AGRICULTURAL NEWS

Schuyler and Steuben Counties

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Farm City Day
Save the Date September 29th 2018!

The Steuben County Farm-City Day Committee is pleased to announce that we will be returning to annual Farm-City Day Events! Mark your calendars & save the date for Farm-City Day 2018; Saturday, September 29th from 10:00am to 3:00pm. Farm-City Day is an educational, fun filled day on the farm where the public can get a first-hand, behind the scenes look at how a modern dairy farm operates and have some fun on the farm to share with the entire family. This year is CCE Steuben's Centennial celebration and plan to make things bigger and better. Look to the website and facebook pages for updates. We will reveal the host farm soon!

We will again host a tour day for school aged children on Thursday September 27th. Elementary students from the entire county will be invited to tour the Host Farm. Many volunteers will be needed to make this day a success! Please contact Stephanie at 607-664-2574, sms64@cornell.edu or Ariel at adk39@cornell.edu to sign up to volunteer, donate to the event, or for any questions.

Newly Approved Fungicides for New York

Orondis: New Fungicide Registered In New York. Oxathiapiprolin, the active ingredient in Orondis fungicides, is the first in a new chemical group (FRAC code 49, previously U15). It is highly effective for diseases caused by oomycetes, which include downy mildews, late blight and Phytophthora blight. The three formulations were registered in NY in fall 2017. There are some differences in labeled diseases and application method (foliar or soil) among the formulations. Two are formulated with another active ingredient for managing fungicide resistance. Additionally for resistance management, no more than 2 consecutive applications of any Orondis fungicide are allowed; next application must be a fungicide that does not contain a code 49 active ingredient and also a code 40 when Orondis Ultra is used. When at least 3 applications will be made, Orondis fungicides can be no more than 33% of the applications, or a maximum of 4 applications per planting, whichever is fewer.

Orondis Ultra and Orondis Opti are labeled for downy mildew in brassica crops, cucurbits, and onion. Downy mildew in lettuce, spinach and other crops in leafy greens crop group is only on the Orondis Ultra label. Both fungicides are also labeled for late blight in tomato and potato and buckeye fruit rot in tomato. Only Orondis Ultra is labeled for Phytophthora blight in cucurbits. Orondis Opti is labeled for several other diseases because it contains chlorothalonil. It is only recommended used for these diseases when one of the diseases caused by an oomycete pathogen is also present. Only foliar applications are labeled for Orondis Ultra and Orondis Opti whereas Orondis Gold 200 can be applied to soil. It is important to note that when Orondis Gold 200 is applied to soil, no Orondis product can be applied to foliage of that crop. Orondis Gold 200 is labeled for Phytophthora blight in cucurbit, eggplant, pepper, and tomato. Applications through drip irrigation are considered the most effective way to apply Orondis Gold 200 for managing Phytophthora blight. For crops that do not have drip set up for applying fungicides, it is better to use foliar applications throughout crop production rather than apply once to soil at planting. Orondis Gold 200 is also labeled for downy mildew in lettuce, spinach and other crops in leafy greens crop group. REI is 12 hrs for Orondis Opti, and 4 hrs for Orondis Ultra and Orondis Gold 200.

Aprovia Top: New Fungicide Registered in New York. Aprovia Top contains difenoconazole (FRAC Group 3) and benzovindiflupyr (FRAC 7). Many new fungicides are formulated with two active ingredients for resistance management and/or to broaden the product activity. Aprovia Top cannot be applied more than twice consecutively to vegetable crops before switching to another fungicide that does not contain a FRAC 7 (SDHI) ingredient. While allowed, it is not recommended used in rotation with another FRAC 3 fungicide also for resistance management. In NYS it is classified for restricted use and permitted used on Long Island. It was accepted for registration in NYS on 7 December 2017, which was after the 2018 Cornell Guidelines for Commercial Vegetable Production had been prepared, therefore it is not included. Labeled uses for vegetable diseases that can occur on Long Island include:

- anthracnose, early blight, leaf mold, powdery mildew, and Septoria leaf spot in tomato.
- anthracnose, Alternaria leaf blight, gummy stem blight, and Plectosporium blight in

cucurbit crops. Aprovia Top is also labeled for powdery mildew and is expected to provide some control but there are other FRAC 3 fungicides with greater intrinsic activity that are better choices when other labeled diseases are not developing.

Aprovia Top is also labeled for use in blueberries and grapes. REI (restricted entry interval) is 12 hrs. The PHI (pre-harvest interval) is 0 days for most labeled vegetable crops; 14 days for sweet potato and other tuberous and corm vegetables. For best performance it is recommended Aprovia Top be applied with a spreading/penetrating type adjuvant such as organo-silicon blends with either non-ionic surfactants (NIS) or vegetable based crop oil concentrate (COC); or vegetable based COC (not mineral); or NIS with at least 90% concentration. This and other NYS pesticide labels can be downloaded at: http://www.dec.ny.gov/nyspad/products?0

in its focus working with young and beginning entrepreneurs to establish successful businesses," said Matt Senter, Farm Credit East senior vice president based in the Auburn, Maine office. "The combination of working capital and the valuable insight provided by FarmStart advisors like Kathryn Bisson provides startup businesses with much improved odds of long term success. In a business like Steven's, his strong farm management and marketing skills are complemented by the expertise of FarmStart staff and the flexibility of repayment terms."

FarmStart, LLP is a joint initiative of Farm Credit East, Yankee Farm Credit and CoBank to fulfill Farm Credit's long-term commitment to support a vibrant, entrepreneurial northeast agricultural community. The program invests working capital of up to $75,000 to help beginning northeast farm, forest products and commercial fishing businesses and cooperatives become operational.

Each FarmStart participant completes a business plan and monthly cash flow to serve as a roadmap for their startup business. A FarmStart advisor works with each participant to help the new business stay on track toward achieving their business objectives. Additionally, Farm Credit East's Knowledge Exchange program offers resources for these startup producers via hot-topic webinars and industry reports and analysis.

For more information on FarmStart please visit FarmCreditEast.com/FarmStart.

–Farm Credit East

New Apple Disease Spoils Even Pasteurized Foods

Fungus, Paecilomyces niveus, able to spoil apple products even after heat pasteurization

The disease may be overlooked because it so closely resembles other apple diseases, said doctoral student Megan Biango-Daniels. (New York Apple Country, Flickr/Creative Commons)

ITHACA, N.Y. — New Yorkers love apples. The Empire State is the second-largest apple grower in the U.S. and is the No. 1 producer of processed apple products, such as cider, juice and canned apples.

A Gala apple infected with newly described apple disease, Paecilomyces rot. (Credit: Megan Biango-Daniels, Cornell University)

Given this appreciation for apples, consumers might be concerned by reports from food scientists of a fungus, Paecilomyces niveus, that spoils apple products even after heat pasteurization. The fungus also produces an FDA-regulated toxin called patulin that is found in these spoiled processed foods.

A new study, published online in March in the journal Plant Disease, describes for the first time a new apple disease, Paecilomyces rot, caused by the little-studied fungus.

Though food scientists have attributed P. niveus in foods to soil contamination, the study's authors, doctoral student Megan Biango-Daniels and Cornell Univeristy mycologist Kathie Hodge, now think infected apples may be the true source.

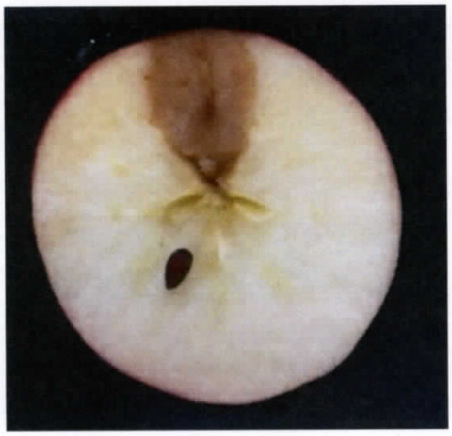
"No one knows how [the mold] gets into apple products," said Biango-Daniels, who works in Hodge's lab. "Since it's known to be in orchard soils and it's related to other pathogens that attack apples through wounds, I thought that maybe it could infect apples that way, too."

In the study, the researchers created wounds in Gala and Golden Delicious apples with a toothpick covered with the mold. The apples developed brown rings of rot that resembled other apple diseases, such as black rot, bitter rot and bull's eye rot. When they cut the apples open, they found spores of P. niveus being made inside the cores.

"Some cores were filled with fluffy white mold with plenty of spores," Biango-Daniels said.

The researchers found P. niveus in 34 percent of soils sampled from apple orchards across New York.

Cross section of an infected apple – white mold is growing inside the airspace of the core. (Credit: Megan Biango-Daniels, Cornell University) Cross section of an infected apple – the disease makes a U-shaped bruise-like rot. (Credit: Megan Biango-Daniels, Cornell University)



"It's a really tough mold," said Hodge, associate professor in the School of Integrative Plant Science. The fungus produces abundant, durable ascospores that can survive heat as high as 194 degrees. This leads to spoilage on the shelf of even pasteurized processed foods containing bad apples.

