Pratylenchus penetrans*, is found

Lesion nematode feeding damage on tubers. *Photo: Sandy Menasha, CCE Suffolk Co.*

in all potato producing areas in North America and Canada. Although the nematodes mainly feed on plant roots which can lead to stunting, reduced plant vigor, increased levels of Verticillium wilt, yellowing of leaves and reduced tuber size, feeding on tubers can cause lesions large enough to appear like tiny warts all over the surface of the tuber reducing marketability. Lesion nematodes can overwinter in soil as late-stage juveniles or adults and have an extremely wide host range; over 400 hosts including both grasses and broadleaf plants and crops as well as weeds. This makes rotation out of a susceptible crop to a non-host crop very difficult. Corn and other grain crops are favorite hosts. Using specific cover crops as green manures like nemat or canola may reduce populations. Pre-plant chemical fumigation with Vapam is still available on LI and is highly effective. Growers may want to consider chemical fumigation when lesion nematodes and Verticillium are both present in fields and a cultivar susceptible to Verticillium wilt like Superior will be grown.

Potato Tuber Necrotic Ringspot Disease: Potato Virus Y (PVY) is a virus that infects potato along with other plants in the nightshade or Solanaceous family like tomato, eggplant and pepper. Within the past 10 years or so, new necrotic strains of PVY have emerged and are now the dominant strains present; one of them being PVY^{ntn}. This strain causes a tuber defect called Potato Tuber Necrotic Ringspot Disease (PTNRD). In susceptible varieties, affected tubers show slightly raised, dark brown to reddish/pink rings around the eyes. Necrosis below the rings may extend into the tuber flesh. On Long Island, symptoms were first noticed on tubers of Yukon Gold (very susceptible) in 2012 but it was showing up in the U.S seed crop since at least 2004. Ever since then, it has been a recurring and increasing issue in not only Yukon Gold but other susceptible varieties as well. Transmission of PVY^{ntn} is primarily through infected seed but can also be transmitted and spread through a field by aphids. Recommended management options include planting only certified seed (*PVY in 2% of the seed can result in 10% - 20% infection of plants and daughter tubers.),* sanitation as PVY can be mechanically transmitted, destroying cull piles which can serve as a source for spread, resistant varieties (Research is currently underway to determine variety susceptibility. Information is posted at www.potatovirus.com.), keep aphid populations in check, and eliminate volunteers.

Potato tuber necrotic ringspot disease. *Photo: Sandy Menasha, CCE Suffolk Co.*

The Weed Seed Bank – Ghost of Field Season Past

by Elizabeth Buck, CCE Cornell Vegetable Program

Dear 2018:

Congratulations! You certainly kept things interesting here in Western NY. So many memories, like that time you rained all spring, then turned the sky faucet off and turned the heat on for 5 weeks? And then, just for fun, ran the tap again… All. Fall. Long. Forgive me if I don't cherish the time we spent in the field together.

I'm writing you, 2018, to say that I refuse to be haunted by your ghost. I'm putting you on notice, I have no appetite for visits from your weeds in 2019.

I remember those weeds that you coached into emerging late in the year (after I could cultivate) and protected from my pre-emergence herbicides by "conveniently" not providing activating rainfall. I've got them written down, name and address. I know where to expect all their little seedlings to come popping up into my life next year. And I'll be there to greet them.

I've done my research, I know exactly what each weed hates. I will be there to trick that seed bank into fruitless germination with my stale seed bed, to stop them in their tracks with their least favorite pre-emergence or burndown herbicide, to provide them an up-close and personal experience with my cultivator. I promise, 2018, I will customize my weed banishment efforts more than you customized each field with its own special blend of vegetative scourge.

And just in case you think you'll pass along your heinous herbaceous habits to 2019 – I've got a Plan B for bad weather, a Plan C for continuous pressure, and a Plan D for diminishing deposits into the seed bank. Your successor won't catch me relying solely on one weed control tactic.

Goodbye 2018. I give you credit for doing your best to give me a living, ever growing reminder of your challenges. Your wicked weed seeds won't worry me.

