Erie County Ag News

Cornell Cooperative Extension of Erie County

WINTER/SPRING 2019

UPCOMING AGRICULTURAL EVENTS AROUND WNY

Blueberry Intensive Workshop

1-day workshop, featuring expert speakers from Cornell University, Rutgers University, New York State IPM and more

March 5, 2019

See page 5

Erie/Niagara Vegetable Meeting

DEC Credits available

March 26, 2019

See page 18

CORE Pesticide Applicator Training & Recertification Course

CORE credits available

April 4, 2019

See page 34

Ag Staff

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Agriculture and Natural Resources Educator
Sharon wears many hats including Invasive Species Management Integrated Pest Management in the areas of fruit, field crops and forestry; Agricultural Environmental Management Practice Education; Soil Testing and Nutrient Management; Pesticide Use and Safety; Diagnostics in coordination with Cornell faculty and staff; and Master Gardener Technical Support.

Becky O'Connor rao84@cornell.edu
Farm to School Coordinator
Becky focuses on helping Erie County Schools incorporate more New York gown and raised foods into their school meals as a part of their Farm to School Program. She also assists schools with implementing other aspects of Farm to School; including education and marketing.

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Much of Cheryl's programmatic work focuses on finding solutions to some of the more pressing systemic barriers that hinder the development of the regional food system in Western New York.

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WNY Berry Specialist with Harvest NY, with support from NYS Berry Growers Association
Esther supports berry growers in Erie County and across Western NY by advising on production practices, especially site preparation and pest & disease management.

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Administrative Assistant
Jolie designs the Erie County Ag News, creates graphics and support materials for CCE Erie, updates web site content, and shares updates from and about CCE Erie on Facebook & Instagram.

Follow CCE Erie on social media to receive up to date news and announcements!

Contents

Engaging the Youth in Agriculture; Farewell from Megan

I want to say Thank You to everyone who has helped make my time at CCE Erie an incredible experience for the last 5.5 years! I have learned so much about the agriculture industry in NYS and have truly enjoyed working with you all! I am excited for the future as I have accepted a position at the Perry Central School District as an Agriculture Teacher.

I am currently working with every 7th and 8th grader to engage them in careers and opportunities in agriculture. The school has a high tunnel and a small orchard. We plan to add 20 meat chickens to the classroom to eventually process them with HLW Acres in Attica, NY. One of my goals is to begin a Chartered FFA and grow as much food as we can to incorporate into the school lunches and hopefully start our own Farm to School project in Wyoming County.

During many of my conversations and workshops all of you, it was often discussed that in order for agriculture and farming to continue in western NY we need to be engaging the youth. I feel working here will hopefully have an impact on the future of agriculture and show these students the variety of opportunities they can explore right here in their home towns.

My family and I will continue to operate our you-pick strawberry and cut flower farm in Warsaw, NY (Burley Berries and Blooms). If you're ever in Warsaw stop by!

Thanks Again!
Megan Burley

Megan Burley

Climate-related risks such as extreme rainfall, drought, heat stress, changing disease and pest pressure, and unpredictable weather patterns pose serious threats to farmers' livelihoods. The average annual temperature in the Northeast has increased by approximately 2.4°F, and annual precipitation has increased by 4.9 inches over the last 120 years.

The frequency of extreme rainfall events (e.g., 2 inches of rain in a 24-hour period) has increased 71% between 1958-2012 (NOAA/NCDC). The length of the frost-free growing season has increased by 10 days, on average. These changes are projected to continue and increase in the future, and will pose threats to soil conditions, farm buildings, livestock health, as well as crop and animal productivity and quality.

Despite these risks, farmers can make changes to their practices and systems which will reduce the severity of these climate impacts. Climate change may create opportunities for new enterprises as warmer temperatures lengthen the growing season, while the variability and unpredictability will remain a challenge. The Six Key Strategies listed below are actions that farmers can take to reduce risks and improve the sustainability of their farm. Many of these management practices may not be new to farmers, but taken together they can help increase resiliency on the farm over the short and long-term.

Focus on Soil Health

Warming temperatures and extreme rainfall or drought will increase the potential for soil moisture stress to affect all crops. Healthy, well-structured soil that is protected by vegetation captures more water and is less susceptible to surface runoff, compaction, and erosion during heavy rain events. The following actions build soil health and resiliency to climate-related risks:

- Reduce tillage frequency and intensity, and transition to low-till or no-till planting methods where feasible.
- Increase organic matter inputs through cover crops, crop residues, manures, and compost.
- Use winter and summer cover crops between main crops to maximize soil surface protection.
- Use tillage methods which preserve plant residues on the soil surface. The goal is to minimize time with no plants covering the field.
- Develop a rotational plan to maximize the use of perennial crops in the rotation to avoid some or all tillage requirements.
- Reduce soil compaction by minimizing equipment passes over fields.
- Avoid fall tillage and bare winter fallow whenever possible.

Efficiently Manage Water Resources and Risks

Effective water management is critical in order to better handle the increased frequency of extreme precipitation events, storms, floods, and lengthening periods of short- term drought that are hitting the Northeast. Actions to improve water management include:

- Improve irrigation efficiency by using the latest technologies, such as micro-, subsurface, or drip irrigation; utilize reclaimed water if possible to conserve water during droughts.
- Install tile drainage in fields to remove excess water and control runoff.
- Expand or improve water supply systems to meet future demand, and increase water storage capacity by constructing deeper wells and ponds.
- Time fertilizer and manure applications based on weather forecasts.
- Construct over-sized and covered manure pits to minimize overflow risks during heavy rainfall events.
- Plant or manage riparian buffers along streams and ponds to capture remaining

runoff, and integrate agroforestry into farming systems to increase water-use efficiency during dry periods.

Utilize Integrated Pest Management

Competition from weeds and increased threats from known and new invasive insects, weeds, and pathogens have increased in the warming climate. Employ these strategies to manage risks of pests and disease:

- Stay abreast of new threats and be aware of life cycles and how pests spread.
- Conduct regular scouting for weeds, insects, and pathogens, and control them with proven strategies.
- Use crop varieties and livestock lineage with resistance to pests and pathogens.
- Implement cultural and biological controls for pests whenever possible.
- Correctly use appropriate pesticides when pest or pathogens exceed economic thresholds.
- Practice sanitary farming practices (e.g. clean equipment in-between fields) to reduce the spread of pests and pathogens.

Diversify Farm Enterprises, Species, Crop Varieties, and Breeds

Diversifying farm enterprises, crops, and animals is a self-insurance policy for managing uncertainty in a constantly-changing environment. Choosing a diversity of crops or animal species builds financial resiliency by reducing overall losses due to extreme weather events and market fluctuations. The following recommendations urge consideration of options to reduce these risks:

- Be open to change. Choose a variety of commodities, farm products and services that insulate against weather, environmental, market, and geopolitical threats.
- Diversify crop production by extending crop rotations and intercropping with multiple species or varieties.
- Select crop varieties based on maturity dates and genetics to match anticipated season length, rainfall and drought patterns, and pest/pathogen pressures.
- Consider controlled environment agriculture to extend the growing season, diversify operations, and decrease weather risks.

Reduce Livestock Stress from Extreme Temperatures

Heat waves, without cooling periods at night, increase the potential for heat stress on dairy cattle and other livestock and poultry. In dairy cattle, this can negatively affect milk yield, productivity, and animal health. In all livestock and poultry, heat stress can negatively impact

average daily gains, feed efficiency, productivity and animal health. Heat stress can have both immediate and life-long impacts to young animals. Employ these strategies to reduce environmental stress:

- Ensure that dairy facilities are well ventilated and have proper cooling mechanisms in place. This includes calf housing, lactating and dry cow facilities, and access to shade while on pasture.
- Use fans and sprinkler systems controlled with automatic sensors to reduce the risk of heat stress on all animals.
- All animal classes should have access to fresh, clean water.
- Monitor and adjust diets for daily intakes. Rations should be balanced to meet animal needs at a reduced intake during periods of heat stress.

Engage in Farm Planning and Adaptive Management

Building resilience against climate-related threats requires careful planning and review of farm operations and the whole business. Baseline data is required to make whole- farm management decisions. These practices can help increase the sustainability of the farm:

- Develop an adaptation plan to identify your risks and practices to remediate them.
- Conduct a whole-farm energy audit to increase energy efficiency and opportunities for renewable energy sources.
- Utilize precision farming apps and weather and climate tools (such as climatesmartfarming.org) to make more informed crop production decisions.
- New and renovated farm buildings should be energy efficient and designed to withstand predicted weather conditions, including severe heat, heavy rainfall, wind, and snow loads.
- When purchasing new farm equipment, select options to maximize fuel efficiency and decrease labor and time constraints.
- Consider purchasing crop insurance to reduce economic risks. ■

Developed by members of the Cornell Climate Smart Farming Team: Tyler Brewer (Cornell '19), Allison Chatrchyan, Sarah Ficken, Laura McDermott, Kim Morrill, and Kitty O'Neil.

BLUEBERRY INTENSIVE WORKSHOP

MARCH 5, ELLICOTTVILLE | **MARCH 14, MILLBROOK**

Join us for this exclusive 1-day workshop, featuring expert speakers from Cornell University, Cornell Cooperative Extension, Pennsylvania State University, Rutgers University, New York State IPM and more. We'll cover topics such as:

- Blueberry site prep and nutrition
- Common pests and their management
- Profitability tools
- Weed management and pruning, including a hands-on demonstration
- Post-harvest handling
- Alternative options for markets

$35 for NYSBGA members | $45 for non-members

Sign up today at nysbga.org/events, or call Karen Wilson at 315-521-0852.

PRODUCE SAFETY ALLIANCE GROWER TRAINING

March 11 9:00am - 5:00pm & March 12 9:00am - 3:00pm
CCE Broome County (Binghamton)

Participation in this training will give you the tools to create an on-farm food safety plan and complete one of the requirements of either FSMA OR the New York State Grown and Certified branding program. We will also discuss potential funding streams to make infrastructure upgrades to your farm related to food safety!

Cost starts at $100/farm and includes 2 registrations, all meals, manual and AFDO certificate.

2 DEC credits available in the following categories, 10, 1a, 22 & 23.

For more information or to register go to http://ccebroomecounty.com/

Welcome Esther Kibbe!

In late 2018 Harvest NY partnered with the New York State Berry Growers Association to add berry production expertise to our team. Esther Kibbe will be serving the western portion of the state with support on pest management, variety selection, fertility and cultural management for strawberries, blueberries and raspberries. Esther brings a wealth of berry background having worked for Driscoll Strawberry Associates as a plant breeder and global trainer for scientific staff, and a consultant for a number of farms in Western NY. Esther earned her B.S. from Cornell University in Plant Science and is working on her M.S. at The Ohio State University in Plant Health Management. We thank the Berry Growers Association for their dedication to this position!

CCE Erie Works to Bring New Products into NY Schools

by Becky O'Connor, Farm to School Coordinator

Across the country, Farm to School programs are being implemented to bring fresher, healthier foods to students; support agriculture and the local economy; and educate students and the community about food systems. Unfortunately, many schools are ill-equipped to prepare foods from scratch and have difficulty finding shelf-stable or otherwise prepared foods that are grown, raised, or produced locally. At the same time, the grape industry in NY is struggling.

When CCE Erie Farm Business Management Educator Megan Burley mentioned the struggling grape industry to CCE Erie Farm to School Educator Becky O'Connor, they realized the potential for a mutually beneficial relationship between schools and the grape industry. Becky brought this information to the Buffalo Farm to School Team and found the idea was already percolating there: a producer was in the process of creating a NY Concord grape juice to pilot in Buffalo and Binghamton Public Schools. The project was begin supported by American Farmland Trust and NY Ag and Markets, but without usage projections was having some difficulty moving forward. Becky was asked to survey districts across NY state to gauge their interest in purchasing and serving a new NY grape juice (and apple juice) product. She created a survey which was distributed to over 900 food service directors.

The information gathered from the survey helped Direct Refreshments LLC move forward with developing 2 new juice products packaged for schools: grape juice and apple juice in 4 oz. plastic cups with peel-back foil lids. These juice products can be served not only during lunch, but also during breakfast and as part of summer meals. Diversifying NY products available to schools can help them move toward the goal of 30% NY lunch ingredients set forth by Governor Andrew Cuomo. Schools that are able to meet this goal will receive an increased reimbursement rate of $0.25/meal in 2019-2020, enabling them to purchase more NY ingredients and invest in the equipment, staff, and training needed to prepare fresher, healthier meals for students.