The disease may be overlooked because it so closely resembles other apple diseases, Biango-Daniels said.

"The most effective way we can prevent apple spoilage from this mold is to cull apples with wounds and bruises that makes them likely to get this, and to never use dropped apples, the ones that people pick up off the ground," Biango-Daniels said, adding she doesn't yet know of a way to stop spoilage once the fungus has been introduced in foods.

P. niveus (white) and a Penicillium species (green) grow in a petri dish. (Credit: Megan Biango-Daniels, Cornell University)

Researchers will now make processed apple products, pasteurize them and see if the fungus survives when bad apples are used.

"It's important to think about food spoilage as a continuum and to think about where problems arise and how the whole food system is connected to the end product," she added.

This work was supported by the U.S. Department of Agriculture National Institute of Food and Agriculture Hatch grant and by a Cornell College of Agriculture and Life Sciences Arthur Boller Apple Research Grant.

–Cornell University

60+ New Partners In Hemp Pilot Program

New partners expand research trials to more than 3,500 acres across nine regions

"There is a renewed interest in industrial hemp production and processing throughout the country, and with our strong grower community and innovative researchers, New York is in a great position to lead," Governor Cuomo said. "By providing an alternative crop for our farmers, industrial hemp has the potential to change the landscape of our agricultural economy, create jobs and drive growth across the Southern Tier and throughout New York." (Metropolitan Transportation Authority of the State of New York, Flickr/Creative Commons)

ALBANY — Governor Andrew M. Cuomo today announced more than 60 new farms and businesses have received research permits under the State's Industrial Hemp Agricultural Research Pilot program. These new research partners expand across the state, including seven counties in the Southern Tier, and will focus their studies in biotechnology and agronomics, among other areas. Additionally, for the first time, applications for future research partners in the areas of food and fiber will now be accepted on a continuous basis.

"There is a renewed interest in industrial hemp production and processing throughout the country, and with our strong grower community and innovative researchers, New York is in a great position to lead," **Governor Cuomo said.** "By providing an alternative crop for our farmers, industrial hemp has the potential to change the landscape of our agricultural economy, create jobs and drive growth across the Southern Tier and throughout New York."

To broaden New York's Industrial Hemp Agricultural Research Pilot Program, Governor Cuomo announced an open solicitation, which ended in November 2017, drawing applications from more than 100 farms and businesses. Currently, 62 applicants have received research permits for the 2018 growing season with additional research partners in the approval process. In addition, 18 New York companies have registered to process industrial hemp, which is key to advancing market research and supporting a growing demand for industrial hemp products nationwide.

To continue advancing the pilot program in the Southern Tier and throughout the state, applications for future food and fiber research proposals are now being accepted on a rolling basis and are not subject to a deadline. The application is available on the NYS Department of Agriculture and Markets website here.

This year, with the addition of the new research partners, approximately 3,500 acres of New York farmland are approved for industrial hemp research trials, compared to 2,000 acres in 2017. Research projects will focus on utilizing industrial hemp as a source of food, fiber and grain for the production of animal bedding, insulation, pellets for heating and many other consumer products.

Researchers will also explore the potential cosmetic and wellness benefits of CBDs. They will also conduct biotechnology work and study indoor plant breeding and cloning methods as a possible source of transplantable plant stock for growers. Expanding the Industrial Hemp Agricultural Research Pilot Program will allow for more comprehensive studies on a wide range of topics and help New York secure its position as a national leader in the emerging industrial hemp industry.

Expanding Industrial Hemp Processing Capacity Statewide

Building a strong processing capacity for industrial hemp is important to supporting market research and meeting the growing demand for industrial hemp products nationwide. Through the 18 registered processing companies, New York will have the capacity to process industrial hemp for the craft beverage sector, food production, CBD oils for

wholesale, heating and building materials, fiber and more.

New York State's $5 million Industrial Hemp Processors Grant Fund was launched last year to enhance hemp processing and support business development. The program helps cover capital costs related to industrial hemp processing including new construction and the purchase of equipment. In January 2018, Governor Cuomo announced the state also invested $650,000 through the Regional Economic Development Councils to establish a $3.17 million industrial hemp processing facility in the Greater Binghamton area. Southern Tier Hemp, the company leading this effort, develops, manufactures, and sells CBD-based health products using a proprietary method of extraction.

State Agriculture Commissioner Richard Ball said, "The commitment of our Governor and our legislative partners to make this a successful program has opened the door new possibilities in New York's agricultural industry and so many other fields. There are thousands of uses for industrial hemp and these new research projects will continue to strengthen our understanding of its many benefits. At the same time, the pilot program is supporting opportunities for diversification on New York farms at a time when many farmers are struggling."

Empire State Development President, CEO & Commissioner Howard Zemsky said, "New York State is supporting industrial hemp research and production through strategic projects identified by the Regional Economic Development Councils. As the industry continues to emerge and expand, it will generate economic growth and create jobs statewide."

Senator Patty Ritchie, Chair of the Senate Agriculture Committee, said, "We can ensure the continued success of our state's hardworking farmers by providing them with increased opportunities for diversifying and expanding their businesses. If we invest in our farmers, and allow them to use their ideas and creativity, our agricultural industry will only grow. I would like to thank Governor Cuomo and Commissioner Ball for their commitment to our farmers and investing in programs that will help bolster our state's leading industry, and New York's economy as a whole."

Senator Thomas F. O'Mara said, "We have worked steadily over the past several years to move New York State to the forefront of this new industry with the potential to diversify our agricultural economy, generate revenue and create jobs. We're moving ahead to ensure that the development and growth of the industrial hemp industry will provide valuable new economic opportunities and a competitive edge for farmers and agribusinesses, together with the state's agricultural industry overall."

Assemblyman Bill Magee, Chair of the Assembly Agriculture Committee, said, "Opportunities in industrial hemp production in New York rely on the research and development that is extremely beneficial to our innovative farmers and entrepreneurs who envision the future potential of hemp that is grown here. This research is instrumental in revealing the opportunities intrinsic to New York State grown hemp for this revamped, revitalized industry."

Assemblywoman Donna Lupardo said, "All around the country people are realizing the vast potential of industrial hemp for farmers, processors, manufacturers, and researchers. I am very proud of the leading role NYS is playing in the buildup of this new industry. All eyes are on New York as we show what can happen when government, higher education, farms and other businesses work together on this groundbreaking effort."

Today's announcement follows the State's first industrial hemp research forum, held in February at Cornell University. The forum was part of the Governor's 2018 State of the State proposal to establish New York as a national leader in industrial hemp research, production and processing and transform New York's agricultural economy. It brought together researchers, academics, businesses and processors to develop strategies to advance research throughout the state.

In April 2017, Governor Cuomo also convened the State's first Industrial Hemp Summit and announced several actions to support the emerging industry in New York. He later signed legislation establishing an industrial hemp working group, a one-stop shop and webpage to support growth in the industry. The Department of Agriculture and Markets also secured a federal permit to facilitate imports of industrial hemp seed on behalf of participants in the State's pilot program.

Nationally, Industrial Hemp generates nearly $600 million per year in sales of a variety of consumer, industrial and medical products. Recognizing its potential impact on manufacturing, job creation, and the profitability of farms across New York State, the Governor launched the Industrial Hemp Agricultural Research Pilot Program in 2015. There were more than 20 research partners permitted to grow and research industrial hemp in 2017.

Accelerating Southern Tier Soaring

Today's announcement also complements "Southern Tier Soaring," the region's comprehensive blueprint to generate robust economic growth and community development. The State has already invested more than $4.6 billion in the region since 2012 to lay for groundwork for the plan – attracting a talented workforce, growing business and driving innovation.

Today, unemployment is down to the lowest levels since before the Great Recession; personal and corporate income taxes are down; and businesses are choosing places like Binghamton, Johnson City and Corning as a destination in which to grow and invest. Now, the region is accelerating Southern Tier Soaring with a $500 million State investment through the Upstate Revitalization Initiative, announced by Governor Cuomo in December 2015. The State's $500 million investment will incentivize private business to invest well over $2.5 billion – and the region's plan, as submitted, projects up to 10,200 new jobs. More information is available here.

–NYS Department of Agriculture and Markets

Resources for Dealing with Spring Weather Delays

Cornell Cooperative Extension
Cornell C ALS PRO-DAIRY

While the forecast still seems unsettled we are all hopeful that we are past the worst of the rain and can begin catch up on springs work. Here we have attempted to summarize a variety of relevant topics as you consider how to best tackle all the work that needs to take place in a condensed timeframe. As always contact your local Extension office for more information on any of these topics.

Safety First!