Regards,
Farmer Scrooge

EXPO

EMPIRE STATE PRODUCERS EXPO | JANUARY 15-17, 2019

SRC Arena & Event Center, 4585 West Seneca Turnpike, Syracuse NY

2019 BECKER FORUM – FARM LABOR: PLANNING FOR THE FUTURE
Monday, January 14, 2019 | 8:30 AM - 5:00 PM
Holiday Inn Convention Center, 441 Electronics Parkway, Liverpool, NY 13088
$95 for the first person and $85 for additional registrants from the same organization before January 5, 2019; $120 per person after January 5 or at the door

Farm worker housing, labor law compliance, and the federal guest worker program (H-2A) are key themes for the 2019 Becker Forum. Employer compliance with new sexual harassment prevention laws will also be a prominent topic. Featured speaker Lynn Jacquez, from the CJ Lake law firm in Washington, DC will address what policy positions to expect from the new Congress and the Administration in the year ahead. She will also address immigration enforcement trends and worksite issues that are important for farm employers.

Three presentations will focus on farm-provided employee housing. Nancy Hagopian from the NYS Department of Health will provide recommendations for improving existing housing. Ed Urbanick from Farm Credit East will discuss financing for construction and renovation of housing. A featured farm employer panel will discuss best practices for managing worker housing.

The forum will also provide information related to the H-2A guest worker program, including how some dairy farms are successfully using it to access workers. Current changes in the H-2A program will be reviewed and information will be provided on how to effectively hire foreign-born workers through the program.

Attorney Michael Sciotti from the Barclay Damon Law Firm in Syracuse will inform farm employers about what they must do to comply with New York's new regulations on sexual harassment prevention policies and training.

At the end of the afternoon there will be an opportunity for questions and discussion regarding critical workforce issues. For a complete agenda and to register go to http://nysvga.org/expo/information/, or email nysvegetablegrowers@gmail.com. For more details about the program contact: Richard Stup, Ph.D., Agricultural Workforce Specialist, Cornell College of Agriculture and Life Sciences, (607) 255-7890, rstup@cornell.edu.

PRODUCE SAFETY ALLIANCE (PSA) GROWER TRAINING COURSE
Tuesday, January 15, 2019 | 8:30 AM registration, 9:00 AM - 5:30 PM
Session organized by Elizabeth Bihn, Cornell University
Pre-registration is required; space is limited to 60. No extra workshop fee for NYS growers! Visit nysvga.org/expo

Are you subject to the Food Safety Modernization Act (FSMA) Produce Safety Rule? Do you need training to meet provision 112.22(c) that says that "at least one supervisor or responsible party from the farm to successfully complete food safety training at least equivalent to that received under the standardized curriculum recognized as adequate by the Food and Drug Administration"? If so, then you are in luck! We will be hosting a training that meets this requirement in a convenient location at minimum expense due to some funding from the NYSDAM. Come join us or send the food safety person from your farm. *In order to receive an AFDO/PSA certificate of attendance, participants must be in attendance for all modules. Please do not arrive late and plan to stay for the entire workshop.*

SOIL HEALTH SESSIONS
COVER CROPS | Tuesday, January 15, 2019 | 9:00 AM - 10:15 AM
REDUCED TILLAGE | Tuesday, January 15, 2019 | 10:45 AM - 12:00 PM
Sessions organized by Ryan Maher, Cornell Small Farms Program

Attend the Soil Health Sessions at the 2019 Empire State Producers Expo to learn how you can use cover cropping and reduced tillage practices in vegetables. Learn from experienced farmers that have adapted tools and systems to work for their farm, the benefits they have seen, and the challenges they still face. Get a belowground look at cover crops, hear about successes with organic reduced tillage, and follow the state-wide effort to support farmers in adopting soil health practices. Come to think through strategies that will work to reduce inputs and improve soil productivity on your farm.