American Farmland Trust, through the collaborative initiative Farm to Institution New York State (FINYS), is helping microgrant funding for up to 10 schools to support taste tests of the new NY State Concord grape juice. Funding will be used to support the purchase of grape juice, promotional materials, stipends for local farmers or producers for farm visits, taste test suppies, and staff time through May 2019. ■

FARM TO SCHOOL

Questions about Farm to School?
Contact Becky O'Connor
rao84@cornell.edu (716)652-5400 x179

Detecting and Observing Hemlock Wooly Adelgid Throughout the Year: On Land and From the Water

Laura Bailey, Natural Resources Educator,
Yates County Cornell Cooperative Extension

Winter is the optimal time of year to detect and observe hemlock woolly adelgid (HWA), as the adult insects are active, growing and covered in "wool." During this time of year, an infestation can be identified by the white, waxy masses that are secreted around the bodies of the invasive apid-like insect, clustered on the underside of hemlock twigs, near the base of the needles. For additional information about HWA: https://blogs.cornell.edu/nyshemlockinitiative/

Underneath the cover of its wool, the HWA is attached to the hemlock twig and feeding with its piercing-sucking straw-like mouthparts. Its mouthparts (stylets) allow it to feed deep within the plant tissues. As the tree attempts to heal this wound, the flow of water and nutrients to developing buds beyond the wound site becomes blocked, preventing new growth and eventually resulting in tree death. From late fall to early spring, HWA goes through four developmental stages before laying eggs as an adult. To learn more about life cycle stages, see HWA phenology information: https://blogs.cornell.edu/nyshemlockinitiative/hemlock-woolly-adelgid/hwa-phenology/

During the period from late spring to early fall, HWA is not covered in wool, although remnants may still be visible. At this time, HWA are in a dormancy period know as aestivation and appear as small, black nymphs (immature insect form) surrounded by a halo of white wool. Nymphs are sesame seed-shaped and can be seen on the underside of new growth with the help of a magnifying glass or hand lens.

From the water (kayak, motorboat, ice fishing, etc.), look for hemlock trees along the shore that show signs of decline: pale or greyish foliage and dead or dying branches. Infestation of HWA can cause a greyish appearance. Trees with a greyish cast can easily be spotted from a distance. If you see a tree with this appearance and are able to get nearer the shore and look more closely, verify the presence of HWA and report it. For pictures and boat survey protocol, see: https://cpb-us-e1.wpmucdn.com/blogs.cornell.edu/dist/f/7151/files/2016/12/Hemlock-and-HWA-Hunters_Boat_Protocol-1ayhgai.pdf

Other signs to watch for year-round that could indicate the presence of HWA is a weakened crown or excessive woodpecker damage caused from feeding on the hemlock borer. HWA infestation will eventually lead to crown damage and defoliation. If the crown has lots of dead branches and a lack of needles, this could indicate the presence of HWA. The hemlock borer is a native pest of hemlock, not often abundant and considered a secondary pest. As a secondary pest, it generally does not pose a significant threat unless other conditions exist that weaken the tree, such as attack from a primary pest like HWA. For more information about the hemlock borer, visit:https://www.forestpests.org/acrobat/hborer.pdf.

If you spot hemlock woolly adelgid, report it!

Use one of the following reporting methods:

- Download the NYiMapInvasives app on your phone (available in the App Store or Google Play) and create an account online at www.nyimapinvasives.org where you can find training and other resources and then report both the presence or absence of an infestation.
- Call DEC's Forest Pest Information Line: (866) 640-0652.
- Email location details, photo, and GPS coordinates to NYS Hemlock Initiative: nyshemlockinitiative@cornell.edu.

Interpreting a USDA Market News Report

Michael J Baker, PhD; Cornell Beef Extension Specialist

Thanks to a grant from the NYS Department of Agriculture and Markets ("Stocker Cattle: Using Underutilized Grasslands to Improve Economic Viability of the Southern Tier While Providing Viable Careers for Beginning Farmers"), we have hired 4 Livestock Market Reporters that collect price and animal description data at five New York auction barns. These barns have voluntarily agreed to have this third party reporting done to increase transparency of the livestock market place. These markets are Empire Livestock at Cherry Creek & Gouverneur: Maplehurst Livestock in Hinsdale; Finger Lakes Livestock Exchange in Canandaigua; and Cambridge Valley Livestock Market in Cambridge.

Data is collected at both the weekly sales and special replacement and feeder calf sales. Results are posted within 24 hours of the sale at the USDA Market News site https://www.ams.usda.gov/market-news/livestock-poultry-and-grain-list-reports.

The four Livestock Market Reporters attended a two day live animal evaluation training followed by a correlation with a panel of evaluators. To pass they had to score within 80% of the panelist's scores. In addition, they were required to take a test on grading regulations; again having to score an 80% success rate. Each year they must attend another correlation evaluation to assure that they are within grading standards.

In general, the program has been very well received by both the auction markets and producers. However, as this information is new, it is not always correctly interpreted. First, the prices published are not of every animal that goes through the auction. The report is intended to be a general representation of the cattle offered. Exceptionally poor cattle are not quoted, nor are the few that bring an exceptionally high price. Second, the prices are published based on the physical characteristics of the cattle – gender, weight, frame and muscle score. Other characteristics such as breed, management (e.g. pre-conditioned), and farm of origin does not affect how the cattle are classed. The following are the USDA Feeder Cattle Grade standards. Note that the standards apply only to cattle that are younger than 36 months of age.

The grade of feeder cattle is determined by 3 characteristics:

a. **Frame size**. Refers to the animal's skeletal size (body & length) in relation to age. Thus frame size is directly related to mature size. For feeder cattle this is the expected weight at USDA low Choice quality grade (Table 1). At the same age large frame cattle will be taller and longer bodied than smaller framed cattle. Classifications are Large, Medium and Small. Prices of small framed cattle are not reported. **(See Table 1)**

b **.Thickness.** Refers to muscle in relation to skeletal size. Thicker cattle will have a higher ratio of muscle to bone when fed to the same degree of fatness and will have a higher yield grade. Classifications are 1, 2 and 3. With the exception of Holsteins, prices of #3 cattle are not reported.

c. **Thriftiness.** Refers to apparent health of animal. Prices of unthrifty animals are not reported.

With this base information let's look at a Market News Report from a recent NYS Special Feeder Calf Sale. **(See Table 2)**

For each lot that comes into the auction ring, they record number of head, frame and muscle score, weight and price. In the example in Table 2, there was only one Medium and Large 1 (ML1) steer that weighed between 300 lb and 400 lb at that sale. In the 400-500 lb weight range you find that there were 10 steers that had a weighted average of 428 lb, a range in price of $135 - $147.50/cwt for a weighted average of $139.89/cwt.

The average reported is weighted so as to be a truer reflection of the cattle. Average Weight (weighted) is calculated as total weight of cattle in the weight range ÷ total number of head in that weight range. Average Price (weighted) is calculated as total dollars paid for all cattle in the weight range ÷ total pounds in the weight range. For example if there were 9 steers that weighed 320 lb and brought $135, and 1 steer that weighed 399 lb and brought $129, the straight average would be 360 lb at $131/cwt. Conversely, the weighted average would be 328 lb at $133/cwt. This provides a more transparent depiction of weight and price.

Here's another example from the same sale. **(See Table 3)**

First there are fewer cattle in each weight range, so you need to be cognizant of this before making grand conclusions. However, across all weight ranges you see a lower price paid compared to the ML1 steers. The buyers are telling you pretty consistently, that they do not want #2 muscled cattle. So, if you received prices

for your calves in this weight range, it's because your cattle are not well muscled.

In summary, USDA Market News Reports are a tool for you to use to learn the most realistic value of feeder cattle in NYS by providing animal and price information from a disinterested party. Not all cattle are reported: Small framed, beef breeds with #3 muscle score, unthrifty, lame or injured, and prices for a few that are exceptionally high or low.

At the bottom of each report is the name and contact information for the local Livestock Reporter and their Supervisor. If you have any questions, especially about your cattle and where they fit in the marketplace, they look forward to speaking to you.

Thanks again to the cooperating Auction Markets for their participation: Empire Livestock; Maplehurst; Finger Lakes Livestock Exchange; and Cambridge Valley. Funding from the NYS Department of Agriculture and Markets: "Stocker Cattle: Using Underutilized Grasslands to Improve Economic Viability of the Southern Tier While Providing Viable Careers for Beginning Farmers". ■

Table 1

Table 1. USDA Feeder Calf Frame Score[1]

Grade	Steers	Heifers
Small	<1100 lb	<1000 lb
Medium	1100 lb – 1250 lb	1000 lb – 1150 lb
Large	>1250 lb	>1150 lb

[1]Expected weight at low Choice and 0.5 inch backfat

USDA/MRP/AMS

Table 2

Feeder Steers Medium and Large 1

Wt Range	Avg Wt	Price Range	Average Price
300-400	390	145.00	145.00
400-500	428	135.00-147.50	139.89
500-600	538	135.00-150.00	141.50

Table 3

Feeder Steers Medium and Large 2

Head	Wt Range	Avg Wt	Price Range	Average Price
6	300-400	345	92.50-115.00	108.85
2	400-500	469	90.00-112.50	101.32
3	500-600	539	102.50-110.00	107.51

2019 Food System Outlook

Kristen Park, Extension Associate
Dyson School of Applied Economics and Management, Cornell University

The U.S. Food Marketing System in the United States is responsible for getting food from our farms into the hands of our consumer. It transports and stores, packages, processes, handles, distributes, markets, and retails our food.

The marketing system moves food produced from farms through a variety of marketing channels to the end consumer. Changes in the world around us exert forces and pressures on this system. The size, complexity, and reactive nature of the system allow it to flex but not break with these pressures. When it flexes, the marketing channels in the system respond like water channels in a delta. Some channels thrive and grow larger while bending through different courses, others might diminish and dry up, and others arise in areas in which they never before occurred.

Table 1. Economic Snapshot

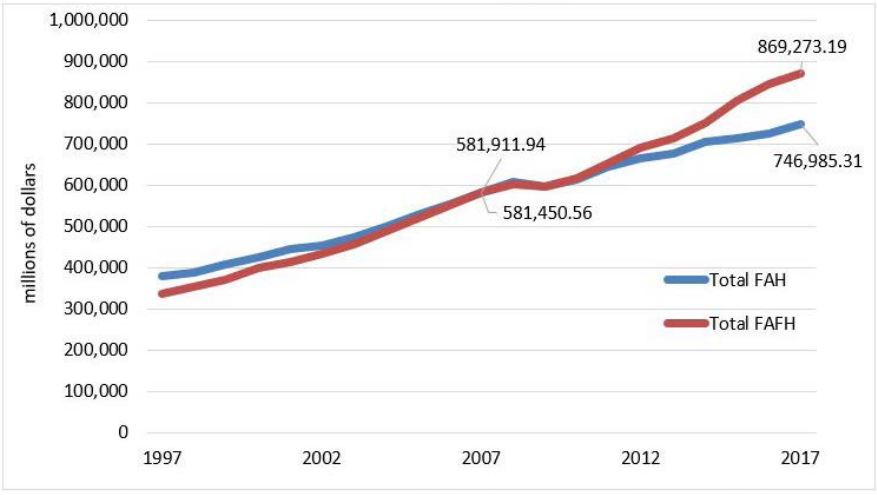
Economic Measure	2015	2016	2017	2018 (forecast)	2019 (forecast)
Real GDP (annual % chg)[1]	2.9%	1.6%	2.2%	2.9%	3.0
Real Disposable Personal Income (% chg)[1]	4.1%	1.7%	2.6%	2.9%	na
Consumer Price Index (% chg)[2]	0.1%	1.3%	2.1%	2.4%	2.4
Consumer Price Index, All Food & Bev. (% chg)[2]	1.8%	0.3%	0.9%	1.3%	na

[1] Historical data from Bureau of Economic Analysis; GDP forecast from The Conference Board; 2018 DPI forecast from
[2] Historical data from Bureau of Labor Statistics; forecast by International Monetary Fund.

The largest volume of food by far travels through the grocery retail channel. A general rule of thumb is that about 75% of the volume of food moves through food-at-home markets, such as supermarkets. Roughly 25% of food moves through food-away-from-home markets, such as restaurants, accommodations, schools, etc.

When describing how consumers spend their food dollars, however, the model changes. In 2017, consumers spent almost $870 billion on food-away-from-home and only $750 billion on food-at-home (Figure 1).

Figure 1. Food Expenditures, Food-at-Home Versus Food-away-from-Home



Over half, about 54%, of consumers' food expenditures are spent on food-away-from-home, while 46% is spent on food-at-home. This is because cost of food purchased in the form of meals served through restaurants and other food service establishments includes more than just the food, it includes the restaurant labor, real estate, etc. It is more expensive than purchasing the components for meals prepared at home.

U.S. Food Prices

The 2018 gross domestic product (GDP) forecast is looking better than 2017, and the positive effects from this are stronger personal income (Table 1). Real disposable personal income has been looking up since 2017. The forecast for real disposable personal income in 2018 also looks positive and on pace with the consumer price index. The expected consumer price index (CPI) for food in 2018 of 1.3% is higher than last year, in 2017, but is not keeping pace with the overall CPI for all goods which is expected to average 2.4% for 2018.