Harvest is a busy time for most farm operations. Time means money when it comes to yields, production schedules, and operating costs. However, time also ensures safety at harvest. The extra time it takes to perform a task properly can determine whether the job is completed at all. Harvest season comes with many stresses. Exposure to dangerous situations can increase the mental pressure, and your risk of injury. Follow safe practices around harvest equipment to make the most of your work time. *The most important goal this spring is to send all family members and employees home to their families SAFE ... EVERYDAY!!*

Planning and Team Work

With your condensed time window for key field activities this spring, the solution to accomplishing everything on time might come from a different way of thinking. Consider the 5,000-foot view of the land that you and your neighbors work and think of the inventory of people and equipment potentially available to apply manure, fit fields, plant, harvest, haul, pack bunk, etc. for the *collective* land base. Are there opportunities to share equipment and time even where you haven't done so before? Can you bring in equipment or a custom operator to take care of one activity while you focus on another? Does it make sense to use the 4-row planter when a 6-row is sitting idle a mile away? Can you bring in extra help for milking? Do you

have any retired neighbors who could lend a hand with field work?

Consider gathering with your neighbors to strategize and to make sure that the most efficient equipment is fully utilized this year. Remember: you and your neighbors are in the same boat, so you might as well paddle together!

Tillage and Impact on Wet Soil

While driving on and tilling wet soil may be somewhat unavoidable this spring, there is still an opportunity to reduce the amount of damage that is done. Here is a summary of pointers from *Tom Kilcer, Advanced Ag Systems, Kinderhook, NY*:

- Keep tillage shallow, in friable top soil not wet soil underneath.
- Utilize vertical tillage, avoid equipment such as disks that simply smear and ruin the structure of wet soils.
- Minimize weight whenever possible (fertilizer hoppers, etc.).
- Make sure wheels on planter tractor are offset and not compacting the corn rows.
- Check the seed furrow when planting: if planter is smearing sidewalls, it is too wet to plant.
- Pay extra attention to seed placement and row cover by planter.

Total Tractor Weight	Optimum Filling Rate
Tons	Tons/Hr.
15	40
20	50
25	60
30	75
35	90
40	100
45	115
50	125
55	140
60	150
65	165
70	175
75	190
80	200

Park the Corn Planter when 1st Cutting is Ready!

The window of opportunity for high quality hay forage is 1-3 days. Window of opportunity to plant corn is April 25 to June 1 = 36 days. The harvest opportunity for corn is corn silage or snaplage or HMSC or dry shell or ear corn.

First cut is 40% of yield in 3 cut system. Delaying cutting alfalfa past optimum first-crop harvest timing reduces the quality. Subsequent crops are then also delayed, making timely harvest of the last crop before fall more difficult. It is important to get that first cut off somehow. If forage inventory is good, consider alternative storage options to feed to heifers or just chop poor quality forage back onto the field. Do you really need all of it? Re-growth is critical for a 3 cut system.

To go from ideal alfalfa of 20% CP, 30% ADF, and 40% NDF, to 17 - 34 - 45, takes only 5 or 6 days! Obviously, poor quality forage does not have the same milk producing potential.

What nutrient changes can you expect in alfalfa due to advancing maturity?

- Decreased intake - due to higher NDF, which increases about 0.9% per day.
- Decreased digestibility and energy value - due to higher ADF, which increases about 0.7% per day and a larger amount of lignin, which is indigestible.
- Decreased protein - decreases about 0.5% per day.

How much does it cost me to delay harvest? A lot! For each unit of NDF increase past 40% NDF for will:

- Need: increased energy and protein supplements.
- Have: lost production from the effect of lower NDF digestibility on dry matter intake.

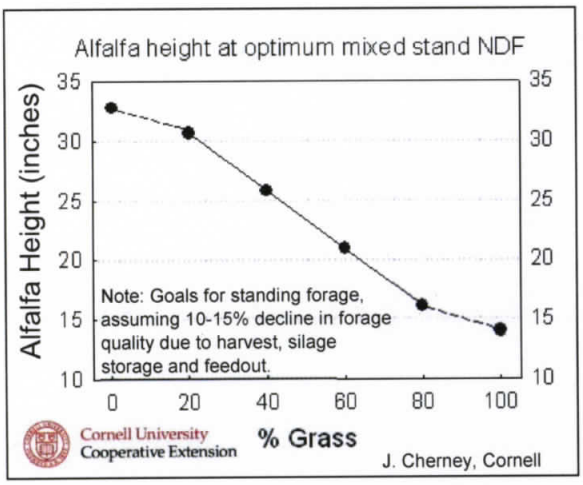
Tips for haylage harvest:

- DO NOT ensile haylage wetter than 30% (target 32-40% DM). You all will be in a hurry to get haylage in the silos. Haylage wetter than 30% will have a greater chance of clostridia fermentation and butyric acid production.
- Do NOT chop alfalfa WET!
- Do INOCULATE at the forage harvester!
- DO ADD another PACK tractor or weight to existing tractors.
- Consider harvest strategies such as HAY IN A DAY to lower weather risk and improve forage quality. Hay in a Day YouTube video: http://www.youtube.com/watch?v=oSsQvVga6tw
- Keep windrows up off the ground to minimize soil contamination at harvest.

Issues with wet haylage:

- Reduced intake
- Potential health problems -ketosis
- And for problems to get worse with time

- Dispose of silage with very high (>2%) butyric acid content
- Bad silage can be good fertilizer.



Don't fill your storage with poor first cutting. You'll feel duty-bound to feed out even as it depresses production, cash flow and you.

1st Cutting is just around the Corner

Despite the wet start to the season, we have had more heat than many think. So even though other aspects of springs work are behind the hay is not, with reports from around NYS showing that it is on track for this time of May. *So take the time to check those hayfields starting now!*

Inoculants to Minimize Risk with Haylage Made Under Adverse Conditions?

The probability you may be forced into putting up at least some of 1st crop wetter than you would like has gone up with near-normal relative maturity and saturated soils. Having an effective forage inoculant on hand with a track record of pushing fermentation towards "normal" and away from "clostridial" is good risk management.

Manufacturers and suppliers of inoculants practice supply and demand risk management. They cannot afford to be hung out to dry with pallets full of unsold/unused product. There is only so much product available beyond the pre-orders taken during the winter. If you act fast you may have a shot at some supply.

Effective inoculant? Not much controlled research is done testing inoculants under these known (wet) adverse conditions. Yet we seem to face them more often than we'd like. Check the literature that was dropped off by the representative. Look for actual forage analyses of wet haylage put up under actual farm conditions within the past 5 years with their inoculant. Make sure it was truly "wet", in the 28 – 34% dry matter range (or worse). A slow, cold clostridial fermentation consumes energy, creates intake-depressing butyric acid and breaks down the nitrogen in protein to ammonia. If use of the inoculant was a financial "win" for the farm, these key measures will serve as gauges. pH < 4.5, Lactic Acid > 2 (alfalfa) – 3 (grass), Acetic Acid < 2 (alfalfa) – 3 (grass), Butyric Acid < 0.1 and Ammonia as % of N < 15.

This paper from a University of Minnesota Nutrition conference is a good comprehensive reference:
http://www.cvm.umn.edu/dairy/prod/groups/cvm/@pub/@cvm/documents/asset/cvm_22260.pdf

Is It Too Late for Spring Forage Seedings?

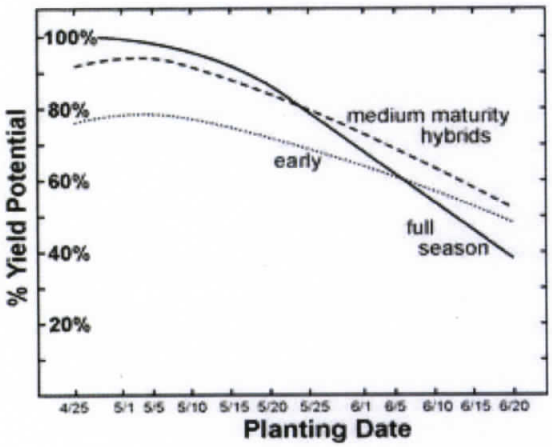
Wet soil conditions and delayed field work have prompted questions on how late alfalfa or clover/grass seedings can be made. The typical spring planting window is April through early May for NNY. Early June is not an ideal time to establish new seedings. The warm soil temperatures and hot weather will bring on large flushes of annual weeds, putting the new forage seedlings at a disadvantage. Consider shifting seedings to early August. In the meantime if you need tonnage you can put in an annual crop after hay is harvested.

If oats are used as a companion crop, their rate of seeding should be reduced to half of normal (or even eliminated) with May seedings.

When is it Time to Stop Planting Corn Altogether?

Here is a graph showing the effect on yield of delayed planting according to hybrid maturity. Unfortunately I don't think there is enough seed available for many farms to be able to switch out their longer season hybrids for short ones at this point. While it is important to keep hybrid maturity in mind, there are a number of other factors you need to consider for your farm. Here are a few of the considerations that may apply:

- Hybrid Maturity you ordered/have on hand
- Forage Inventories
- Ability to store and segregate different forages
- Capacity/ability of your landbase



Excerpt from: 2011 Cornell Guide For Integrated Field Crop Management

To achieve the full yield potential of an early planting date, full-season hybrids *(hybrids that match the growing degree days in a region)* are necessary. After the first or second week of May, however, the yield potential of full-season hybrids decreases appreciably. Furthermore, fullseason hybrids may not mature in the fall if planted after the second week of May. Therefore, for grain production, *full-season hybrids* should be planted only in late April or the first 10 days of May. For silage production, *full-season hybrids* can be planted until mid-May. The majority of corn acreage should be planted to medium-season hybrids (200 growing degree days less than the growing degree days in a region). If planting must be delayed until late May or early June, early-season hybrids are recommended.