COLE CROP HEAT STRESS – DIVERTING THE "BEATING" COLE CROPS TOOK IN 2018
Tuesday, January 15, 2019 | 10:45 AM - 12:00 PM
Session organized by Christy Hoepting, CCE Cornell Vegetable Program

The 2018 growing season has gone down in the books as one of the toughest growing seasons for Cole crops in Northeast US history. Or, so it may seem anyway, as the majority of planting after planting of broccoli, cauliflower and Brussels sprouts were unmarketable due to heat stress and diseases, especially Alternaria leaf spot. Sometimes "knowing the enemy" is half the battle. Experts in Northern US Cole crop production, Northeast Market Manager and Geneva Research Farm Manager for Bejo Seeds, Jan vander Heide and Jason Plate will review how heat stress manifests itself in broccoli, cauliflower and Brussels sprouts, and explain how heat stress many be predicted and mitigated. CCE Extension Vegetable Specialist, Christy Hoepting will share the results from her 2018 ad-hoc on-farm fungicide trial for control of Alternaria head rot in broccoli. Find out which fungicide treatment resulted in 95% marketable heads while the untreated checks were destroyed by disease.

The full program is posted on the NYS Vegetable Growers Association website at https://nysvga.org/expo

WEED MANAGEMENT – FARMER TO FARMER
Tuesday, January 15, 2019 | 3:45 PM - 5:00 PM
Session organized by Bryan Brown, NYS IPM, Cornell University

Effective weed management in vegetables requires growers to use several different control tactics. In this interactive session, we will hear about the weed management tactics of four vegetable growers, then open up the conversation for attendees to discuss particular challenges and solutions in weed management. Panelists will include Brian Reeves of Reeves Farm, John Altobelli of Altobelli Family Farm, Kreher Family Farms, and Gary Mahany of Mahany Potato Farms.

ONION PEST MANAGEMENT – EFFECTIVE IPM FOR ONION LEAF DISEASES
Wednesday, January 16, 2019 | 9:00 AM - 10:15 AM
Session organized by Christy Hoepting, CCE Cornell Vegetable Program

In 2017, New York onion growers took "healthy" fungicide programs all the way to the bank. In 2018, similar programs were not worth the money. Can scouting data, spore trapping and disease forecasting models be used to effectively tailor fungicide applications for Botrytis leaf blight, downy mildew and Stemphylium leaf blight? Special International guest speaker, Dr. Hervé Van der Heyden, a Plant Pathologist with the Cie de recherché Phytodata, Inc. and McGill University, works with muck onion growers south of Montreal in Quebec Canada. He will use 30 years of onion scouting data to describe the evolution of leaf diseases in the field from a long-term spatial and temporal point of view, and to demonstrate how the implementation of different IPM tools has influenced disease levels and fungicide sensitivity.

Finally, CCE Onion Specialist, Christy Hoepting will share highlights from her 2018 "big fat" onion variety nitrogen bacterial rot project, which featured 7 onion varieties grown with three rates of nitrogen in two locations.

ONION ADJUVANT SCIENCE 101 – *APPLICABLE TO ALL GROWERS*
Wednesday, January 16, 2019 | 10:45 AM - 12:00 PM
Session organized by Christy Hoepting, CCE Cornell Vegetable Program

With the new wave of fungicides and insecticides having translaminar and systemic activity, proper use of adjuvants has become more important than ever. In fact, the Elba onion growers requested this special guest speaker. Dr. Daniel Bergman has a Ph. D. in surfactant science. He is the Technical Service Manager for Loveland Products in Ankeny, IA, and has 16 years of industry experience specializing in pesticides and tank mix adjuvants. First, he will describe how the several types of adjuvants work including, nonionic surfactants, crop oils, organosilicones, spreaders, stickers, super wetters, penetrating surfactants, etc. Do some penetrating surfactants move through the stomates? Or, do they relax the waxy cuticle of the leaf? He will describe how to choose the right surfactant for each situation and identify some of the most important interactions with surfactants. Then, he will focus on the intricacies of adjuvant use in onion production with complex tank mixes. For example, when applying Chateau (not to be used with adjuvant or else injury will occur) for weed control in close proximity to Movento (must be used with penetrating surfactant) for thrips control, which should be applied first, how much time between applications, and how should these recommendations be tweaked according to current weather conditions?