While prices for food-away-from-home, purchased primarily through restaurants, are forecast to increase between 2 to 3 percent, 2018 food-at-home prices, purchased primarily from supermarkets, are stagnant after 2 years of food deflation. (Table 2). In general, however, the prices forecast for various food at home categories in 2019 are slightly positive on top of some price swings

Table 2. Changes in Consumer Price Indexes for Various Foods

	2017	Oct 2017 to Oct 2018	2018 forecast	2019 forecast
	% change	*% change*	*% change*	*% change*
All food	0.9	1.2	0.75 to 1.75	1.5 to 2.5
Food away from home	2.3	2.5	2.0 to 3.0	2.0 to 3.0
Food at home	-0.2	0.1	0.0 to 1.0	1.0 to 2.0
Meats, poultry, and fish	-0.1	-0.4	0.5 to 1.5	0.5 to 1.5
Meats	-0.6	-1.2	0.0 to 1.0	0.25 to 1.25
Beef and Veal	-1.2	0.6	1.25 to 2.25	1.0 to 2.0
Pork	0.6	-3.5	-0.75 to 0.25	-0.75 to 0.25
Poultry	0.2	-0.3	0.0 to 1.0	1.0 to 2.0
Fish and seafood	1.2	2.8	1.25 to 2.25	0.25 to 1.25
Eggs	-9.5	2.8	9.0 to 10.0	-1.0 to 0.0
Dairy products	0.1	-0.2	-1.0 to 0.0	3.0 to 4.0
Fats and oils	0.8	-0.4	-0.25 to 0.75	-3.0 to -2.0
Fruits and vegetables	-0.2	-0.4	0.25 to 1.25	1.5 to 2.5
Fresh fruits & vegetables	0.2	-0.5	0.75 to 1.75	2.0 to 3.0
Fresh fruits	0.5	-1.5	1.0 to 2.0	2.0 to 3.0
Fresh vegetables	-0.1	0.7	0.0 to 1.0	2.5 to 3.5
Processed fruits & vegs.	-1.6	-0.1	-1.25 to -0.25	-1.0 to 0.0
Sugar and sweets	-0.1	0.3	0.0 to 1.0	0.0 to 1.0
Cereals and bakery products	-0.5	0.5	0.25 to 1.25	2.0 to 3.0
Non-alcoholic beverages	0.2	0.9	-0.5 to 0.5	-0.25 to 0.75

USDA-ERS, Food Price Outlook, http://www.ers.usda.gov/data-products/food-price-outlook.aspx#26630

In general, however, the prices forecast for various food at home categories in 2019 are slightly positive on top of some price swings between 2017 and 2018. The most notable exception is a projected decrease for prices for fats and oils in 2019. Some stronger increases are forecast for dairy products (3.0%-4.0%), fresh fruits (2.0%-3.0%), fresh vegetables (2.5%-3.5%), and cereal and bakery products (2.0%-3.0%).

Producer Prices

Producer price indexes (PPI) fluctuate more widely than CPIs, reflecting price swings due to growing conditions, harvests and input supply costs as well as demand.

Meat and egg prices, including farm level and wholesale level beef prices, wholesale pork prices and egg prices are all expected to decrease in 2019. Increases in production in these commodities drive most of the decreases in price forecasts for 2019 (Table 3).

Dairy farmers looking for relief from low prices may see them in 2019. Farm level milk prices are predicted to increase 3.0%-4.0%, while wholesale milk prices will remain stable.

The PPI forecasts for fruits and vegetables, for fresh markets and processing, is not encouraging. PPIs for fruits and vegetables in 2018 are lower than for 2017 and are expected to be lower yet in 2019, decreasing from -4.0%- -3.0% for fruits and decreasing -3.5%- -2.5% for vegetables in 2019 over and above the decreases seen in 2018. Large crops for apples and strawberries, two of the largest domestic commodities in terms of value, were seen in 2018. The apple crop will affect the marketing year in 2019.

Table 3. Changes in Producer Price Indexes, 2016 through 2019

Item	2016	2017	Forecast 2018	Forecast 2019
	% change	*% change*	*% change*	*% change*
Unprocessed foodstuffs and feedstuffs*	-10.5	2.9	NA	NA
Farm level cattle	-19.4	-1.7	-3.5 to -2.5	-2.0 to -1.0
Wholesale beef	-16.7	-0.7	0.5 to 1.5	-3.0 to -2.0
Wholesale pork	-2.1	3.2	-7.0 to -6.0	-2.0 to -1.0
Wholesale poultry	-3.6	0.7	-6.5 to -5.5	-1.5 to -0.5
Farm level eggs	-59.1	23.6	31.0 to 32.0	-15.0 to -14.0
Farm level milk	-3.0	8.6	-9.0 to -8.0	3.0 to 4.0
Wholesale dairy	-1.7	3.4	-2.5 to -1.5	0.0 to 1.0
Farm level soybeans	2.9	-2.3	-5.5 to -4.5	-5.0 to -4.0
Wholesale fats and oils	-0.8	4.1	-2.75 to -1.75	-3.0 to -2.0
Farm level fruits	11.7	6.6	-3.0 to -2.0	-4.0 to -3.0
Farm level vegetables	1.0	6.4	-9.0 to -8.0	-3.5 to -2.5
Farm level wheat	-20.4	7.8	14.0 to 15.0	4.0 to 5.0
Wholesale wheat flour	-7.3	1.7	-0.5 to 0.5	-4.0 to -3.0

NA = Not available.
NA = Not available.
USDA ERS Food Price Outlook https://www.ers.usda.gov/data-products/food-price-outlook/food-price-outlook/#Producer%20Price%20Index

Table 4. U.S. Agricultural Trade, 2015 – 2019, Year Ending September 30

Item	2015	2016	2017	2018*	2019*
			billion dollars		
Exports	139.8	129.6	140.2	143.4	141.5
Imports	114.2	113.0	119.1	127.6	127.0
Balance	25.5	16.6	21.1	15.8	14.5

*Forecast, fiscal year ending September 30.
Source: Compiled by USDA using data from U.S. Census Bureau, U.S. Department of Commerce.
http://usda.mannlib.cornell.edu/usda/current/AES/AES-11-29-2018.pdf

U.S. agricultural trade is stabilizes domestic supplies, prices, and demand. Ag exports have been larger than imports since 1960 and have been able to help ease the trade deficit for non-ag merchandise. Exports for 2019 are forecast at $141.5 billion, imports at $127.0 for a trade balance of $14.5 billion (Table 4).

The largest declines in exports in 2018 have been in soybeans and cotton while increases in 2018 have been in corn and wheat. The decline in soybeans in 2018 can be attributed to the decrease in exports to China, the decline in cotton, a softening of the world market for cotton.

For 2019, exports of horticultural products which will continue to grow. At the same time, imports of almost all major product categories are expected to drop slightly in 2019, with the exception of oilseed and dairy products imports which are expected to remain stable. ■

Requirements for Productive and Passionate Employees

Dr. Bob Milligan

Think about the last agricultural magazine or online newsletter your perused. Many to most of the articles were about productivity of crops or livestock. In this article we focus on a key determinant of crop and animal productivity - employee productivity and passion.

Just as achieving excellent crop or animal productivity is complex, so is employee or workforce productivity and passion. Furthermore, excellent crop and animal productivity requires great employee productivity and passion.

We start our discussion with a question: Who is responsible for employee productivity - the employee or owners/leaders/managers? The answer of course is both! Let's, however, look deeper. Current employee productivity is primarily the responsibility of the employee. In the long run, though, EVERYTHING related to employee productivity and passion is controllable by the owners/leaders/managers - and **thus is their responsibility.**

Employee productivity and passion is determined by:

1. Required knowledge, skills, experience, and personal characteristics - IQ, personality, and EQ - to succeed.

2. Clarity of:
• Business mission and vision, values, and business direction and challenges.
• Job requirements, responsibilities and performance expectations.

3. Supportive leadership and supervision.

We look at each below.

Required Knowledge, Skills, Experience, and Personal Characteristics to Succeed

Meeting this responsibility, obviously, begins in selection and hiring whether a new hire or a promotion. Hiring or promoting a candidate without the knowledge, skills, experience, and personal characteristics to succeed in the position is referred to as a mis-hire. A key goal of hiring and promoting is to minimize the probability of a mis-hire.

To reduce the likelihood or a mis-hire, I suggest identifying the three to five competencies that will determine success in the position. Competencies can be skills, knowledge, experience, and personal characteristics (attitudes and behaviors). These competencies are them the focus of recruitment and especially selection with interview questions written for each competency.

Hiring or promoting an individual with the competencies to succeed is only the beginning of meeting this responsibility. Initial training and coaching is necessary regardless of the skill level of the new hire. The new hire (or promoted employee) must learn and master how tasks are completed and responsibilities implemented at your farm. I recommend establishing a training and coaching program including a weekly meeting to assess progress and address any concerns.

Continuing training and development is necessary to meet changing technologies, new responsibilities, and the necessary continuous improvement to keep the farm profitable. I recommend an annual meeting to refine the training and development plan.

Clarity - Chalking the Field

Because passion for the position and the farm is necessary for outstanding productivity, clarity or chalking the field, as I like to call it, has two components. The first - farm mission and vision, values, and business direction and challenges - is

required for engendering passion. You are passionate about your farm and you want your employees to have that same passion. To engender passion, employees need to know why what they are doing is important and why the farm exists.

Your mission explains what your farm is seeking to accomplish. It is crucial for you as you develop strategy. Vision and values are crucial for employees as they explain the WHY. Unfortunately, articulating the vision you have for your farm is not easy because explaining emotions is difficult. Think about when you have tried telling someone why you love them. I encourage you to spent time thinking about and articulating why you are passionate about your farm and then continuously communicate that to your employees. Employees also need to know where the farm is, where it is going, and the challenges being faced. This may be even more important in these challenging times. Think about a time you were pretty sure about something, but the people involved were not telling you what was happening. I am pretty sure you are not thinking positive emotions. Employees are the same. To be passionate about the farm, they need to know where it is, where it is going, and the challenges faced.

The second chalking the field challenge is to ensure that every employee knows their job requirements, responsibilities, and performance expectations. The following are required to have complete clarity:

1. Every detail clearly explained.

2. Explain WHY the expectation is important and/or needed.

3. There are opportunities to ask questions and, where appropriate, provide input (engagement).

4. The detailed description can be accessed by the employee (employee manual, job description, policy manual, etc.).

This detail provides the answer to the first question all employees ask - What is expected of me?

The second key employee question is: how am I doing or am I winning? This question is answered by providing large quantities of quality feedback. Remember that there are three kinds of feedback, not two. Positive feedback should be frequent, specific, and provided immediately. It is crucial to maintaining passion especially in tough times. Redirection feedback is crucial for continuous improvement. You use redirection to correct improper behavior or improve unsatisfactory performance. You are redirecting to success. Only when you are certain that redirection feedback has failed should you use negative feedback. With negative feedback you provide the employee a choice of a) correcting behavior or improving performance or b) incurring a specified consequence.

Supportive Leadership and Supervision

We know that healthy crops and animals are necessary for great productivity and that a healthy workforce is necessary. Increasing, we are also recognizing that a healthy farm business culture is necessary to have productive and passionate employees. To that end, we can think of a farm or business needing to be both smart and healthy.

Smart is what we have always focused on; The fundamentals of business - decision-making, operations (production), strategy, marketing, finance, etc. are critical.

Healthy we have not focused on although it may be as important to passionate and productive employees, a thus farm business success. Healthy relates to the business culture and is characterized by high productivity, low turnover among great employees, high morale and job satisfaction, minimal confusion, and minimal politics.

How does farm culture contribute to employee productivity and passion? The answer is great leadership and excellent supervision. The leaders - mostly owners - must lead the way by articulating the vision, clarifying the values, and formulating a winning strategy. They then must communicate these often and lead by example. Excellent supervision includes active listening, proactively addressing employee issues, and providing the clarity and feedback discussed in the previous sections. ■

Tastes of NY: New Grand Island Welcome Center Features Cafe, Retail Shop

Michele DeLuca

Article appeared in the Niagara Gazette on Jan 20, 2019. Reprinted with permission by author.

Those who have passed by the Western New York Welcome Center while driving across Grand Island, might be surprised to learn there is a restaurant and retail shop inside, featuring products made in New York state.

The Welcome Center is one of 11 across the state with Taste New York Markets inside where locals and travelers can order lunch or purchase their favorite local and state-produced products including chocolates, sauces, honey, baked goods and so much more. The Grand Island facility is staffed by Cornell Cooperative Extension Services employees.

The Visitor Center also hosts a dog park, electric car charging stations, a children's playground and a "walk of fame" of notables from Western New York, including Lucille Ball, Wolf Blitzer, Tim Russert, Presidents Grover Cleveland and Millard Fillmore and others. Renee Day, Taste New York Market manager, took a few minutes to answer some questions about what visitors — both locals and tourists —will find when they pull off the Whitehaven exit of the I-190, and step inside.