Corn planted after late June will be sloppy wet and hard to deal with at harvest and feedout.

Warm Season Annual Forage Crops

Warm season annual forage crops provide additional forage when perennial forages are in short supply. While some farmers include them as part of their regular cropping system, many plant them for emergency forage crops. Delayed spring planting and following winterkilled alfalfa are situations where these crops fit on the farm.

Most warm season annual forage crops can be planted anytime between early June and mid July. There are many warm season annual forage crops that can be successfully grown in Northern New York. Teff and brown midrib (BMR) sorghum sudangrass are two warm season annual grasses that are well suited to our region.

Teff is a warm season annual grass that can be grown for hay, silage or pasture. Despite the fact that there has been very little teff grown in NNY, local research has demonstrated that it has the potential to produce high quality forage under proper management. See Agronomy Factsheets "Teff as an Emergency Forage" http://nmsp.cals.cornell.edu/guidelines/factsheets.html In a one cut system, 1.5 to 2 tons DM per acre are expected, while in a 2 to 3 cut system, dry matter yields range from 3.3 to 4.9 tons per acre. When harvested at the proper time and sufficient nitrogen applied, crude protein will generally be between 15 and 16% of dry matter.

Brown Midrib Sorghum Sudangrass (BMR SxS) is a low lignin, highly digestible, warmseason, annual grass. It can be high yielding but harvest management can be an issue given its high moisture content. See Agronomy Factsheet "Brown Midrib Sorghum Sudangrass, Part 1" http://nmsp.cals.cornell.edu/guidelines/factsheets.html

Dry matter yields of 3 to 5.5 tons per acre are expected and when harvested at the proper time with sufficient nitrogen applied, crude protein will generally be between 15 and 16% of dry matter.

Warm season annual forages can provide needed forage at key times during the year and have been used successfully by producers for many years. In addition to Teff and BMR SxS, other options include Spring Grains, Buckwheat and Japanese Millet. Several factors should be considered before planting any crop. If you have any questions about growing summer annuals contact your local Extension office.

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Key Opportunities to Optimize 2018 Crop Production Efficiency

Joe Lawrence, Kitty O'Neil, Karl Czymmek and Mike Hunter
Cornell CALS

Most farms routinely concern themselves with minimizing expenses and optimizing profits from both the animal and cropping sides of the operation. To assure that cost control strategies don't undermine productivity; i.e. cost more than they save, it is a good idea to avoid risky choices and to use sound, science-based information when planning management options.

1. **Use your acres efficiently**
   There are many fixed costs to farming an acre of land, regardless of the yield or quality harvested from it. Achieving higher yields and higher quality per acre will help control the overall cost of forage production. Focusing on meeting your forage needs on fewer acres may allow you to shed the cost of farming extra acres, or to add diversity with those extra acres with crop alternatives that will provide a better return.

   When developing a cropping plan, it is important to remember that each acre has inherent limitations to its yield potential based in soil type, location, drainage, etc. Spending money on extra inputs to try to push an acre or a field beyond its production potential can be as costly as managing below its potential.

2. **Carefully consider crop varieties and seeding rates**
   Numerous advancements in a crops production potential; yield, quality, water and nutrient use efficiency and pest protection traits, have led to increased seed cost. Using available information to make accurate and efficient seed choices is a far better approach to seed cost control than evaluating seed price alone.

- Use only genetic traits that are needed on each field. The cost of weed or insect control traits in the seed, particularly with corn seed, contribute more to overall seed cost per acre than seeding rate or other factors. Corn Borer is not a big pest in NYS and is of particularly little concern on silage acres, so traits that control it are not likely to pay for themselves. Likewise, don't bother with Corn Rootworm protection on first year corn, but instead use it on 2nd year corn and beyond.
- Glyphosate-tolerant (or Roundup Ready) varieties are a worthwhile investment for fields with hard-to-control weeds, such as annual grasses, or in systems with cover crops or reduced/no tillage. But in other fields where weed populations are stable and may be routinely controlled with pre-emergence herbicide options, the odds of seeing a return on an investment in glyphosate-tolerant genetics is unlikely. A good understanding of weed populations and a good pre-emergence herbicide program can help reduce this cost.

- Choose corn varieties with realistic maturity ranges. Longer-season varieties are expected to yield slightly more, but only if maturity is reached. The gamble on additional yield from a long season variety should be minimized.
- Double-check seeding rates and calibrate your planters. In many instances feedback suggest that alfalfa is seeded at rates much higher than the recommended 15 pounds per acre, with most alfalfa costing more than $4 to $5 per pound, each pound above 15 adds significant cost per acre.
- Recommended corn planting rates vary with soil yield potential and range from 27,750 to 32,250 per acre for grain and 31,000 to 37,750 per acre for silage. Follow company guidelines for specific hybrids. Many corn growers may be reluctant to change corn planting rates based on a particular hybrid and/or soil type because of the extra hassle it requires to make these planter adjustments. Any situation that allows a corn grower to reduce corn planting rates by 3000 seeds per acre will reduce their seed cost by approximately $10 per acre.

3. **Manage tillage and equipment passes across the field**

   Each tractor or truck trip across the field has a cost, in terms of fuel, time and soil compaction, and some are more justifiable than others. Look for opportunities to reduce trips across the field without giving up production. Since a large percentage of the damage done by heavy equipment is done in its first pass over the soil, controlling traffic patterns can limit damage to laneways and headlands and help keep the rest of the field in better conditions.

   Reduced and no-tillage methods can provide significant cost savings on top of tremendous benefits to soil health; however, quitting tillage 'cold turkey' can result in poor crop performance in that first growing season. Understanding the current conditions of your soils is critical to a successful transition. Attempting no-till on soils with poor structure and compaction issues will often produce less than desirable results as it will inhibit seed placement and root development until soil structure recovers.

   Tillage can be a band-aid for imprecisely adjusted planting equipment and/or less than ideal soil conditions. In other words, a properly set up and operated planter that is designed for the field conditions you have will do its job placing seed correctly with less or no tillage. Common advice from no-till farmers is to exercise patience and wait until conditions are correct to plant. While it may feel awkward to be sitting home while neighbors are working land, the time you save in not working land will permit you to plant faster and better when soil conditions are right.

4. **Optimally capture manure and soil nutrients to reduce fertilizer needs**

   An up-to-date soil test is cheap and valuable information. Soil fertility information allows you to focus nutrient inputs on acres where they're needed and where yield benefits and return per acre may be maximized. Accurately reduce fertilizer applications (take a credit) wherever it's possible.

   - Take N credits for grass-legume sods and for soybeans in 1st year corn fields.
   - Prioritize manure applications to 2nd and more year corn fields where N is most needed. Credit N fertilizer applications appropriately.
   - Apply lime where the soil test says it's most needed and where yield potential is highest. Correcting pH with lime takes time but pays big dividends in providing an optimal soil environment for the crop and making soil nutrients most available.

5. **Evaluate real pest management needs**
   Don't rely on one chemical control and definitely don't reduce application rates to save costs on pest management. Like any other year, it is critical to employ a pest control program that minimizes the risk of developing pest resistance, so repeatedly using a single mode of action or reducing rates below label is not advised. Instead, reduce pest management costs through scouting and integrated pest management (IPM) to assure that only proper ingredients and controls are used. Knowing the pest, its population and the science of IPM will help to reduce unnecessary applications and unnecessary ingredients.

   Before spending extra for insect control and herbicide tolerance traits in seed, be sure you have a reasonable expectation of a return on that additional cost. See the above discussion of seed and varieties.

6. **Focus on timely and flexible forage harvest and storage**
   Good management of end-of-season harvest is key to capitalizing on your cumulative, seasonlong efforts. Creating a specific harvest plan maximizes the likelihood of harvesting each feed at the desired quality, regardless of what the growing season throws at you.

   First cutting hay or haylage provides a huge opportunity for good yields of high quality feed but does not need to make or break your year. Consider each acre of hay land, and each cutting, as an opportunity to harvest the highest quality feed you need on your farm. Beginning with first cutting, be prepared to harvest each acre at a high quality stage if weather and circumstances allow. When inventory of lactating quality feed is sufficient, turn your attention to meeting the quality needs of other animal groups on the farm. Using this approach, high quality feed requirements are more likely to be met, leaving lower quality forages to be harvested when unforeseen weather and equipment challenges force delayed harvest.

   Evaluate flexibility and potential to store forages in a way to allow access to forage lots at the right times for the right animal groups. If the ideal forage is buried at the back of the storage when you need to feed it, it has little value. And being forced to feed a low quality forage to a highly productive group of animals because it is the only one accessible can be costly.