HIGH TUNNELS
Wednesday, January 16, 2019 | 2:00 PM - 3:15 PM
Session organized by Judson Reid, CCE Cornell Vegetable Program

Do you have an interest in improving your yields of tomato, greens and other vegetable crops in high tunnels? High tunnels, or soil-based greenhouses, have been widely adopted by fresh market fruit and vegetable growers to extend their season and improve quality. Challenges to success with high tunnels include disease, insect and nutrient management. In this session, we will learn about Brown Leaf Mold management; What is legal and effective for insect control and Cold Season soil/nutrient research updates.

DEVICE READY; HOW DO CUSTOMERS VIEW YOUR BUSINESS ONLINE
Thursday, January 17, 2019 | 10:45 AM - 12:00 PM
Session organized by Megan Burley, CCE Erie County

Direct farm marketers, including value-added agriculture entrepreneurs and agritourism operators, must learn to communicate with customers in new ways. Consumers' use of smartphones, tablets and computers to interact with businesses has changed the game. To help farmers analyze and improve their online presence, Ohio State University has created a program and workbook to help marketers connect the dots for their online presence and marketing plan. This session will help participants understand how customers view their businesses online using different devices and media, including GPS to navigate to the business, social media to connect with businesses and the business' access to and use of the latest apps and gadgets. Participants will work through exercises in the Device Ready workbook and take home a plan to improve their online presence.

EXPO online registration is available from the NYS Vegetable Growers Association at https://nysvga.org/expo

EXPO
EMPIRE STATE PRODUCERS EXPO | JANUARY 15-17, 2019
SRC Arena & Event Center, 4585 West Seneca Turnpike, Syracuse NY

Upcoming Events

view all Cornell Vegetable Program upcoming events at CVP.CCE.CORNELL.EDU

Processing Snap Bean Advisory Meeting

December 4, 2018 | 10:00 AM - 1:00 PM
CCE Ontario Co, 480 N Main St, Canandaigua, NY 14424

All are invited to discuss processing snap bean production in New York. Hear reports of 2018 snap bean projects funded by the association. Special report on the application of remote sensing for white mold management by RIT researchers. Hear ideas and concerns from fellow growers and industry members. Your input is needed to set future research priorities. This meeting is free and includes a complimentary lunch. 1.75 DEC recertification credits (1a, 10, 23) offered. Contact Julie Kikkert at 585-313-8160 for more information.

Potato Show & Tell

December 5, 2018 | 11:30 AM lunch with program immediately following
Plant Breeding field house, Caldwell Rd, Ithaca, NY

The next "Potato Show & Tell", a discussion about advanced potato selections, will begin with a lunch at 11:30 and start as soon as possible after lunch to review the clones. Your participation in the past at these sessions and your personal experience with these clones has been valuable in knowing what to do with each of them. We hope you can come and contribute to this session. As usual, you are welcome to bring anyone who is interested.

The Traffic Division patrols the field house parking area. When you come into the field house, please ask us for a permit to put in your vehicle. A map can be found on page 2 here. If you can't attend but would like a copy of our annual report emailed to you, please send a request to walter.dejong@cornell.edu or call 607-255-6683.

Show & Tell used to be held every year, but now alternates years with the Potato Advisory Committee meeting in Canandaigua. The next PAC meeting will be in December 2019.

Processing Vegetable Crops Advisory Meeting

December 12, 2018 | 9:30 AM - 12:30 PM – sweet corn and pea | 1:15 - 3:00 PM – lima bean, table beet and carrot
First United Methodist Church, 8221 Lewiston Rd (Rte 63), Batavia, NY 14020

A roundtable meeting will be held for each crop. Hear ideas and concerns from fellow growers and industry members. Reports of the 2018 funded projects will be given. Your input is needed to set future research priorities. This meeting is free and includes a complimentary lunch. DEC credits vary depending on which session you a attend. Call Julie Kikkert at 585-313-8160 for more information.