QUESTION: I am so surprised to see this place. Can you tell me what's here, food-wise?

ANSWER: We have vendors from all over New York State that are selling their food products. We are trying to put a WNY flavor on it so bit by bit we're adding vendors that are local.

Q: What kind of the products do you sell in the market?

A: Currently we have some big names you are probably familiar with. We have Perry's Ice Cream and Charlie the Butcher roast beef. We have DiCamillo's bread and on the weekends we carry their doughnuts and pastries. We're also trying to work with some little, unknown places like Merle's Maple Farms for their maple products and others.

Q: What's the goal?

A: The goal is to help New Yorkers, and especially at this location — New Yorkers from the five Western New York counties — that want to grow, produce or package a product and get it to market.

Q: Are people as surprised as I am when they see this place?

A: They are. The building is just magnificent. It's an absolute beautiful building and its a state of the art facility.

Q: What sort of food do you prepare in the cafe?

A: We're going to be adding soups, so there will be a soup and sandwich option. We also have Sahlen's hot dogs and we have LaNova Pizza. You can order a Dick and Jenny's Panini, including a turkey pesto and a bacon ham and maple dijon panini, and we have Dick and

A trio of Cornell Cooperative Extension staffers hold local products featured at the Taste NY cafe and retail store in the new Welcome Center on Grand Island. They are from left, Renee Day, the market manager, Molly Vigress, and Kris Lowden.

The exterior view of the new WNY Welcome Center which features a small dog park, kids playground, and electric car recharging stations.

> "The goal is to help New Yorkers, and especially at this location — New Yorkers from the five Western New York counties — that want to grow, produce or package a product and get it to market."

Jenny's bacon breakfast wraps. We working on the menu because we want to make sure we have a Western New York flavor.

Q: What is the whole point of the cafe?

A: The cafe is to let people taste WNY restaurant food and things they may have heard of before but never had a chance to try.

Q: Beside the market and cafe, I've seen the outdoor playground, dog park and car charging stations. What else is at the Welcome Center?

A: It's basically historical and tourist information on Western New York. It's very colorful. There's a map that's on the floor. People can come and speak to us about travel information on Western New York. We have maps and there are interactive kiosks that give information about things to do like kayaking or birding. There's a lot of outdoors information there. There's also an "I Love NY" kiosk where you can find things to do whether its finding all the latest breweries or following the wine trail or kid friendly activities. It gives you information on what to do in Western New York and throughout the state as well.

Q: How can people get in touch with you to sell their products?

A: They can do it at our website erie.cce.cornell.edu/taste-ny, and there is a place where they can get a vendor application or an email address and phone number to get in touch with us.

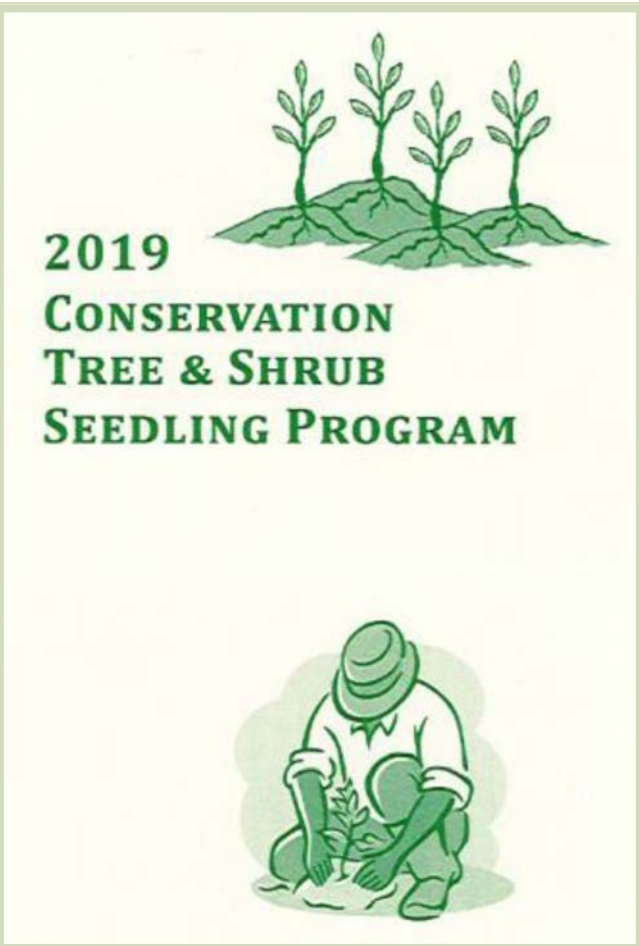
The cafe and market are open from 7 a.m. to 7 p.m. every day except Christmas. To learn about menu and retail specials follow "Taste NY Grand Island" on Facebook, visit erie.cce.cornell.edu/taste-ny or call (716)773-0970. ■

Local Farms
LOCAL FLAVOR

TASTE NY
Vendors Needed!

We are accepting applications from potential vendors of "retail ready" New York State food, beverage, farm and non-food products for the Taste NY Market located at the Welcome Center in Grand Island, NY.

You can find more information and the vendor application at erie.cce.cornell.edu



Order forms for the 2019 Conservation Tree and Shrub Seedling Sale are now available from Erie County Soil and Water Conservation District. Thirty-seven species of trees and shrubs are available this year. The one to three-year-old bare root seedlings, which range in size from 6 to 24 inches, are available in lots of 10 to 500. The District is also offering a selection of bare root four-year-old evergreen transplants which are more mature trees with thicker stems, more branching and more developed roots. The District also stocks marking flags, fertilizer tablets, and tree shelters to help promote the success of your plantings.

Order forms may be obtained by stopping at the District Office at 50 Commerce Way in East Aurora (behind Post Office), by calling (716) 652-8480 ext. 5, or by printing the order form from the District website at www.ecswcd.org. Orders are due by March 15, 2019 and pick-up will be on Saturday April 27, 2019 at The Fairgrounds in Hamburg, NY

27th Annual Rural Landowner Workshop

Saturday, March 2, 2019
Pioneer Central School, County Line Rd.
Yorkshire, NY
Registration begins at 8:30 a.m.
Cost: $30.00 per person
No Refunds. No Walk-Ins Please.
For more information and to register, go to:
http://allegany.cce.cornell.edu/

Woodlot Regeneration: Strategies to Grow

Ecology and Management of American Beech

Birds and Invasives

Black Bears and Citizen Science

Are You Growing Your Best Timber?

Spotted Lanternfly

Introduction to Site-Weed Management Planning

Chasing Ciscoes: Native Fish Restoration in New York

Establishing a Successful Wildlife Food Plot

2019 Erie/Niagara Regional Vegetable Meeting

Tuesday, March 26
Eden American Legion

Pre-registration required by March 24.
Meeting cost is $15 for CVP/Erie Ag enrollees, $25 for non-enrollees.
Visit cvp.cce.cornell.edu/events.php or call 585-406-3419 to pre-register.

8:30 – 8:35 am
Welcome, DEC credit sign-up *1.5 DEC credits in categories 1a and 23 have been requested*

8:35 – 8:50 am
Crop Insurance for Diversified Produce Farms
Sharon Bachman, Cornell Cooperative Extension of Erie County
Crop insurance is a backbone of the risk reduction toolkit available to produce growers. Learn what options are available for insuring a diverse array of crops.

8:50 – 9:15 am
Spotted Lantern Fly Update
Jamilyn Woodside, NYS Ag & Markets
Spotted Lantern Fly is a quarantined pest that threatens NY horticultural production. This talk will outline the regulatory requirements in place to prevent the spread of SLF, cover identification and reporting of SLF, and discuss any known control tactics.

9:15 – 9:35 am
Weed Seed Bank Dynamics and Management
Elizabeth Buck, Cornell Vegetable Program
This talk will describe methods to draw down the weed seed bank and prevent deposition of new seeds as part of an integrated weed management program.

9:35 – 10:05 am
Better Fungicides for Alternaria Management in Broccoli
Christy Hoepting, Cornell Vegetable Program
Weather conditions during the 2018 growing season were favorable for Alternaria Leaf Spot, a major disease of cole crops. There are promising fungicide trial results that could benefit conventional growers by improving ALS control in broccoli and other cole crops.

10:05 – 10:15 am Break

10:15 – 10:35 am
Tarping for Organic Vegetable Production
Haley Rylander, School of Integrated Plant Sciences, Cornell
The use of tarps is currently a hot topic in organic farming. This talk will discuss how tarps can successfully reduce weed pressure and facilitate the adoption of reduced tillage.

10:35 – 11:05 am
Using Soil Electrical Conductivity for Precision Water Management
Erasmus Oware, University at Buffalo
There is a growing need to develop efficient irrigation management practices. The results of a 2 year research project using sensor-based irrigation management will be discussed.

11:05 – 11:15 am
Mobile Marketing: the Eat Fresh WNY Tool
Cornell Coop. Extension of Niagara County Staff
A user-friendly mobile app that directs consumers to local farm stands and pick-your-own operations in WNY is available for use to increase your business traffic. CCE Niagara staff will provide an overview of their marketing tool.

11:15 – 11:30 am
Farm-to-School Session Panel Introductions *TBA*
Each panelist will introduce themselves and outline their role in Farm-to-School marketing partnerships.

11:30 am – 12:25 pm
Farm-to-School Moderated Panel Discussion
A moderated panel will discuss school food purchasing, and how local farms can sell their produce to schools. The panel will include representation from a large school district, a small school district, a small farm, a distributor, and a produce aggregator.

12:25 – 12:30 pm
Wrap-up, questions, and DEC credit pick-up. ■

See and Be Seen

by Timothy X. Terry, Harvest NY

Photo by Jason Edwards on Unsplash

By now the 2018 cropping season has concluded except maybe for getting those last few loads out of the manure storage to carry you safely through until spring. So the next order of business, over the winter, would be to systematically bring each piece of equipment into the shop or garage and repair or replace as necessary to get it ready for next spring. Unfortunately, even as thorough as this process may be, the lighting and reflective markings seldom get more than a lick-and-a-promise.

Fortunately, there is a federal, nationwide standard for lighting and marking on agricultural equipment that has been accepted by the National Highway Traffic Safety Administration (NHTSA) and the U.S. Department of Transportation (USDOT). This standard is based on the American Society of Agricultural and Biological Engineers (ASABE) Standard S279.14. The Standard is intended for originally manufactured (new) agricultural equipment, however, it is a good guideline to follow when maintaining and/or retrofitting equipment. What follows is a synopsis of that standard (at least the most likely relevant points).

Tractors & Self-Propelled Equipment

- Two head lamps, two red tail lamps and at least two flashing amber warning lights must be mounted at the same height and spaced laterally as wide as possible. Work lamps or general service lamps projecting to the rear shall not be illuminated during highway travel.
- At least two flashing amber warning lights visible from both front and rear must be used when the machine is at least 3.7 m (12') wide. The lamps shall be mounted between 0.4 and 3.7 m (1.3' and 12') high and within 400 mm (16".) of the lateral extremities of the machine, and shall flash in unison. The extremity dimension includes such items as dual wheels, wide axels, headers, etc.
- Turn signals must be provided.
- For machines designed to exceed 40 km/h (25 mph), at least two red rear facing stop lamps must be mounted that illuminate when operator has activated the brake control. If the machine is less than 1200 mm (4') wide, only one stop lamp may be used, and should be centered as much as possible.
- Machines that travel at less than 40 km/h (25 mph) may be equipped with red rear facing stop lamps. If equipped, then two red tail lamps must be mounted at the same height and spaced laterally as wide as possible.
- Two red retro reflective devices must be visible from the rear.
- Machines wider than 3.7 m (12') shall have conspicuity material (i.e. – reflective tape) visible from both the front and rear.
- There are requirements for rotating beacons, if the agricultural equipment is equipped with them.
- One slow moving vehicle (SMV) identification emblem must be installed on the machine.
- There are CAN bus terminal receptacle requirements, if the agricultural equipment is equipped with them. (CAN bus is a vehicle wiring standard designed to allow microcontrollers and devices to communicate with each other in applications without a host computer)

Non Self-Propelled Equipment

- Equipment that obscures the SMV emblem of the propelling machine shall be equipped with an additional visible SMV emblem.
- Equipment that extends more than 1.2 m (4') to the left or right of the propelling machine shall have at least one strip of yellow retro reflective material visible from the front and at least one strip of red retro reflective material visible from the rear applied to indicate the extreme projections of the equipment.
- Equipment more than 3.7 m (12') wide must have at least two strips of yellow retro reflective material visible to the front and at least two strips of red retro reflective material visible to the rear of the machine. Strips should be a minimum of 50 mm (2") wide by 230 mm (9") long, within 400 mm (16") of the lateral extremities, and spaced evenly across the width but no more than 1.8 m (6') on center.
- Equipment extending more than 5 m (16'-5") to the rear of the propelling vehicle shall be equipped with at least one SMV emblem and shall have yellow retro reflective material visible from the left and right sides.
- Equipment that obscures the tail lamps, flashing warning lamp, or stop lamp of the propelling machine, shall be fitted as appropriate with lighting to take the place of the lamp(s)

obscured.