   Forage shrink can be very costly. Reduce shrink at the bunk by optimizing packing, matching forage delivery rate and packing tractor weights on bunks and driver over piles, selecting the proper inoculant for each forage and proper coverage to exclude oxygen. Proper face management at feed out will also aid in minimizing losses.

Additional resources:

2018 Cornell Guide for Integrated Field Crop Management. Cornell University Cooperative Extension.

NY Governor Condemns Raid on Dairy Farm

ALBANY (AP) — New York Gov. Andrew Cuomo threatened to sue federal immigration officials Wednesday following a raid on an upstate dairy farm during which armed federal agents allegedly trespassed on private property and handcuffed an American citizen who tried to videotape the incident.

John Collins said the agents who entered his farm in Rome, New York, did not identify themselves or produce a warrant before they arrested a farm worker on charges that he unlawfully re-entered the U.S. following deportation. Collins, who said the worker has proper documentation to work in the U.S., said the officers grabbed his phone and threw it — destroying it — when he used it to videotape the arrest. Collins said he was then placed in handcuffs and threatened with arrest.

Cuomo, a Democrat, sent a cease and desist letter to the U.S. Immigration and Customs Enforcement agency on Wednesday in response to conduct that he deemed "un-American."

"We believe ICE is violating the law and endangering public safety," said Cuomo. "If they continue, the state will sue them. Period."

A spokesman for the U.S. Department of Homeland Security fired back in response to Cuomo's letter.

"Gov. Cuomo's disregard for the rule of law is a slap in the face to the hardworking men and women of ICE whose mission it is to uphold the laws Congress passed," spokesman Tyler Q. Houlton said in a statement.

According to an affidavit provided by ICE, the officers were visiting the farm in an attempt to locate a second individual when they encountered the farm worker, Marcial de Leon Aguilar. The documents say Aguilar was lawfully arrested by deportation officers, who identified themselves and had a proper warrant. ICE said it has removed Aguilar from the U.S. three times, most recently in January 2014. Aguilar was also convicted of reckless aggravated assault, a felony, according to ICE.

In a statement, ICE Deputy Director Thomas D. Homan said "ICE officers acted professionally and within their legal authorities under federal immigration law."

The incident has also prompted scrutiny in Washington, where Democratic U.S. Sen. Kirsten Gillibrand has called for an investigation.

–By DAVID KLEPPER , Associated Press

Mammary Stem Cells Challenge Bovine Disease

Bovine mastitis is typically treated with antibiotics, but with the potential threat of antimicrobial resistance and the disease's long-term harm to the animal's teat, researchers at the Cornell University College of Veterinary Medicine are laying the foundation for alternative therapies derived from stem cells. (Lee Simpson, Flickr/Creative Commons)

ITHACA, N.Y. — Mastitis is the most expensive disease in the dairy industry. Each clinical case can cost a dairy farmer more than $400 and damages both the cow's future output as well as her comfort.

Bovine mastitis is typically treated with antibiotics, but with the potential threat of antimicrobial resistance and the disease's long-term harm to the animal's teat, researchers at the Cornell University College of Veterinary Medicine are laying the foundation for alternative therapies derived from stem cells.

"Antibiotics can kill the bugs," said Gerlinde Van de Walle, the Harry M. Zweig Assistant Professor in Equine Health, "but they don't help with regeneration of the damaged tissue."

Bovine mastitis damages the cow's mammary gland tissue when bacteria cause inflammation. The bacteria can enter the cow's teat when it comes in contact with a contaminated milking machine, a hand or bedding materials. This damaged mammary tissue contributes to milk production losses, quality concerns and increased labor costs.

"Bovine mastitis is the most costly disease in the dairy industry," said Daryl Nydam, DVM, Ph.D., professor in population medicine and diagnostic sciences. "The second-most-costly is almost not worth mentioning in comparison."

According to the U.S. Department of Agriculture, 96.9 percent of dairy facilities use antibiotics to treat clinical mastitis cases. While effective against bacteria, antibiotics alone cannot restore the damaged mammary tissue. In their March 16 paper in *Scientific Reports*, Van de Walle and Nydam explore how the secretions of bovine mammary stem cells can encourage healing and regrowth of damaged tissue as well as rid the mammary gland of harmful bacteria.

"Even after the bug is removed with antibiotic treatment, the milk production will usually not go to its previous highest levels because of that damage to the tissues," said Van de Walle, lead author on the paper. "That's where this alternative therapy comes in."

Van de Walle and Nydam are the first to detail what bovine mammary stem cells secrete. Others have examined the secretome of stem cells from other species, but not bovine. "It's a brand new area of inquiry," said Nydam, and it's led to a host of discoveries.

Their report finds that the secreted factors of these stem cells carry multiple positive effects. They play a role in the formation of new blood vessels and promote the migration of cells, both of which are integral in healing tissue damaged by mastitis. Some secreted factors protect epithelial cells from damage caused by bacterial toxins, and others proved to be antimicrobial peptides that play a role in killing bacteria.

"Besides the tissue regeneration," Van de Walle said, "it could also help the antibiotics work better, since they produce some of those antibiotic properties."

The researchers also found that the secreted factors were more effective against toxins produced by gram-negative bacteria, which are generally more resistant to antibodies because of their thicker cell walls. The bacteria that cause bovine mastitis can be either gram-positive or gram-negative.

"FDA-approved intramammary antimicrobials are more effective against gram-positive bacteria," said Nydam. "So this would be a nice complement to that."

This paper is part of a concentrated effort for basic and applied science faculty to unite their research practices and address an important disease. Van de Walle's lab at the Baker Institute for Animal Health performs basic research on viral pathogenesis and stem cell biology, and Nydam is the director of Quality Milk Production Services, a program that addresses milk quality issues for producers, such as disease control and antibiotic use.

"Based on the positive effects of the bovine stem cell secretome we observed in the lab, we now have to take it to next level and test whether it also work in cows with mastitis," said Van de Walle.

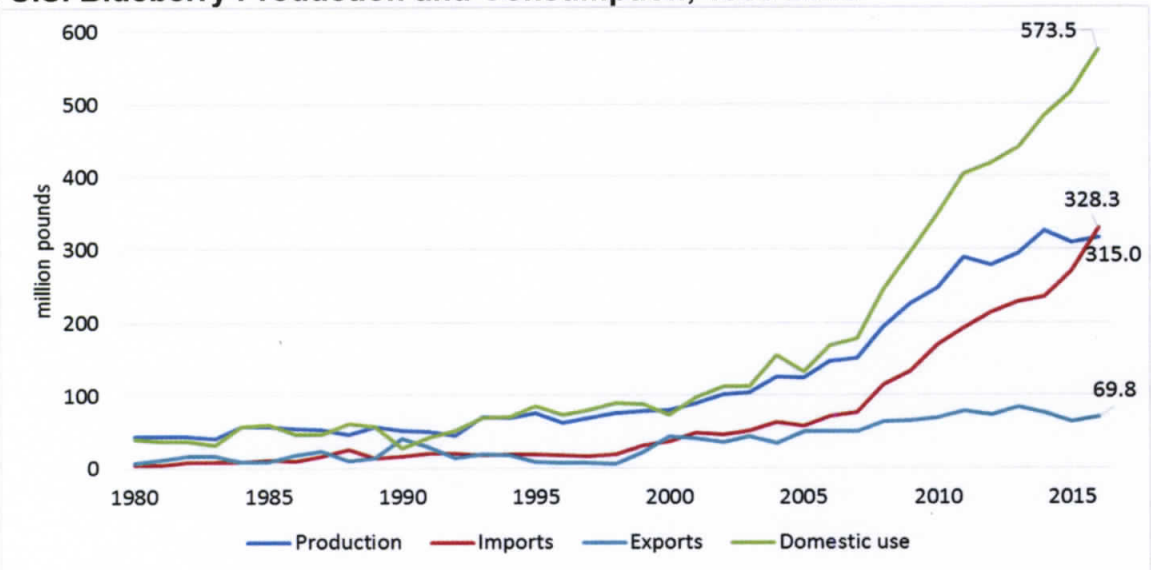
–Cornell University
via EurekAlert!

Blueberries: Is Supply Developing More Rapidly than Demand?[1]

Kristen Park[a] and Roberta Cook[b]
[a]Dyson School of Applied Economics and Management, Cornell University; [b]Fresh Produce Marketing Consulting, Dixon, California and Cooperative Extension Marketing Economist Emerita,
Department of Agricultural and Resource Economics University of California, Davis

Berries fit global preferences for healthful eating, convenience, and flavor. They are easy to consume and the many different uses for snacks, salads, and baking favor the growing demand. Strawberries are the leading berry globally but other berries are rapidly gaining shelfspace in supermarkets led by blueberries. North America, including the U.S., Canada, and Mexico, has the most developed fresh blueberry market in the world with year-round availability from blueberry domestic production, exports, and imports (Figure 1). Approximately 573.5 million pounds of blueberries are consumed in the U.S. market.

