AG FOCUS



2019 NY Corn & Soybean Growers Association Yield Contest Winners by Mike Stanyard

The annual corn and soybean yield contests are sponsored by the New York Corn & Soybean Growers Association. Congratulations to our 2019 NY Corn Champion, Adam Kirby from Orleans County with a winning yield of 277.44 bu/a. Our NY Soybean Champion, Root Brothers, also from Orleans County, had a winning yield of 80.56 bu/a. They win all expense paid trips to the 2020 Commodity Classic in San Antonio, TX in February. Listed here are state winners and West and Finger Lakes regional winners. The Central, North and East regional corn and soybean winners can be found on the NY Corn & Soybean Growers Association webpage at, https://nycornsoy.org/ wp-content/uploads/2020/01/2019-Yield-Contest-Results.pdf. There were no national winners from NY this year but the results of the National Corn Contest can be found here, https://www.ncga.com/for-farmers/national-corn -yield-contest. David Hula from Charles City, Virginia broke his own national corn yield record with an amazing 616.20 bu/a!

2019 NY Corn and Soybean NYS and Regional Winners Sponsored by the NY Corn and Soybean Growers Association

Rank		Entrant Name	Town	County	Brand	Number	Yield (bu/a)
Corn Contest NYS Winners							
1		Adam Kirby	Albion	Orleans	Pioneer	P0843AM	277.44
2		Bob Pawlowski	Verona	Oneida	Channel	197-66VT2	277.22
3		Ben Verratti	Gasport	Niagara	DEKALB	DKC 58-24	263.72
West Regional Winners							
1		Adam Kirby	Albion	Orleans	Pioneer	P0843AM	277.44
2		Ben Verratti	Gasport	Niagara	DEKALB	DKC 58-24	263.72
3		Tom Corcoran	Caledonia	Livingston	Channel	197-90STX	252.40
Finger Lakes Regional Winners							
1		Philip Weaver	Bath	Steuben	Channel	197-66VT2	241.73
2		Doug LaFave	Locke	Cayuga	Channel	197-66VT2	240.65
3		Tim Freier	Geneva	Seneca	Pioneer	P0506AM	226.24
Soybean	Soybean Contest NYS Winners						
1		Root Brothers	Albion	Orleans	FS HISOY	HS 18X70	80.56
2		Ben Verratti	Gasport	Niagara	Channel	2108R2	76.40
3		Ben Verratti	Gasport	Niagara	NK	S20-T6	74.56
West Regional Winners							
Group	0	Dan Petit	Medina	Orleans	Asgrow	AG08X8	67.28
	1	Root Brothers	Albion	Orleans	FS HISOY	HS 18X70	80.56
	2	Ben Verratti	Gasport	Niagara	Channel	2108R2	76.40
Finger Lakes Regional Winners							
Group	0	Mark Lott	Waterloo	Seneca	Asgrow	AG09X9	65.71
	1	Tim Freier	Geneva	Seneca	Pioneer	P19A14X	71.38
	2	John Weaver	Bath	Steuben	Channel	2108R2	72.89
	3	Emory Oese-Siegal	Waterloo	Seneca	Chemgro	3751RXS	67.03

A partnership between Cornell University and the CCE Associations in these nine counties:

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For more information about our program, visit us at:
nwnyteam.cce.cornell.edu





Upcoming Webinars

February 10, 2020 - Noon (CST)

Nutritional regulation of gut function in calves: colostrum and milk

Michael Steele, University of Guelph

https://hoards.com/flex-309-Webinars.html

February 11, 2020 - 8:30AM (EST)

Principles of Manure Management: Juggling the Challenges

Dan McFarland, Penn State

https://extension.psu.edu/technology-tuesdays

February 24, 2020 - 1:00PM (EST)

Considerations for on-farm processing
Ginger Fenton and Sam Robinson, Penn State
https://extension.psu.edu/dairy-management-mondays

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Two Cornell University Studies Find That Organic Grain Cropping Systems Outperformed Conventional Grain Cropping Systems Based Upon Present Values of Returns Over Time by John Hanchar and Bill Cox

Note: the following abbreviations are used in this article.

Abbreviation	Description
С	Corn Grain
S	Soybean
W	Wheat
RC	Red Clover, Green Manure Crop
RC-C-S-W/RC	4 Year Sequence, Red Clover-Corn-Soybean-Wheat/Red Clover
C-S-C-S	4 Year Sequence, Corn-Soybean-Corn-Soybean
S-W/RC-C-S	4 Year Sequence, Soybean-Wheat/Red Clover-Corn-Soybean

Summary

- Two present value analyses by Cornell University researchers – Hanchar, Cox and others, and Li and others, conclude that organic grain cropping systems generate greater present values of returns over time.
- Transition period returns tend to be negative for the organic grain cropping system when transitioning from conventional to organic production, suggesting that a farm business' ability to meet cash flow obligations in a timely manner will be challenged.
- Sensitivity analyses with respect to expected yields and organic price premiums suggest considerable variability in expected outcomes, resulting in an environment of risk and uncertainty, particularly during the transition period.