- Equipment that obscures the front or rear flashing lamps of the propelling machine shall have at least two amber flashing lamps symmetrically mounted to the machine, visible from the front and rear of the machine.
- Turn indicators shall be provided if necessary due to obstruction of turn indicators on the towing vehicle.
- Stop lamps shall be provided for machines designed to travel at speeds above 40 km/h (25 mph) if necessary due to obstruction of turn indicators on the towing vehicle.
- All required lamps on non-self propelled equipment shall be connected to a seven terminal plug conforming to SAE J560.

So there you have it – a lot of words, but not hard to follow. Your local auto parts store should have all the necessary lamps, reflectors, and connectors.

While maintaining lighting and reflectors may seem trivial, consider this: Equipment is getting larger, but rural roads are not. Work days are getting longer (sometimes 24-7) and equipment is traveling on the roads from dusk to dawn. There are more non-farm people, unfamiliar with agricultural equipment, traveling these roads at high rates of speed. A negligence lawsuit can devastate a farm business, and a single life is priceless.

You do the math… ■

Cornell Cooperative Extension | Erie County

Master Gardeners

2019 Education Day

Speakers include:

Dr. Paul Curtis, Cornell
Managing Munching Mammals

Bob Shindelbeck, Cornell
Get the Dirt on Soil

Dr. Wayne Gall
What's Bugging Your Garden: The Good, the Bad, and the Not-So-Ugly

March 16, 2019
8:30-3:00
Classic V Banquet Center
2425 Niagara Falls Blvd.
Amherst
The public is welcome.
Cost: $55 Public
(Discounted rates for current Master Gardeners)
Space is limited.
Registration info available at
erie.cce.cornell.edu

Cornell Cooperative Extension is an employer and educator recognized for valuing AA/EEO Protected Veterans, and Individuals with Disabilities.

March 15th NYS Dry Bean Meeting & Variety Evaluation

The 2019 NYS Dry Bean Growers Meeting and Variety Evaluation will be held Friday, March 15, from 8:30 am – 12:30 pm, at Cornell AgriTech at the New York State Agricultural Experiment Station, Food Research Lab Conference Room, 665 W. North St., Geneva, NY 14456.

Space is limited and pre-registration is required by March 12th. Cost is $10 per person and includes lunch. For more information and to register on-line by credit card, Go to Events at: http://cvp.cce.cornell.edu. Or, call Julie Kikkert at 585-394-3977 x404 to reserve a spot and pay with cash or check at the door.

Farmland for a New Generation New York

If you are a new farmer looking for farmland OR a farmer or landowner looking to lease or sell your farm, we have the place for you to connect with each other!

American Farmland Trust

American Farmland Trust, through support from the State of New York, launched the Farmland for a new Generation New York Resource Center website.

Modeled after the successful Hudson Valley Farmland Finder website, the FNG-NY Resource Center includes an online, searchable database of farmers seeking land and landowners looking to make their land available to farmers. The new website database includes profiles of farmers and landowners from across New York state.

If you are a farmer or landowner who is interested in creating a public profile, you can do so on the website by going to https://nyfarmlandfinder.org/. Though general information is available publicly on the site, only individuals – both farmland seekers and farmland owners – who create a profile and complete an intake process with American Farmland Trust staff will have access to your contact information.

Please contact Diane Held at (716)652-5400 x166, dbh24@cornell.edu if you have any questions about this new online resource.

2019 Garlic School

March 20, 2019 | 9:00 AM - 2:30 PM
First United Methodist Church, 8221 Lewiston Rd (Rt 63), Batavia, NY 14020

Save the date for the 2019 Garlic School! Hear about the latest research trial results and insect and disease issues. Open discussion encouraged! Cost: $15 CVP enrollees; $25 all others. Registration is available online at https://cvp.cce.cornell.edu/event.php?id=1099. Lunch included. For more information, contact Christy Hoepting at cah59@cornell.edu, 585-798-4265 x38, or Robert Hadad at rgh26@cornell.edu or 585-739-4065.

Would you bet the farm on red?

Natural disaster can strike at any time!

Don't leave your farm's financial future to chance...

If you suffer a loss this year, would you be able to plant next year? Crop insurance can help protect you and your family from losses caused by bad weather and volatile prices.

Be sure you don't miss the following sales deadlines!

March 15: Barley (spring), Beans (dry, green), Cabbage, Corn, Forage Seeding (spring), Grain Sorghum, Green Peas, Oats (spring), Potatoes, Soybeans, Sweet Corn, Tomatoes (processing), Whole Farm Revenue (early fiscal filer)

May 1: Nursery (field, container)

July 31: Forage Seeding (fall)

Sep. 30: Barley (winter), Forage Prod., Wheat (winter)

Nov. 15: Apiculture, Pasture Ranchland Forage (PRF)

Nov. 20: Apples, Grapes, Peaches, Tart Cherries, Whole Farm Revenue (late fiscal filer)

Monthly: Dairy, Swine (Livestock Gross Margin)

Daily: Milk (Dairy Revenue Protection)

To locate an RMA agent visit: **http://cli.re/gzPVWy**

To learn how you can apply crop insurance to your risk management strategy and about crop insurance products available to New York farmers visit: **https://agriskmanagement.cornell.edu**

Cornell CALS
College of Agriculture and Life Sciences

USDA

Master Gardener
Cornell Cooperative Extension

2019 CCE Erie County Master Gardener College Scholarship

- All high school/home school college-bound seniors who reside and attend school in Erie County are encouraged to apply.
- Scholarship information and applications may be obtained at the following website:

erie.cce.cornell.edu/gardening/annual-hs-scholarship

The application deadline is April 15, 2019.

SAVE THE DATES

2019 CORN, SOYBEAN & SMALL GRAINS, AND FORAGE CONGRESSES

Jan 9th	Jan 10th	Feb 6th	Feb 7th	Feb 27th
Corn Congress	Corn Congress	Soybean Congress	Soybean Congress	Forage Congress
10 a.m. - 3p.m.	10 a.m. - 3p.m.	10 a.m. - 3p.m.	10 a.m. - 3p.m.	10 a.m. - 3p.m.
Batavia NY	Waterloo NY	Batavia NY	Waterloo NY	Mt. Morris NY
Quality Inn & Suites 8250 Park Road	Quality Inn Former Holiday Inn 2468 Route 414	Quality Inn & Suites 8250 Park Road	Quality Inn Former Holiday Inn 2468 Route 414	New location! CCE-Livingston County Auditorium 3 Murray Hill Drive

https://nwnyteam.cce.cornell.edu/eventsphp

Mark Your Calendar to Join Us! Check Our Website for Details!

Local Food Distributing & Marketing

Agricultural Impacts 2018

Cheryl Thayer, Harvest NY

(from L-R) Bridget O'Brien Wood, Buffalo Public Schools Food Service Director, Cheryl Thayer, Harvest NY Specialist, and Paul Fenton, Fenton Farms, talk supply chain logistics in getting their product to the doorsteps of Buffalo's schools. It takes a village to make it happen, in this case, a great partnership with Eden Valley Growers & Boulevard Produce.

Photo Credit: Photo by Josh Baldo, courtesy of /american Farmland Trust

2018 was a busy year for the local foods program! We dedicated our time to advancing existing programs and cultivating new programs, always being mindful to be true to our team's goal of growing the New York food and agricultural economy. Below is a summary of our core projects.

Farm to Institution in Western NY

Farm to Institution (F2I) has always been a signature program area for our local foods team, recognizing early, the incredible potential to leverage public dollars to stimulate economic development and improve the health of New Yorkers. The opportunity cannot be understated, as a recent report published in the New York Academy of Medicine so clearly articulated. "Through its agencies and public facilities, New York State spends more than $957 million to feed approximately 6.6 million people annually. Increasing local food purchasing from its estimated baseline of 10% to 25% of public plate dollars has the potential to improve the diets and health of 6.6 million New Yorkers and generate almost $208 million in new economic output in NYS"1 Bulleted below are our F2I contributions in 2018:

- Our Farm to School (F2S) partnership with Buffalo Public Schools wrapped up its fourth year, with significant program growth realized. In the 2018-19 school year, the F2S program expanded to serve the 30K students who participate in the National School Lunch program, resulting in over $1M of NYS purchases to date. Looking ahead to the 2019-20 school year, we are building networks and supply chains, with the goal of purchasing a considerable amount of New York proteins and expanding the F2S program to serve students in other meal programs, to include summer meals, Saturday academies through the Community Schools, and after school snacks and suppers.

- We partnered with Hamburg Central School District to participate in the New England Farm to School Institute, a unique year-long professional learning opportunity for K-12 schools. The action plan that we developed during our retreat has already begun to catalyze considerable F2S development within the district.

- We remain active and engaged partners on the:

 - American Farmland Trust (AFT) Farm to Institute NYS (FINYS) Leadership Team and serve on the Advisory Board of two of their key projects: The Buyer Learner Center and the NY Farm to School Institute. In addition, we were thrilled to partner with AFT in the production of a video highlighting the complex nature involved in developing localized supply chains to serve institutional markets.

- Healthy Food in Healthcare Work Council, an effort spearheaded by the Buffalo Niagara Medical Campus (BNMC), with a core focus on increasing the procurement of New York farm products by their member hospitals and health care institutions. The Council was established as a result of a Local Food Promotion Program (LFPP) planning grant, which Harvest NY was a key partner on. Additionally, the results of the planning grant led to BNMC being awarded a 2018 implementation grant from LFPP in the amount of $351K, to further advance Farm to Hospital efforts on the medical campus.

Pictured: Corn is Buffalo Public School's September Harvest of the Month feature, a favorite amongst the 30K students that are able to enjoy it weekly. It takes a great partner like Eden Valley Gowers, pictured above, to be able to provide the district with enough ears to feed that many little mouths.

Photo Credit: Photo by Josh Baldo, courtesy of American Farmland Trust.

Ag Economic Development and Food Access Align

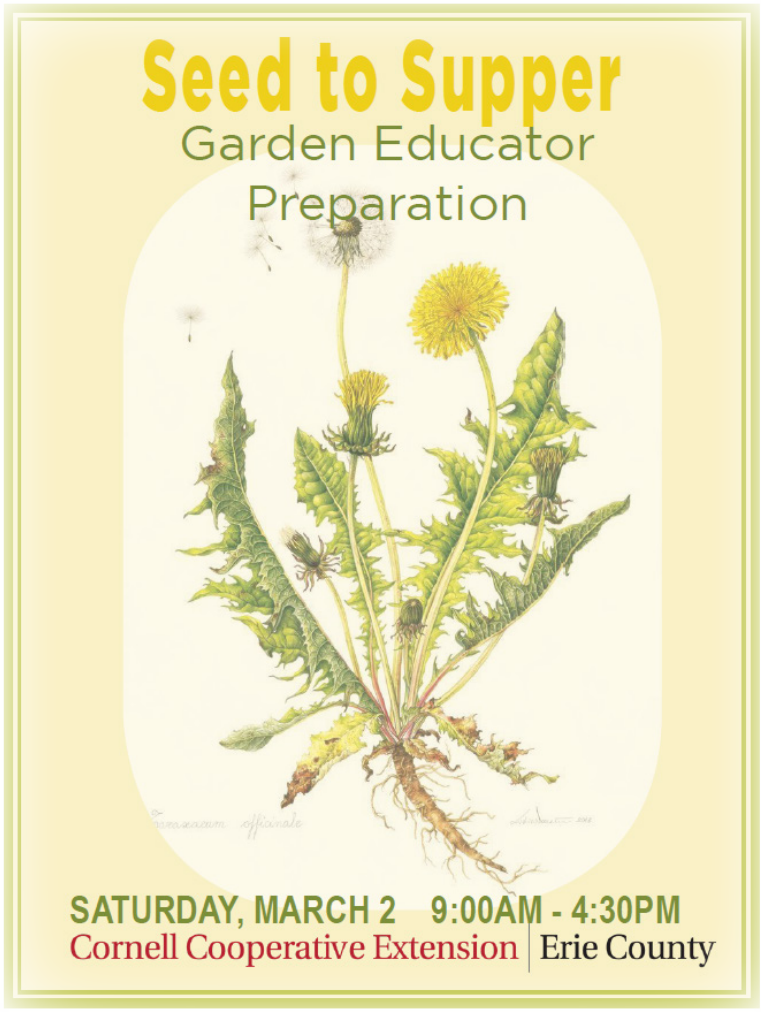
Cultivating the intersection between agricultural economic development and improved food access has always been a priority of our local foods program area. Previously, success has been realized through our involvement in the Double Up Food Bucks Program and the Buffalo Farm to School initiative. With a desire to expand our work in this program area, Harvest NY received a $65K planning grant from the United Way of Buffalo & Erie County & the General Mills Foundation. The primary goal of the project is to develop an interdependent relationship between three key groups: (1) low-income consumers in Buffalo, (2) local Community Supported Agriculture (CSA) farmers, and (3) cost-offset providers, which could be health insurance companies, employers, and/or Medicaid providers. The concept of a cost-offset, in this case, can be likened to the type of wellness perk often offered by insurance companies, for example, a discount on the cost of a fitness membership. What this project is proposing to do is offset the cost of healthy, whole food from Western NY farmers. If successful in garnering participation from the three key groups, the project can offer the following impacts: (1) increasing healthy food access and consumption for low- income residents in Buffalo, and (2) supporting local farmers by increasing CSA shares sold and/or providing them with new customers, which can contribute to a stronger local economy.