Figure 1. U.S. Blueberry Production and Consumption, 1980-2016

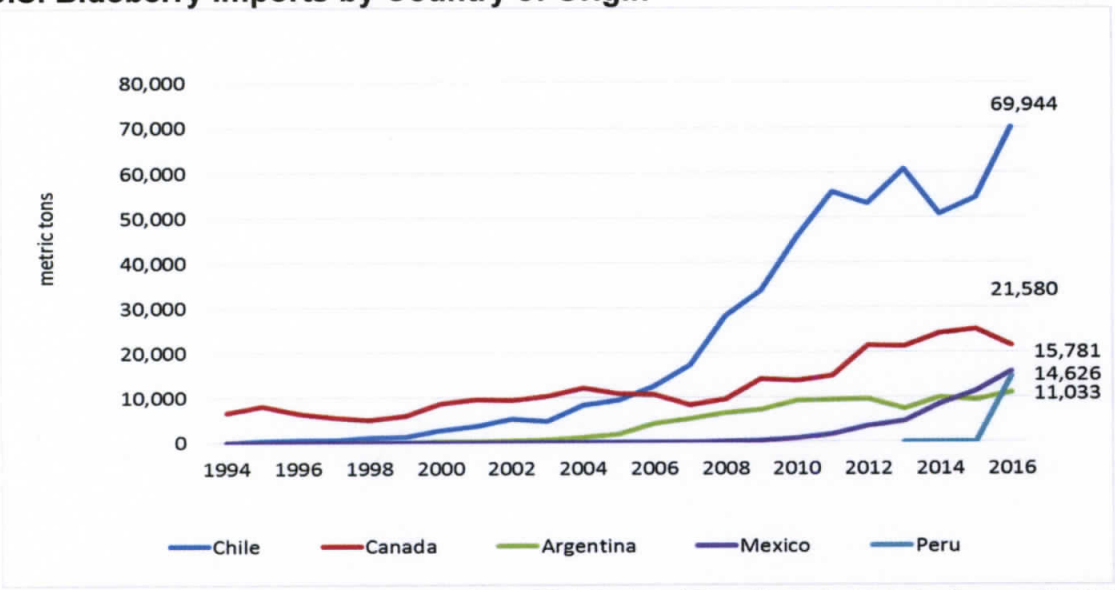


[1] Beginning in 1993, includes wild blueberry fresh-market production.
Source: USDA, ERS, 2017 Fruit and Tree Yearbook, Supply and Utilization tables. February 1, 2018.

[1] This article was taken largely from Cook, Roberta, "Global Fresh Berry Trends: Focus on the N. American Market." New York Produce Show, Global Trade Symposium, December 12, 2017. Presentation.

U.S. blueberry consumption was given a boost in the mid '00's as imports from Chile and Argentina rose to supply consumers in the winter months, enabling retailers to dedicate yearround shelf-space to the berry category. Chile is the leading importer of blueberries to the U.S. (Figure 2).

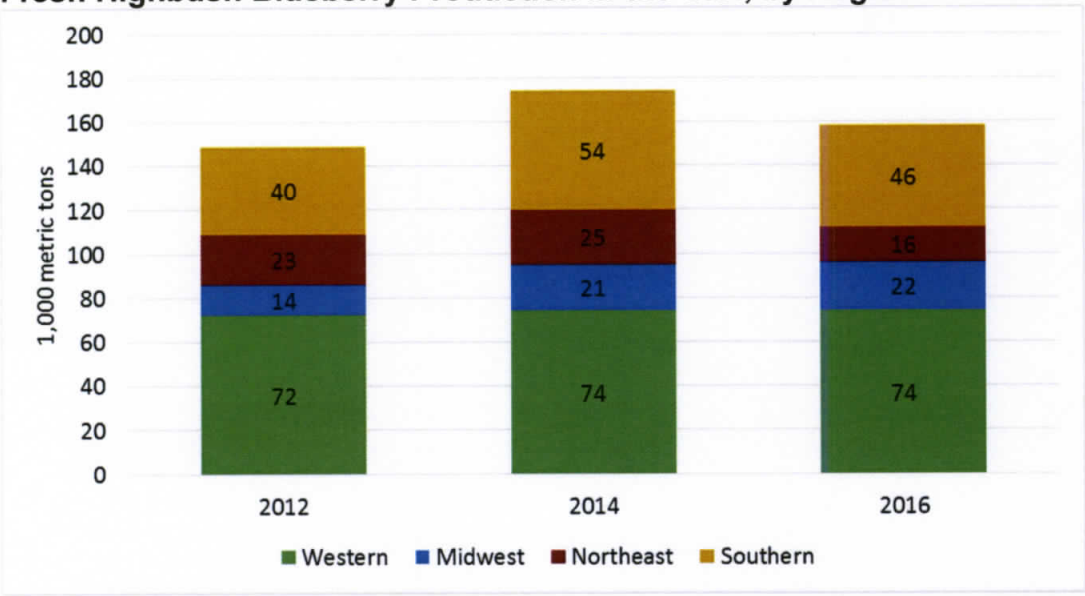
Figure 2. U.S. Blueberry Imports by Country of Origin



Source: USDA, ERS, U.S. Blueberry Industry and USDA, ERS, Fruit and Tree Nut Data, Data by Commodity. February 1, 2018.

The International Blueberry Organization (IBO) publishes a Global Blueberries Statistics and Intelligence Report that comes out annually, most recently in April 2017, with data for 2016. It incorporates data from the USDA. This indicates that about half of the U.S. production now occurs in Western U.S. (Figure 3). Lately, Southern U.S. and the Midwest have appeared to increase their production, while the Northeast production has varied widely.

Figure 3. Fresh Highbush Blueberry Production in the U.S., by Region



Source: Global Blueberry Statistics and Intelligence Report, International Blueberry Organization (IBO), April 2017.

With so much growth in production and consumption in the last 10 years, the industry should be ready for changes. According to Roberta Cook in a recent presentation at the New York Produce Show, Global Symposium in December 2017, the U.S. tends to focus more on the domestic market than they do on exports. Because demand is increasing in other parts of the world, one would think there might be opportunity for U.S. exporters. For example, European retail chains are seeking more supplies. But Europe is quickly developing its own sources of supply, closer to market.

The good news is global demand is increasing fast for all the berries. Cook has a recommendation for U.S. growers interested in marketing blueberries to Europe. When exporting from the U.S. to Europe, you have to be global-GAP certified and meet some different requirements and maximum residue levels. Hence, firms in the blueberry industry that want to export to Europe need to think about it with a long-term approach, setting up operations so they have dedicated relationships with buyers to justify the certification and other requirements.

However, Cook cautions the industry that rapid expansion in global fresh highbush blueberry industry means risk of oversupplies. Within only three years, Peru has emerged as a significant player, surpassing Argentina. Moreover, many believe that within a few years it will surpass Chile's production as well.

Production of blueberries is increasing throughout Europe to meet local summer demand. Spain is the leader in supplying the European market and along with Portugal is developing production for the spring market. In addition, low-chill and no-chill varieties bring warmer areas into production, including Morocco. S. Africa has started to increase production for the EU fall window. Cook predicts the Northern Hemisphere's fall window will see rapid growth in global supply & market share battles.

Quality issues may impact who supplies the markets.

- Argentina did not have to focus as much on quality because they had the fall market pretty much to themselves. This is no longer the case. Their blueberries require fumigation when entering the U.S. market, which can reduce quality. Argentina ships mainly by air in order to reach markets quickly, but is shifting some volume to boats in order to reduce costs in the increasingly competitive fall market.
- Peru can ship by boat using a cold treatment; if berries are held for a certain number of days at a certain temperature, they will meet APHIS requirements, and controlled atmosphere, post-harvest practices help ensure good arrival quality into the U.S. market.
- Mexico does not have to fumigate and has the advantage of proximity to market and overland shipment.

Mexico's new industry originally targeted the fall market; however, it has the ability to prune plants to produce in the winter time and into the early spring. This enables Mexico to potentially hit high prices when there is not a lot of Chilean fruit left in the market and before the major production has started in the U.S.

The question is, is supply developing more rapidly than demand? Cook has the following insights and recommendations:

- Blueberry production is expanding rapidly, increasing global competition throughout the year. In the next five years, firms need to focus on quality and on providing services to customers to be competitive.

- Firms that are successful will be thinking globally. Fortunately, there are companies in the berry industry that are visionary, and firms on the retail side can invest in the berry category quite confidently.
- Blueberries are much lesser known in Europe and may require more investment in marketing.
- U.S. blueberry demand has grown rapidly but growth rates are slowing as the market matures. This may contribute to supply-side consolidation in the North American market.

"Smart Marketing" is a marketing newsletter for extension publication in local newsletters and for placement in local media. It reviews elements critical to successful marketing in the food and agricultural industry. ***Please cite or acknowledge when using this material***. Past articles are available at http://dyson.cornell.edu/outreach/smart-marketing-newsletter.