Soil Health Workshop & WNY Soil Health Alliance Annual Membership Meeting

December 19, 2018 | 8:30 AM - 3:00 PM
Quality Inn & Suites, 8250 Park Rd, Batavia, NY

Kristine Nichols is a Soil Microbiologist with over 25 years studying Mycorrhizal Fungi. Kris will be presenting information on using Regenerative Farming practices to build Soil Resilience and offering a workshop on Conducting Hands-On assessment of Soil Health.

John Wallace is Assistant Professor & Weed Extension Specialist from Penn State. John will be presenting Penn State research on Weed Management with Soil Health practices and a workshop on Interseeding challenges & opportunities. In addition, Paul Salon will present a workshop on using the NRCS calculator to develop Cover Crop mixes. Attendees are being asked to bring information on mixes they have tried along with pictures if possible.

The annual meeting of the Alliance membership will be held at 11:45 AM to elect 2 Board members and conduct such business as necessary. For more information, visit http:/www.wnysoilhealth.com and click on the Events tab or contact Dennis Kirby at 585-589-5959. DEC & CCA credits will be offered.

Finger Lakes Produce Auction Educational Meeting

January 3, 2018 | 8:30 AM - 3:00 PM
Finger Lakes Produce Auction, 3691 NY-14A, Penn Yan, NY 14527

Topics include: Welcome and FLPA update; GAPs vs FSMA and On Farm Readiness Reviews; Vegetable crops disease and pest update; Weaverland Produce Auction grower panel; Basics of plant breeding and Brassica variety selection as a disease control strategy; Brassica disease overview featuring 2018 trial results for control of Alternaria leaf spot and head rot in broccoli; Strawberry establishment and production for auction growers; Thrip and whitefly greenhouse management for bedding plants, vegetable transplants and high tunnel tomatoes; Growing flowers for market: a grower's perspective; and will conclude with a follow-up question and answer period.

For more information, contact Judson Reid at 585-313-8912.

Upcoming Events

continued...

Ontario Produce Auction Growers Meeting

January 9, 2019 | 9:30 AM - 2:30 PM
Ontario Produce Auction, 4860 Yautzy Rd, Stanley, NY 14561

Topics include: High tunnel tomato pest and disease management; Auction overview and grower viewpoint-panel; Vine crops for auction; Seed, products and varieties; Disease management in greenhouse flowers and spring transplants; Irrigation of vegetable crops on plastic mulch; Buyer panel and Q&A.

Lunch provided by OPA. For more information, contact Judson Reid at 585-313-8912.

2019 Empire State Producers EXPO

January 15-17, 2019 | sessions throughout each day
SRC Arena & Events Center, Onondaga Community College, 4585 West Seneca Turnpike, Syracuse, NY

The 2019 Empire State Producers Expo combines the major fruit, flower and vegetable associations of New York State in order to provide a comprehensive trade show and educational conference for New York producers, as well as the surrounding states and Eastern Canada. Session topics include commodity specific programs in berries, cole crops, cut flowers, tree fruit, Christmas trees, sweet corn, tomato, onions, root crops, vine crops, and emerging markets (hard cider and hemp); and multidisciplinary programs in weed management, precision ag, soil health, biopesticides, ag labor, forecasting and climate tools for agriculture, marketing, and high tunnels. DEC pesticide recertification credits and Certified Crop Advisor (CCA) credits will be offered during the appropriate educational sessions. The complete Expo program is available on the NYS Vegetable Growers Association website. *See pages 8-9 for information on some of the sessions.*

Cornell Cooperative Extension
Cornell Vegetable Program

480 North Main Street
Canandaigua, NY 14424

VEGEdge

YOUR TRUSTED SOURCE FOR RESEARCH-BASED KNOWLEDGE

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VegEdge is the award-winning newsletter produced by the Cornell Vegetable Program. It provides readers with information on upcoming meetings, pesticide updates, pest management strategies, cultural practices, marketing ideas and research results from Cornell and Cornell Cooperative Extension. VegEdge is produced every few weeks, with frequency increasing leading up to and during the growing season.

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Cornell Cooperative Extension
Cornell Vegetable Program

For more information about our program, email cce-cvp@cornell.edu or visit us at CVP.CCE.CORNELL.EDU