Food Policy Efforts Catalyze in Buffalo & Erie County

The Food Policy Council of Buffalo & Erie County (FPC), which was Chaired by Cheryl Thayer, was awarded a $42K capacity building grant from the United Way of Buffalo & Erie County and the General Mills Foundation. The outcomes of this project will include the development of a Strategic Plan, designed to optimize the internal interworking of the Council, and a Food Action Plan, which will serve as an external guide to inform future local food system planning and policy initiatives that align with our mission, which is to build and strengthen a sustainable and just regional food system through policy recommendations, awareness, education, and advocacy.

"Cultivating the intersection between agricultural economic development and improved food access has always been a priority of our local foods program area."

Pictured: Buffalo Public School students work alongside Buffalo Food Service Chef, Mike Laughlin, to make a September staple, Kale Apple Harvest Salad, which is packed full of New York farm fresh ingredients. Photo Credit: Photo by Josh Baldo, courtesy of American Farmland Trust.



Gardening that Grows Connection, Community & Confidence

Seed to Supper is a comprehensive beginner's guide to low-cost adult vegetable gardening. Garden Educators share practical, low-cost techniques for building, planning, planting, maintaining, and harvesting a successful vegetable garden.

Becoming a Seed to Supper Garden Educator will:

- Prepare you in ways of garden-based activities in your community.
- Empower you to share your knowledge and learn from one another.
- Engage you through peer to peer education and community based outreach.
- Connect you to neighbors and gardeners and others with skills in cooking nutrition, and advocacy.

Make a difference in your community!

Saturday, March 2, 2019
9:00 am - 4:30 pm
(SNOW DATE Saturday, March 9)
Location:
True Bethel Baptist Church of Buffalo
907 East Ferry St., Buffalo 14211

JOIN US!
For more information contact:
Sharon Bachman
sin2@cornell.edu
716-652-5400 (x150)

Did you fill out your 2019

CCE ERIE Annual AG Enrollment?

Register online:

CCE Erie and the Cornell Vegetable Program are partnering to facilitate a monthly women's discussion group on weekday evenings during the 2019 field season!

Each meeting will feature an established, innovative Farm-her leading the group on a tour of her operation and sharing her expertise on business management and production. Several guest speakers, as well as CVP staff, will be brought in to act as resource people for developing solutions to common production challenges.

The goal of the discussion group is to create a strong, professional resource network among farming women in western NY and to celebrate and recognize leading women growers. Thanks to a grant from Farm Credit East's Northeast AgEnhancement program, participation is free and will include scouting materials and factsheets.

The selected crop themes are centered around horticultural production, with an emphasis on vegetables. Each meeting will include a snack break and time to explore topics of interest to the group. Folks from all farming backgrounds and everyone from first-year farm staff to life-long growers are welcome to participate.

For more information, including the most recent meeting and speaker schedule, or to join the discussion group, please contact CCE Erie at (716)652-5400 x176.

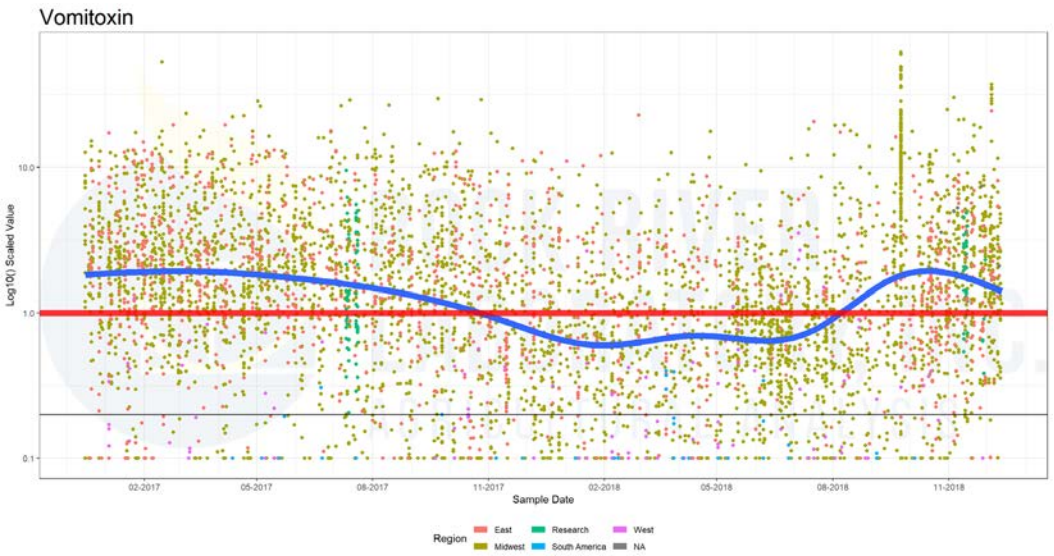
Date	Commodity	Business Specialty	Ag Skill	Farmer Host	Guest Experts, Affiliation
Apr. 8	Greenhouse, Transplants	Wholesale & farm stand marketing Flexibility & innovation	Biocontrol & sanitation Raising transplants	Karyn Sullivan Eden, NY	Amara Dunn – NYS IPM Biocontrol Specialist E. Buck – Cornell Veg Prgm
Monday in May	Urban Farming	Positive Public relations Navigating muni. ordinances	Soil nutrition Adapting farming techniques	Mayda Pozantides TBA Buffalo, NY	E. Buck – CVP CCE Erie staff
Jun	Vegetables	Efficient labor management Post-harvest practices	Crop protection Soil health	TBA	Anu Rangarajan, Cornell Small Farms Program E. Buck – CVP
July 15	Small Fruit, Vegetables	Family farm transitions Diversified operation mgmt.	Fruit production Insect control	Gayle & Naomi Thorpe East Aurora, NY	TBA E. Buck – CVP
Aug 12	Professional Ag Services	Avail. farm support services Crop insurance	Building the farm support network	Picnic Alden or East Aurora	Industry professionals
Sept.	Maple, Agroforestry	Event agritourism Marketing value-added products	Maple production Putting woodlots to work	TBA	TBA CCE Erie
Oct. 1st week	Apples, Vegetables	Social media marketing Passive farm income	Season extension Managing CSAs	Bree McCollum Lockport, NY	E. Buck – CVP
Early Nov.	Christmas Trees, Wreaths	Identifying auxiliary farm income streams	Tree mgmt. Wreath making	Burley's Berries and Blooms Warsaw, NY	CCE Erie staff

Managing the Challenging 2018 Corn Crop through Feed Out

John Goeser, Ph.D., PAS, and Diplomate ACAN Rock River Laboratory

Regardless of growing location, the 2018 corn crop faced a myriad of disruptions throughout the growing season and harvest. Now that 2018 is almost completely behind us, corn silage is off the fields, and corn grain is mostly off (seems that some is in 'cold storage' at the moment), we've taken numerous questions about not only the challenges that we experienced during growth, but also the challenges that could be lurking in the silos,bunkers, bags, and piles.

To set the stage, at the beginning of 2017, Vomitoxin (DON) levels with 2016 harvested feeds were generally above dietary limits (on average between all regions of the US). Then the 2017 crop came in relatively clean, and mycotoxin loads dropped. With the new 2018 crop, we've seen these numbers creep back up well above average *(See Graph 1: Vomitoxin)*. Dr. Damon Smith, known virtually as the Badger Crop Doc, has addressed how one might reduce vomitoxin levels in corn silage in his recent video, 'Mycotoxins and corn earn rot' here: https://youtu.be/uM8m-Fvo4U4. However, vomitoxin is just the tip of the iceberg when it comes to the challenges Rock River Laboratory has received calls about, and we'd like to address the rest of those Frequently Asked Questions (FAQs), as well as those asked of Dr.



Damon Smith, University of Wisconsin-Madison Plant Pathology Associate Professor and UW Extension Specialist.

Graph 1: Vomitoxin

Q: What toxins have been observed most prevalently in the 2018 corn crop?

Record rainfall, delayed harvest, and new fungal plant pathogens have contributed to the vast number of feed hygiene concerns this year. We are recognizing mycotoxins produced by some of these fungi, including Vomitoxin & Zearalenone trending up from Minnesota to Pennsylvania.

Smith has also shared, "I have mostly seen vomitoxin issues in my neck of the woods. Gibberella ear rot combined with wet weather led to high levels of vomitoxin." He goes on, "You can have several mycotoxins of concern with a single disease."

Don't panic though; identify and prioritize opportunities for improving the hygiene of the feed through management and storage. For better or for worse, many growers and farms are experiencing similar outcomes.

Q: Are some hybrids better than others when it comes to growing and harvesting years like this?

"Hybrids vary for different disease issues. The trouble this season was that there were so many to deal with - some were good on one disease, while not so good on others," explains Dr. Smith. "I would select hybrids rated better on the harder to control issues, such as ear rots and stalk rots. Fungicides can be used on foliar issues more readily and that decision can be made in-season. So, look for good ear and stalk rot ratings and go from there."

As I've learned from Dr. Smith, hybrid resistance is key. Genetic impact on nutritive quality is also substantial, in some cases even up to 50 percent of phenotype. Crop scouting and management are also important to reduce disease issues and subsequent mycotoxin problems.

Dr. Smith echoes, "Crop scouting is key, as is paying attention to weather. If it's hot and dry, diseases are less of an issue. Cooler and wetter weather creates the issues like we've seen this season."

Growers should develop their own custom hybrid plots to monitor yield, disease resistance and quality on their own fields. I recommend assessing digestible tons per acre (which is a good yield measure), with seed costs and disease resistance, in a partial budget to make decisions.

Going forward, hybrid selection will likely be even more of a balancing act. Historically, it's consisted of a yield versus quality discussion. Now, though, we need to balance disease resistance with yield and with Neutral Detergent Fiber Digestibility (NDFD) or quality metrics.

"Lignin is a defense for disease," says Dr.Smith. "Unfortunately, there might be a tradeoff with stalk integrity and issues with rots and accumulation of mycotoxins by fungi that produce them in stalk portion of plant. The choice of hybrid will be a huge balancing act."

Q: What about tar spot's repercussions? Can it overwinter and what can we do to prevent it?

"We don't believe tar spot directly leads to mycotoxin issues, but it can reduce fee quality by inducing abnormally fast dry down," explains Dr. Smith. He recommends a QoI+DMI, or SDHI+DMI, or QoI+SDHI+DMI fungicide to get decent control of tar spot, but warns that timing the application of such fungicides to most closely coincide with the start of the epidemic, is key. But he also suggests planning ahead when choosing varieties. "Look for resistant varieties in hybrid trials. Most are not very resistant, but some partial resistance might be available. Despite some resistance, fungicide application may be needed, and timing of application will be an issue. You will also need something more than a straight DMI or QoI fungicide."

Dr. Smith shares that, "cool 30-day temperatures and high 30-day average humidity is a good indicator of tar spot onset. If the average 30-day temperature is less than 71 degrees F, combined with a humidity average above 75 percent for the month, tar spot is likely."

"The evidence is good that tar spot can overwinter, and we will likely see it again," suggests Dr. Smith. "As far as how bad, it's hard to say. It will depend on weather conditions and if those conditions coincide with corn at susceptible growth stages."

Dr. Smith's lab is currently working on a tar spot model, and have put together a video, 'Tar Spot: What We Know and What We Don't Know': https://youtu.be/uLygYjMkXQE.

Q: What are the biggest issues you've seen to date with the current corn crop?