Legal Framework For Nuisance Wildlife Control in New York State

Lynn Braband, NYS Community IPM Program at Cornell University

The major regulatory agencies for wild vertebrates in New York are the NYS Department of Environmental Conservation (all species) and the U.S. Fish and Wildlife Service (migratory birds and federally endangered species). Every species of wild vertebrate in the state has a legal classification. The classification categories, of most relevance to vertebrate pest management, are "unprotected" and "protected."

An "unprotected" species can legally be taken by the property owner at any time of the year and by any means as long as other laws (i.e., pesticide regulations, firearm discharge ordinances, trespassing laws, etc.) are not violated. However, without a permit, the property owner cannot release the animal off his/her property. The animal must be destroyed and buried or cremated. An "unprotected" animal could also be released on the same property where it was captured. "Unprotected" mammals include shrews, moles, bats (except Indiana bat, which is federally protected), chipmunk, woodchuck, red squirrel, flying squirrels, voles, mice, and Norway rat. The rock pigeon (feral pigeon), house sparrow, and European starling are "unprotected" bird species.

There are two subcategories of "protected" species. For some "protected" mammal species, if an individual animal is causing damage (not merely being a nuisance), it can be captured and/or destroyed by the property owner. Mammalian species, which are classified under this category, include opossum, raccoon, weasels, skunk, and gray squirrel. However, the animal (dead or alive) cannot be transported off the landowner's property without a nuisance wildlife control permit. Exceptions would be animals that are taken during a legal hunting or fur trapping season established for that species if the appropriate hunting or trapping license has been obtained. Another exception is that skunks may legally be taken if only a nuisance (not causing damage).

Nuisance wildlife control permits are issued to individuals who have gone through the prescribed application process. These permits allow the removal of the aforementioned "protected" animals in any number, at any time, and from any location (with permission of the landowner) within the state. Individuals who have obtained a permit, which must be renewed annually, include private nuisance wildlife control operators, many pest control operators, municipal animal control officers, and some wildlife rehabilitators.

A few mammals (including bear, beaver, deer, mink, and muskrat), most birds, and

(currently) all reptiles and amphibians are not only "protected" but cannot be captured and/or removed from property without special case-by-case permits.

NOTE: This document is for information only. If you have a question concerning the legal status of a species or contemplated action, contact the Wildlife section of the regional office of the NYS Department of Environmental Conservation. For more information, visit
http://www.dec.ny.gov/animals/81531.html

Ag Barometer Down Again Amid Trade War Concerns

Barometer based on a monthly survey of 400 ag producers from across the country

Producers' weakening perceptions of current conditions in the production agriculture sector, along with a decline in their expectations for future economic conditions, were the main drivers of the barometer's overall decline, said James Mintert, the barometer's principal investigator and director of Purdue University's Center for Commercial Agriculture. (U.S. Department of Agriculture, Public Domain)

WEST LAFAYETTE, Ind. and CHICAGO — Trade war concerns continue to drive a sharp decline in producer sentiment toward the agricultural economy, according to the Purdue University/CME Group Ag Economy Barometer.

The April barometer reading of 125 was 10 points lower than a month earlier and 15 points below the February reading. The barometer is based on a monthly survey of 400 agricultural producers from across the country.

The drop in producer sentiment was driven by declines in both the Index of Current Conditions, which fell 11 points to 123, and the Index of Future Expectations, which fell 9 points to 126. The Index of Current Conditions was at its lowest level since May 2017, while the Ag Economy Barometer and the Index of Future Expectations were at their lowest levels since March 2017.

Producers' weakening perceptions of current conditions in the production agriculture sector, along with a decline in their expectations for future economic conditions, were the main drivers of the barometer's overall decline, said James Mintert, the barometer's principal investigator and director of Purdue University's Center for Commercial Agriculture.

"There seems to be a spillover effect that is driving concern among agricultural producers," Mintert said. "Negative perceptions about exports spill over into lower expectations for commodity prices, and then that changes producers' views about farmland prices."

The trade dispute with China continues to be an area of concern. The biggest issue is the possible impact on U.S. soybean exports, 30 percent of which go to China. A majority of producers said they expect a sharp decline in the November soybean futures contract price, possibly to below breakeven.

The April survey also showed a decline in the number of producers expecting good times for the livestock sector, with just 45 percent saying they felt optimistic about the future compared to 59 percent a month earlier. This is the largest one-month drop since data collection began in fall 2015.

"There was already a sharp drop in hog prices that took place from mid- to late- winter, then add to that the impact of China's 25 percent tariff on U.S. pork imports," Mintert said. "It adds a layer of doubt regarding the profitability

of pork production and appears to be affecting producers' plans to increase hog production."

The survey also asked producers about their perspectives on farmland values. There was a noticeable decline from mid-winter, with 46 percent feeling optimistic about higher land values in 5 years compared to 53 percent in February.

Producer sentiments toward large investments on their farms and used machinery values stayed mostly unchanged compared to a month earlier, with 28 percent of respondents saying it was a good time to make large farm investments, 1 percent lower than in March.

Read the full April Ag Economy Barometer report at http://purdue.edu/agbarometer. This month's report includes additional information on the challenges facing livestock producers, weakening sentiment toward farmland values, and continuing trade war concerns.

The Ag Economy Barometer, Index of Current Conditions and Index of Future Expectations are available on the Bloomberg Terminal under the following ticker symbols: AGECBARO, AGECCURC and AGECFTEX.

About the Purdue University Center for Commercial Agriculture The Center for Commercial Agriculture was founded in 2011 to provide professional development and educational programs for farmers. Housed within Purdue University's Department of Agricultural Economics, the center's faculty and staff develop and execute research and educational programs that address the different needs of managing in today's business environment.

About CME Group As the world's leading and most diverse derivatives marketplace, CME Group (www.cmegroup.com) is where the world comes to manage risk. CME Group exchanges offer the widest range of global benchmark products across all major asset classes, including futures and options based on interest rates, equity indexes, foreign exchange, energy,agricultural products and metals. Around the world, CME Group brings buyers and sellers together through its CME Globex® electronic trading platform. CME Group also operates one of the world's leading central counterparty clearing providers through CME Clearing, which offers clearing and settlement services across asset classes for exchange-traded and over-the-counter derivatives. CME Group products and services ensure that businesses around the world can effectively manage risk and achieve growth.

—CME Group
via PRNewswire

Dairy Market Watch

Milk Component Prices			Milk Class Prices				Statistical Uniform Price & PPD					MPP
Month	Butterfat	Protein	I (Boston)	II	III	IV	Jamestown, NY		Albany, NY		Albany $/gal. to farmer	Milk Margin Minus Feed Costs ($/cwt)*
Mar 17	$2.42	$1.82	$20.15	$16.21	$15.81	$14.32	$16.15	$0.34	$16.75	$0.94	$1.44	$9.35
Apr 17	$2.35	$1.69	$19.30	$14.81	$15.22	$14.01	$15.24	$0.02	$15.84	$0.62	$1.37	$8.54
May 17	$2.41	$1.77	$18.45	$14.84	$15.57	$14.49	$15.36	($0.21)	$15.96	$0.39	$1.38	$8.61
June 17	$2.71	$1.75	$18.56	$16.15	$16.44	$15.89	$16.38	($0.06)	$16.98	$0.54	$1.41	$8.97
July 17	$2.95	$1.22	$19.84	$17.48	$15.45	$16.60	$16.86	$1.41	$17.46	$2.01	$1.51	$9.08
Aug 17	$3.01	$1.55	$19.97	$17.56	$16.57	$16.61	$17.18	$0.61	$17.78	$1.21	$1.48	$10.27
Sep 17	$2.86	$1.70	$19.96	$16.80	$16.36	$15.86	$16.74	$0.38	$17.34	$0.98	$1.49	$9.99
Oct 17	$2.11	$2.66	$19.69	$15.95	$16.69	$14.85	$16.29	($0.40)	$16.89	$0.20	$1.46	$10.00
Nov 17	$2.55	$2.34	$19.66	$15.32	$16.88	$13.99	$15.99	($0.89)	$16.59	($0.29)	$1.38	$10.39
Dec 17	$2.50	$2.03	$20.13	$14.49	$15.54	$13.51	$15.56	$0.12	$16.16	$0.72	$1.39	$9.36
Jan 18	$2.45	$1.66	$18.69	$14.11	$14.00	$13.13	$14.55	$0.55	$15.15	$1.15	$1.31	$8.11
Feb 18	$2.34	$1.62	$17.50	$13.44	$13.40	$12.87	$13.73	$0.33	$14.33	$0.93	$1.24	$6.88
Mar 18	$2.42	$1.80	$16.61	$13.88	$14.22	$13.04	$13.91	($0.31)	$14.51	$0.29	$1.25	$6.76

March Utilization (Northeast): Class I = 33%; Class II = 23%; Class III = 25%; Class IV = 19%.

***Class I** = fluid milk; **Class II** = soft products, cream, and yogurt; **Class III** = cheese (American, Italian), evaporated and condensed products; **Class IV** = butter and milk powder.*

*At a milk margin minus feed costs of $8 or less, payments are possible depending on the level of coverage chosen by the dairy producer.