Our main concern at this point is silage that is too dry, has high wild yeast counts, and less than ideal stability. Low NDFD levels and mycotoxin concerns are secondary, but very real. Unfortunately, there is no 'one size fits all' cure to all of these issues. "The longer the corn sat in the field, the longer it had to accumulate potential vomitoxin or other mycotoxins from ear rot issues,: observes Dr. Smith. "Other ear rots could be present. For instance, further south of Wisconsin, Fumonisin mycotoxin may be of concern. This is caused

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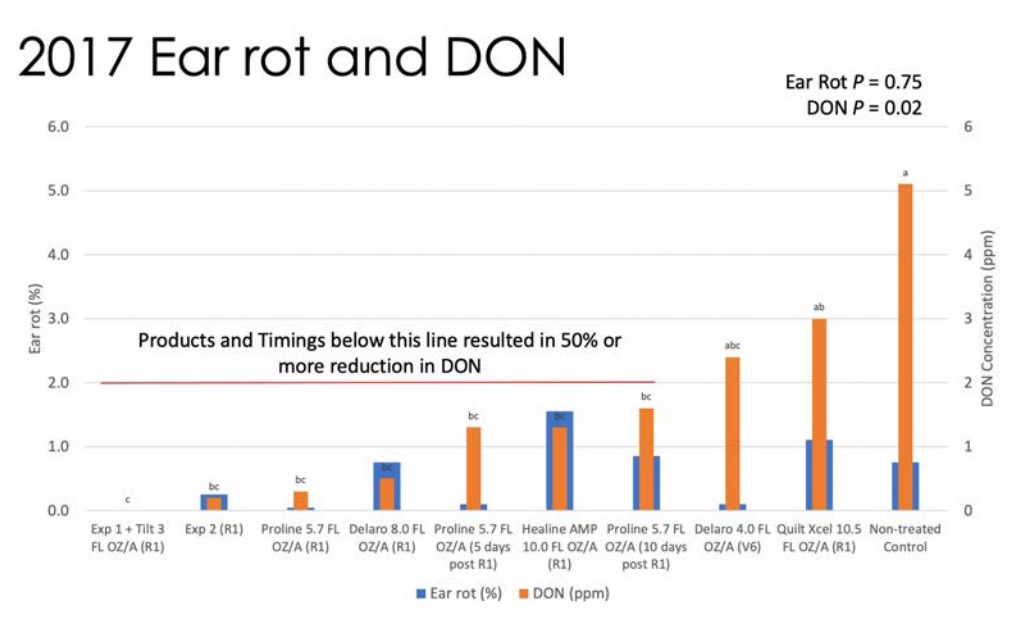


Results - Sorted by DON Level

PO956AMX	GLS Severity (%)	NCLB Severity (%)	Tar Spot Severity (%)	Ear Rot (%)	DM Yield (Tons/a)	TTNDFD (%)	DON (ppm)
Miravis Neo 13.7 FL OZ/A (V12-V14)	0.0 c	16.3 bc	2.1 bcd	2.9	13.6	36.2	7.7
Delaro 8 FL OZ/A (R2)	0.3 bc	10.5 cde	0.6 d	2.1	11.7	38.5	8.2
Miravis Neo 13.7 FL OZ/A + NIS (V6)	0.5 ab	17.5 cde	1.8 bcd	1.4	12.6	37.3	8.4
Lucento 5 FL OZ/A (R1)	0.0 c	8.0 de	0.8 cd	1.5	11.8	37.1	8.5
Proline 5.7 FL OZ/A (R1)	0.0 c	14.3 bcd	1.2 bcd	3.1	11.8	36.8	8.5
Non-Treated	0.8 a	25.0 a	3.8 a	2.1	12.9	34.9	9.4
Miravis Neo 13.7 FL OZ/A (R2)	0.3 bc	8.1 de	1.2 bcd	1.6	12.1	36.7	9.8
Experimental 1	0.0 c	11.3 cde	1.0 cd	3.3	12.2	37.8	9.8
Proline 5.7 FL OZ/A (R2)	0.5 ab	11.3 cde	1.0 cd	1.4	12.8	36.3	10.0
Delaro 8 FL OZ/A (R1)	0.0 c	11.8 cde	1.0 cd	2.1	11.9	36.7	10.5
Headline AMP 14.4 FL OZ/A (R2)	0.3 bc	13.0 cde	0.6 d	1.0	12.0	37.1	11.9
Headline AMP 14.4 FL OZ/A (R1)	0.0 c	14.3 bcd	0.8 cd	1.4	13.0	35.9	11.9
Topguard 10 FL OZ/A (R1)	0.0 c	6.1 e	1.4 bcd	4.9	11.9	38.5	12.9
Miravis Neo 13.7 FL OZ/A (R1)	0.0 c	9.8 b-e	0.6 d	1.0	12.5	36.4	17.9
F-value	**2.08**	**3.44**	**5.35**	**1.17**	**1.06**	**0.86**	**1.32**
P-value	**0.0393**	**0.0014**	**<.0001**	**0.3383**	**0.4166**	**0.5977**	**0.2414**

F2F627	GLS Severity (%)	NCLB Severity (%)	Tar Spot Severity (%)	Ear Rot (%)	DM Yield (Tons/a)	TTNDFD (%)	DON (ppm)
Proline 5.7 FL OZ/A (R2)	6.1 b	27.5 cde	8.6 abc	6.5 b-e	10.4	39.4	10.7 d
Miravis Neo 13.7 FL OZ/A + NIS (V6)	10.5 a	50.0 ab	4.9 cde	10.0 abc	11.0	37.0	12.0 cd
Delaro 8 FL OZ/A (R2)	3.8 bc	28.8 cde	2.0 ef	9.7 b-e	10.5	37.1	12.7 cd
Proline 5.7 FL OZ/A (R1)	2.1 c	31.3 c-f	7.4 a-d	10.4 b-e	11.0	38.5	13.2 cd
Headline AMP 14.4 FL OZ/A (R2)	2.4 c	17.5 ef	1.4 e	18.4 a	11.5	40.9	14.9 bcd
Topguard 10 FL OZ/A (R1)	2.4 c	23.8 de	5.6 cde	4.8 cde	10.7	38.1	15.1 bcd
Experimental 1	1.4 c	42.5 bc	6.3 b-f	7.7 b-e	11.7	39.7	15.7 bcd
Miravis Neo 13.7 FL OZ/A (R1)	1.0 c	21.3 de	6.9 a-d	11.1 ab	11.1	39.5	17.2 bc
Delaro 8 FL OZ/A (R1)	2.1 c	22.5 de	4.3 cde	12.9 ab	11.2	37.8	17.7 bc
Lucento 5 FL OZ/A (R1)	1.0 c	18.8 ef	5.8 bce	4.5 de	12.2	37.5	18.0 bc
Miravis Neo 13.7 FL OZ/A (V12-V14)	1.4 c	27.5 cde	11.3 a	4.6 e	11.6	36.2	18.6 bc
Headline AMP 14.4 FL OZ/A (R1)	1.8 c	36.3 bcd	2.8 def	14.2 ab	10.6	38.7	18.7 bc
Non-Treated	10.5 a	62.5 a	10.5 ab	8.8 a-d	11.0	38.7	21.2 ab
Miravis Neo 13.7 FL OZ/A (R2)	2.4 c	15.0 e	5.5 cde	7.8 b-e	10.7	39.9	30.3 ab
F-value	**8.89**	**5.86**	**2.97**	**1.74**	**0.71**	**1.19**	**1.75**
P-value	**<.0001**	**<.0001**	**0.0043**	**0.0901***	**0.7395**	**0.3247**	**0.0880***

Continued from page 28

by Fusarium ear rot, not Gibberella ear rot.

He recommends continuing to test, so you know what you have. The multitude of issues may be additive. Some dairies are recognizing lesser feed conversion efficiency, meaning less milk per pound of feed. In such cases, either the immune system takes up energy, or digestion capacity is limited. Echoing Dr. Smith, identification through testing is important to then prioritize next steps.

Q: Can fungicides help for ear and stalk rot? What about mycotoxins?

"In years where pressure isn't overwhelming, they can be useful," shares Dr. Smith. "In 2017 we saw good reduction of vomitoxin using fungicide." *(See Graph 2 of Ear Rot vs. Vomitoxin)*

Graph 2: Ear Rot vs. Vomitoxin

However, Dr. Smith goes on to explain that in 2018, the situation was challenging as the weather was conducive for the fungi. Success with fungicide wasn't as good, but there were some reductions on some hybrids. *(See Table A of DON levels)*

Table A: DON levels

Q: What should I test for in the 2018 corn crop now that it's harvested?

From Minnesota to Pennsylvania, I recommend staying on top of crop dry matter. Then focus on routine forage analysis. Check NDFSs as fiber seems to be slower this year. After that, priority analysis should include mold and yeast, followed by vomitoxin if the grower is suspicious of it.

Growers in the Great Plains, and the southern and western states avoided the challenges the eastern US endured. Those who experienced drought should check ash levels. "Normal" corn silage should be in the three to five range. Greater than five to six is "high", and could contaminate the feed, creating poor feed hygiene.

Q: What can I do to 'clean up' corn with high loads of vomitoxin?

I've learned from Professor Lon Whitlow, roasting won't help, however, cleaning chaff, etc. will.

"Mycotoxins are very stable and resist heating, freezing, roasting, etc.," explains Dr. Smith. "In grain, cleaning well and drying quickly help stop accumulation. In silage, good fermentation is pertinent." Learn more about mycotoxin stability in this resource from the Badger Crop Doc: https://t.co/sy1070V9vl.

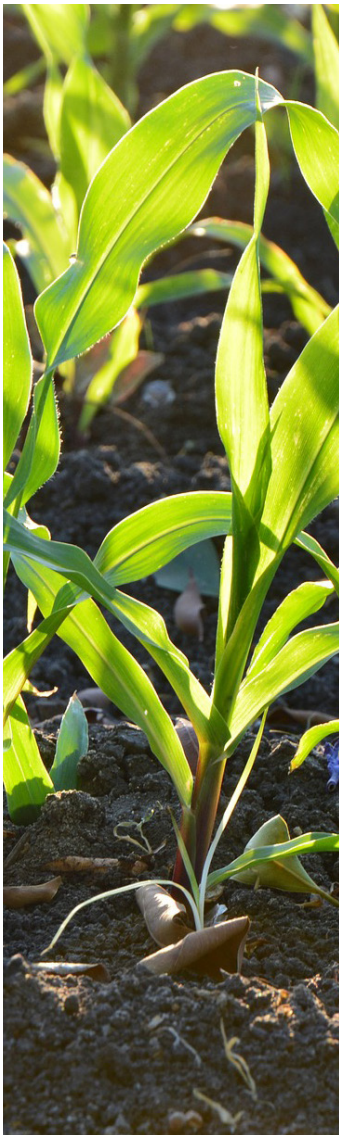
Q: How will this year's silage fermentation be affected by the molds, higher dry matter, and general crop stress?

Excessive rains excited wild yeast and microbes and delayed harvest, ultimately leading to a drier crop that won't pack as well. I'm expecting a slower fermentation, curing, and some feed stability issues. My three recommendations for dealing with these antinutritional factors includes keeping oxygen out, keeping the tires on, and ensuring all edges are sealed.

Detailed management items like this can go a long way.

Q: Feed was warm when we harvested and saw challenges, but winter is here and the temperatures have dropped. Do we still have to worry about the bugs?

High yeast loads, which cause heating, are likely present but not dead. They are dormant in refrigeration weather, so growers should be prepared for warmer temperatures and what they may bring in this sector (See Graph 3: Yeast).



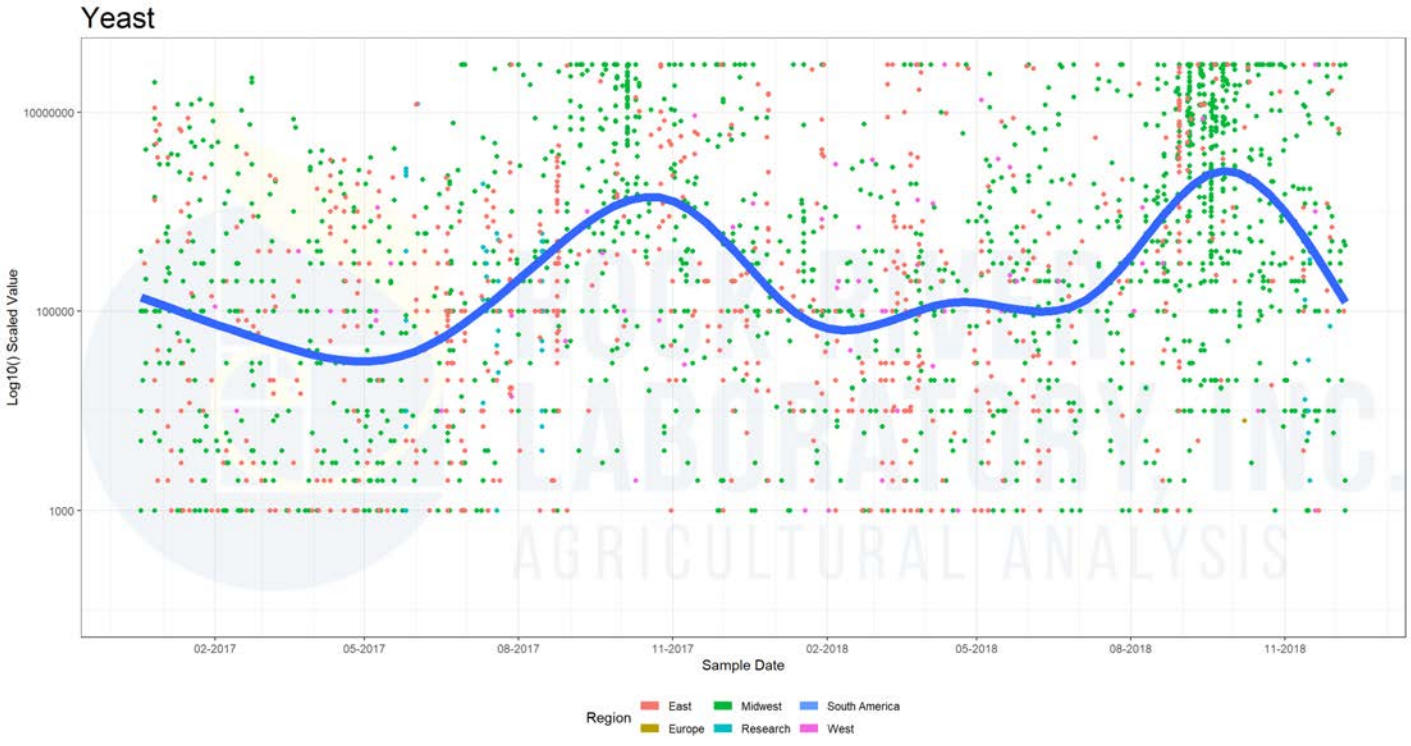
Graph 3: Yeast

Q: If corn silage looks OK but I send it in for analysis, what are some non-visible challenges you might recommend to analyze for, or I might find via analysis?