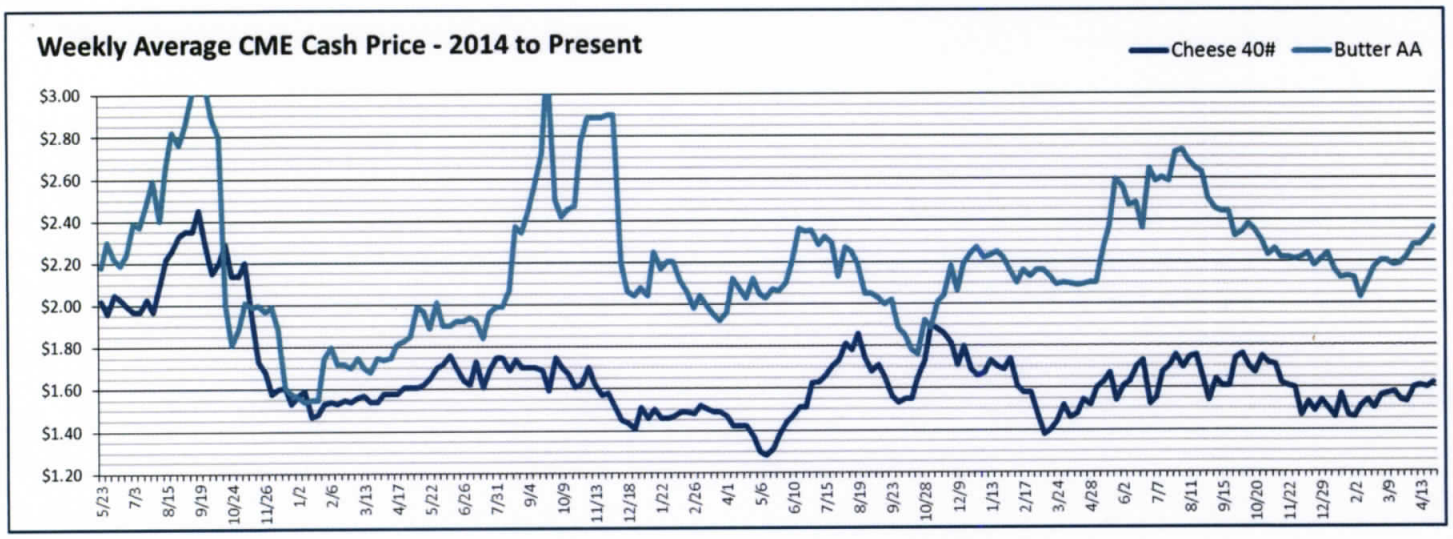
Cheese: General interest in U.S. cheese from international buyers has aided the movement of cheese stocks into foreign markets. The domestic cheese market tone is progressive. Cheese demand is steady with strong demand for blocks and barrels. Cheesemakers report consistent restaurant and retail orders nationwide, with sales expected to rise as the summer grilling season nears. Despite the cheery news, some Western contacts report slightly long stocks for barrels and heavy inventories for natural cheese varieties, such as mozzarella and hard Italian. The U.S. cheese production is steady with producers managing heavy milk supplies very well. The spring flush arrived in the Northeast this week as warmer weather moves into the region.

Butter: International butter markets are the topic du jour for butter producers in the U.S. Butter makers are reporting steady to strong sales domestically, but international interest is definitely pushing northerly. Cream supplies are readily available. Cream prices are steady to slightly up week over week.

Friday CME Cash Prices					
Dates	3/29	4/6	4/13	4/20	4/27
Butter	$2.21	$2.28	$2.28	$2.31	$2.36
Cheese (40# Blocks)	$1.53	$1.60	$1.60	$1.60	$1.62

Fluid Milk: With current favorable weather conditions in most regions of the U.S., milk production is steady to increasing in the Northeast, Mid-Atlantic, Midwest, Arizona, Pacific Northwest, and the mountain states of Idaho, Utah, and Colorado. Nonetheless, in the Southeast, California, and New Mexico, outputs have slightly decreased. Condensed skim inventories are profuse and selling at discounted prices. Cream is available for all usages in the East and Central, but in the West, availability varies.

Dry Products: Prices for low/medium heat nonfat dry milk (NDM) are higher this week. The demand is mixed as some buyers are purchasing at higher prices, and others are willing to wait out this price uptrend. The market undertone is uncertain. High heat NDM prices are steady to a tad higher. Spot market activity is limited as offers from manufacturers are few. The market tone is quiet. Dry buttermilk prices are somewhat mixed. Interest is increasing and the current tone is showing some strength. Dry whole milk prices are unchanged. There have been many requests for spot loads, but availability is getting tight. The market tone is showing signs of firmness. Dry whey prices are higher this week. Export interest is putting upward pressure on market prices. The tone is fairly stable.



Excerpt from "Dairy Situation and Outlook, April 20, 2018"
by Bob Cropp, Professor Emeritus, University of Wisconsin Cooperative Extension

Milk prices continue on the path of slow recovery. The prices of butter, cheese, dry whey and nonfat dry milk will average higher in April than March increasing the Class III and Class IV prices. Comparing average April prices to March, butter on the CME could average about 9 cents per pound higher, 40- pound cheddar blocks about 4 cents higher and dry whey about 2 cents higher. Cheddar barrels however will be about 3 cents lower. These price changes will put the April Class III price near $14.50 compared to $14.22 for March and the low of $13.40 for February. The average nonfat dry milk price could be about 5 cents higher. The combination of higher butter and nonfat dry milk prices will increase the April Class IV price to near $13.60 compared to $13.04 for March the low of $12.87 for February.

Milk prices haven't been helped by the fact that milk production started the year well above a year ago. Both January and February production was 1.8% higher. This resulted in relatively high increases in the production of dairy products. Improved dairy exports is providing some optimism for better milk prices. Exports have been running higher than a year earlier since July of last year. Dairy exports on a volume basis reached an all-time high in February due to increased exports to China, Southeast Asia, South America, Middle East/North Africa and Japan.

With more optimism for domestic sales and dairy exports how much milk prices improve for the remainder of the year depends a lot on the level of milk production. USDA revised down increases in milk production from 1.8% for both January and February to 1.7% and 1.6% respectively. Positive for continued improvement in milk prices is USDA's estimated March milk production to be up just 1.3%. Milk cow numbers declined by 2,000 head, the first decline since September of last year and were just 0.2% higher than a year ago. The slowdown in milk production came from a relatively small increase in milk per cow of just 1.1%.

This year the growth in milk production is coming from the West with little or no increase in the Northeast and Midwest. It now appears the Class III price could be in the $15's by June and in the $16's by August or September but still averaging for the year about a dollar lower than the $16.17 average last year. The Class IV price could reach the $15's by September, but also average for the year about a one dollar lower than the $15.16 average last year. Class III and IV futures support similar prices. But, in April USDA was forecasting prices lower than this with Class III in the range of only $14.20 to $14.70 and Class IV in the range of only 13.25 to $13.85.

Cornell Cooperative Extension
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Bath, NY 14810

ADDRESS SERVICE REQUESTED

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COMING EVENTS Continued

May 12-10:00 am-12:00pm-Organic Pest Management-Groundswell Incubator Farm, 24 Helens Way, Ithaca, NY 14850. To register or for more information: email: info@groundswellcenter.org or phone: 607.319.5095

May 15th-10:00-3:00-Silvopasturing when Planning for Profit with Livestock- North Branch Farm, 208 River Road Saranac, NY 12981 10:00-3:00.To register: Contact: Kristin Ballou, Franklin County SWCD, Phone: 518-651-2097 or email: kballou@fcswcd.org

May 17th-6:30-9:30 pm-Pasture & Farm Walk-Garry Wilson Beef, 8962 Transit Road, Stafford, NY. To register contact Cathy Wallace at 585-343-3040, ext. 138 or email: cfw6@cornell.edu

May 26-27-2-Day Intensive Vegetable Farmer Training for Veterans, Email drk5@cornell.edu for more information.

May 29-4:40-6:00 pm-Finger Lakes Grape Program Tailgate Meeting-Randall Standish Vineyards, 5501 Route 21, Naples, NY.

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FOR LEASE

Seeking conservation minded individual with interests in permaculture to rent 3-4 acre, gentle grade, southern exposure field for agricultural production in Steuben County, NY. Acceptable practices include organic vegetable production, small scale poultry, and organic greenhouse or high tunnel production. Other considerations will be determined by owner. Improved, uncultivated ground will require proper preparation for success. Currently no housing available on the property, but can be discussed with owner in the future. Contact CCE Steuben at 607-664-2574 for further information.

Attention Christmas Tree Farmers I have 40-60 acres to lease at a reasonable rate. The property is located in Steuben County between Bath and Hornell. Contact Merwyn Crane at 1-315-591-8104.

Attention Cattle Farmers: I have pasture/farmland for rent, 40-50 acres, reasonable rate. Located in Steuben County on State Rt. 63. Contact Marian Crawford at 585-728-5303.