There is so much present in silage that isn't visible to the human eye, including living microbes (mold and yeast), mycotoxins (i.e. Vomitoxin), alcohols, and biogenic amines (fermentation products). All of these and more can affect animal health.

While the corn crop has proved to challenge us in 2018, it has also brought problems to the surface to be addressed, solved, and continue growth in our management understanding. While our industry will remain diligent in researching for better means to manage and avoid such challenges in the future, growers can also feel better prepared for 2019 having endured, and learned from the 2018 crop.

The author can be contacted at johngoeser@rockriverlab.com and at the website www.rockriverlab.com



What are Growing Degree Days? How They Work and Why They are Useful

Elizabeth Buck, CCE Cornell Vegetable Program

Scheduling crops is inherently difficult. There's not really been much available for use in the planning stages - more or less just the variety's listed days to harvest and your own past experiences. So, that boils down to hoping for a cooperative spring and marking the calendar so many days out to get a sense of the harvest period. Some years that works.

But there are plenty of examples when calendar counting to predict harvest does not suffice. Anyone get caught in a bind with fall cole crops that came in a week or two early last year, which led to blown out, unmarketable heads? How about cool years when the melons are sluggish and you've missed the target window? Plants don't read calendars or seed packets.

They do respond strongly to the weather (I know, ground-shattering information).

Each crop has a lower and upper temperature at which it ceases to function efficiently. This isn't the same as a frost, which causes crops to cease functioning. That **loss of efficiency** is marked by **reduced photosynthetic output**, and that **delays crop maturity**. In hot (especially dry) weather plants will close the stomate openings on their leaves to reduce water loss. Closing the stomates reduces CO2 uptake and reduces the amount of sugar that can be produced to maintain the existing plant tissue and support new growth. Hot weather also places other stress related metabolic demands on the plant that ultimately lead to lower-than-normal sugar production. Cool temperatures slow metabolic functioning down and can cause cellular damage, which the plant must repair before returning to efficient growth. The range of temperatures **between the lower and upper threshold temperatures is the sweet zone** in which the crop does most of its growing.

Growing degree days (GDD) allow us to "count" the number of time units the plant experiences in the optimal growth zone. The growing degree day concept is handy because it removes the calendar element of crop timing and replaces it with a **biology-based (biofixed) method**. It is true that GDD can fail to accurately predict crop maturity when there are unusual amounts (high or low) of soil moisture. However, in most cases we do not have excessively wet summers and most fresh market (and an increasing amount of processing acreage) has irrigation capacity. Because they are biologically-based and because we can influence water availability, growing degree days are reliable indicators of crop maturity. Use of GDD to describe, select, and schedule corn varieties has become standard – the field corn industry simply refers to GDD as CHU (crop heat units).

There are a few different ways to count GDDs. I'll go through them using snap bean as an example.

All GDD models begin with selecting a base temperature, which is the lower threshold value for reliable crop growth. In snap beans the base temperature is 50 degrees. The base temperature value differs with crop. For example pea is close to 40 degrees and cantaloupe is about 55. The base temperature can be noted as a subscript; for snap beans it becomes GDD50.

The Daily Average Method is the simplest method and does not take hot temperatures into account very well. The formula for a single day is: **((High temp+low temp))/2-base temp.** For snap bean, hot late July day with a high of 90 and a low of 68 becomes: ((90+68))/2-50= ((158))/2-50=79-50=29 GDDs. The daily average method is the best one for performing home calculations. The other drawback to this method is that it takes only the daily average

temperatures into account, which is fairly coarse data. It cannot differentiate between a cool day with many hours of 60 degree weather and a day with a cold morning but many hours in the optimal growth zone.

The other two approaches are actually constitute two families of related calculation methods. Both method families rely on math that is more complex than most folks (including me) really want to take on. They use trigonometry style mathematics (specifically sine-based) and some use calculus based math (integration). If you like doing that kind of math by hand, let me know and I'll get you the equations. There are charts that can be used for some of the approaches to determine the degree days.

The BE (Baskerville-Emin) Method does a better job of aligning the GDD count with plant growth during cool conditions. This is also sometimes called the sine method. The BE method also does not take high temperatures into account, so the BE and Daily average methods perform equally well in moderate to hot weather. Much of the older GDD research was based on sine methods. Newer research is either sine or cut-off depending on the specific biology of the pest/disease/weed/crop being studied. Most online GDD tools use a version of the sine method. Avoid the online GDD tools that don't allow you to set your base temperature.

The final set of methods are **Cut-off Methods**, and these do the **best job of matching up accumulated GDD count with the actual crop growth conditions**. The cut-off methods do factor in the negative effects of excessively warm temperatures. The most common cut-off (or threshold) temperatures used by these models is 50 and 86 degrees, which would be abbreviated as GDD50/86. These are almost exclusively done as computer models.

Most of the GDD tools are available online only because of the complex math and because they use information collected at regular (often hourly or less) intervals from weather stations. This produces a very fine level of detail and some very accurate GDD counts, and often allows you to select a locations quite close to the farm.

So, to boil it all down with a real world example. I grew snap beans in 2016 and 2017 in Southern Ontario, Canada, and for fun tracked the calendar, GDD50, and GDD50/86 methods to see which best lined up with when the crop was ready. The Calendar method (days to harvest from planting) was off by 3 to 7 days, which is far too many for a processing crop. The GDD50 method was pretty close, within a day or two. The GDD50/86 method was equally accurate as the GDD50 in terms of crop harvest date. However, the GDD50/86 method provided a better indication of my eventual yield potential when I looked at the accumulated GDD during flowering. Why? Because these were both hot summers and snap bean flowers do not do well in high heat, which can reduce yields. In the end, either the regular sine method or the cut-off method worked to schedule the crop, but only the cut-off method provided additional detail related to how much heat stress my crop was exposed to during a critical developmental stage.

GDD information is useful in many ways. The above example shows that the cut-off method can be used for crop scheduling and to provide indications of fields that may have lower yield potential due to heat stress. GDD is a powerful tool for use in the modeling of insect pest flights, and is a backbone to many successful IPM pest (and disease) prediction models. Weed scientists use GDD to describe weed growth and to define exactly when weeds do the most competitive damage with crops – when you most need to control weeds. Tracking growing degree days is a good way to start moving your farm into a more information-based management system as an effort to make scouting and spraying tasks more efficient.

ERIE COUNTY MICRO-ENTERPRISE LOAN PROGRAM

Would you like to start or grow your small business?
Create your own job?
Use your talents and creativity?
Increase your income?
Be able to work from home?

Have you been unable to get a loan from a bank or credit union?
You're just starting out or haven't been in business long enough?
You don't have enough collateral to secure the loan?
Your credit score is less than perfect?

An Erie County Micro-enterprise Loan can help!
A "Microenterprise" is a business having five or fewer employees, one or more of whom own the business.

The Microenterprise Loan Fund is a 60/40 loan versus grant program that can be for as little as $5,000 and up to $35,000.

The loan/grant can be used for working capital or the purchase of machinery and equipment.

Income eligibility and location requirements apply.

For more information, please call 858-6409 or 846-6525 or visit our website at www.erie.gov/environment and click on Economic Development.

Cornell Cooperative Extension of Erie County has an opening for a Farm Business Management Educator

Primary responsibility to develop and deliver high quality educational programs within farm business management, agriculture, agriculture economic development, farmland protection, and food systems. The Farm Business Management Educator will develop programs that meet identified needs in the county and support local farm business profitability and ecological sustainability as well as increase awareness, viability, and sustainability of local agriculture. Only online applications will be accepted. For more information about the position and to apply online by February 26, 2019 go to: **erie.cce.cornell.edu/jobs**

UPCOMING AGRICULTURAL EVENTS AROUND WNY

Manure Applicator Training
Feb 28 :: 9:00 – 11:00 AM
Cornell Cooperative Extension Wyoming County

This informational meeting is for all farm owners, family members, and employees who manage their farm's manure. All farms, regardless of size are encouraged to attend. This is a DEC approved Manure Applica-tor Training that is required for CAFO farms. A certificate will be provided to each farm that participates in the meeting.

Please RSVP with names of individuals planning to attend by contacting Lisa Aures, Ag Admin. Assist. at 585-786-2251 (lma96@cornell.edu) or **CCE Steuben County Main Office 607-664-2300 by** Friday, February 22, 2019.

27th Annual Rural Landowner Workshop
March 2 :: begins at 8:30am
Pioneer Central School, Yorkshire NY

More information and to register: allehany.cce.cornell.edu

Seed to Supper Garden Educator Training
March 2 :: 9:00am - 4:30pm
True Bethel Baptist Church of Buffalo

Seed to Supper Garden Educators share practical, low-cost techniques for building, planning, planting, maintaining, and harvesting a successful vegetable garden.

More information and to register: erie.cce.cornell.edu or contact Sharon Bachman at sin2@cornell.edu, 716-652-5400 x150

Blueberry Intensive Workshop
March 5, Ellicottville, NY
March 14, Millbrook, NY

Join us for this exclusive 1-day workshop, featuring expert speakers from Cornell University, Rutgers University, New York State IPM and more.

More information and to register: nysbga.org/events, or call Karen Wilson at 315-521-0852

Erie/Niagara Regional Vegetable Meeting
March 26 :: 8:30am - 12:30pm
Eden American Legion, Eden NY

1.5 DEC credits in categories 1a and 23

More information and to register: cvp.cce.cornell.edu/events.php or call 585-406-3419

Produce Safety Alliance
March 11 :: 9:00am - 5:00pm
March 12 :: 9:00am - 3:00pm
CCE Broome County (Binghamton)

Participation in this training will give you the tools to create an on-farm food sagety plan and complete one of the requirements of either FSMA OR the NY State Grown and Certifed branding Program. We will also discuss potential funding streams to make infrastructure upgrades to your farm related to food safety!

2 DEC credits available in the following categories 10, 1a, 22 & 23

More information and to register: ccebroomecounty.com

2019 Garlic School
March 20 :: 9:00am - 2:30pm
First United Methodist Church, Batavia NY

Hear about the latest research trial results and insect and disease issues. Open discussion encouraged!

More information and to register: cvp.cce.cornell.edu/event.php?id=1099 or contact Christy Hoepting at cah59@cornell.edu, 585-798-4265 x38 or Robert Hadad at rgh26@cornell.edu, 585-739-4065

Preventive Controls for Human Food
April 2-4
Hampton Inn, East Aurora NY

This 2.5 day course will fulfill FDA Requirements for FSMA Qualified Individual Training through the Food Safety Preventive Controls Alliance and AFDO.

More information and to register: https://dairyextension.foodscience.cornell.edu/content/0402-0419-fsma-preventive-controls-qualified-individual-training/

CORE Pesitcide Applicator Training and Recertification Course
April 4 :: 8:15am - 12:15pm
Cornell Cooperative Extension Wyoming County

This training session is geared for individuals planning to take the CORE and Category Pesticide Certification Exam specific to the focus of their work.

3.5 CORE credits for attending the training class from 8:15am - 12:15pm.

More information: Call 585-786-2251 x113

Cornell Cooperative Extension
Erie County
21 South Grove Street
East Aurora, NY 14052
—Return Service Requested—

Erie County Ag News

Cornell Cooperative Extension of Erie County

If this box is checked, this is your last issue of Erie County Ag News!

See page 25 to re-enroll today!

Building Strong and Vibrant New York Communities