Background

For background please see: Cornell University's "What's Cropping Up? Newsletter" website for reports by Professor Cox on the multiyear study https://scs.cals.cornell.edu/extension-outreach/whats-cropping-up; and the article in the January 2020 issue of Ag Focus by Hanchar and Cox.

In the second study described in this article, Jie Li and fellow researchers examined costs and returns to better understand organic grain production in New York. Please



The organic corn-soybean-wheat/red clover rotation was the most profitable rotation from 2015 to 2018.

see Cornell University's Dyson School, Extension Bulletins for 2019 for a detailed reporting on the study https://dyson.cornell.edu/wp-content/uploads/sites/5/2019/08/Cornell-Dyson-eb1904.pdf.

Present Value Results

Analysts use present value (PV) methods to express future returns in current dollars by discounting streams of future returns using a discount rate. PV methods reflect individuals' preferences to receive a dollar today versus a

(Continued on page 5)

(Continued from page 4)

dollar at some future date. PVs provide a basis for comparing proposed changes in the farm business.

PVs of streams of future returns summed over 4 years based upon information from the Cox study ranged from a low of \$976 per acre for the Conventional, Recommended and High Inputs treatments, S-W/RC-C-S Sequences to a high of \$1,870 per acre for the for Organic, Recommended Inputs, S-W/RC-C-S Sequence (Table 1).

Based upon the Cox study data, accumulated returns above total selected costs averaged

- \$365 per acre for all conventional, management, sequence combinations during the transition period 2015 through 2016, ranging from \$123 to \$635 per acre
- \$70 per acre for all organic, management, sequence combinations during the transition period, ranging from negative \$157 to positive \$200 per acre

Results suggest that during the transition period, a farm

business' ability to meet cash obligations in a timely manner will likely be challenged.

A second study by Cornell University researchers Li and others yielded the following PVs of returns for their 6 year study period using a discount rate of 1.25 percent.

- \$1,633 per acre for their organic system
- \$1,042 per acre for their conventional system

Li and others also report the year in which the PV of the accumulated profit differential is greater than zero for various yield and organic price premium scenarios. Key findings follow.

- the year in which the above PV exceeds zero averages about year 6
- the year ranges from a low of year 4 for the initial scenario to a high of year 7 for the scenario where the organic price premium is lowered by 20 percent, yield fixed; and the scenario where yield is lowered by 20 percent, price fixed

Table 1. Present Value (PV) by production system, management treatment by sequence.

Production System, Management Treatment	4 Year Sequence	PV 4 Year Stream of Returns (2015 through 2018)
Organic, Recommended Inputs	S-W/RC-C-S	1,870
Organic, High Inputs	S-W/RC-C-S	1,710
Organic, Recommended Inputs	C-S-C-S	1,459
Organic, High Inputs	C-S-C-S	1,258
Conventional, Recommended Inputs	C-S-C-S	1,258
Conventional, High Inputs	C-S-C-S	1,258
Conventional, Recommended Inputs	S-W/RC-C-S	976
Conventional, High Inputs	S-W/RC-C-S	976

Note: PV results use data from the Cox study. See reference above. Discount rate is a nominal 4 percent.

Source: Cox and others. 2019. <u>http://blogs.cornell.edu/whatscroppingup/2019/08/09/organic-compared-to-conventional-crop-rotations-lost-during-the-transition-but-made-more-in-the-2-years-after-the-transition-and-in-the-total-4-years-of-the-study/</u>



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Safety Training for New Employees by Libby Eiholzer

Dairy farms are getting pretty good at providing annual safety training, which is an important part of maintaining and creating a positive culture around farm safety. But what about new employees? Farm employers can't assume that employees will know how to avoid all the safety hazards that they might encounter on the farm. People who have never worked on a farm, or in any case have never worked on *your* farm, will need to be trained on the safety hazards unique to their new place of work. This must be done before the employees are exposed to dangers in the workplace. Here are a few simple ways to get new employees started off on the right foot.

- 1. Share your farm's **safety expectations**. This can be as simple as 1-2 sentences that set an expectation. "It is important for our employees to work safely both to protect himself/herself and to protect others" or "We want everyone to go home safe and healthy at the end of every day."
- 2. Share the **top 5 safety concerns** for the new employee's job. This will vary between jobs, but you could create a few different lists for employees depending on their work areas (i.e. barn versus field crews). Go ahead and fill this out below!

(Continued on page 8)

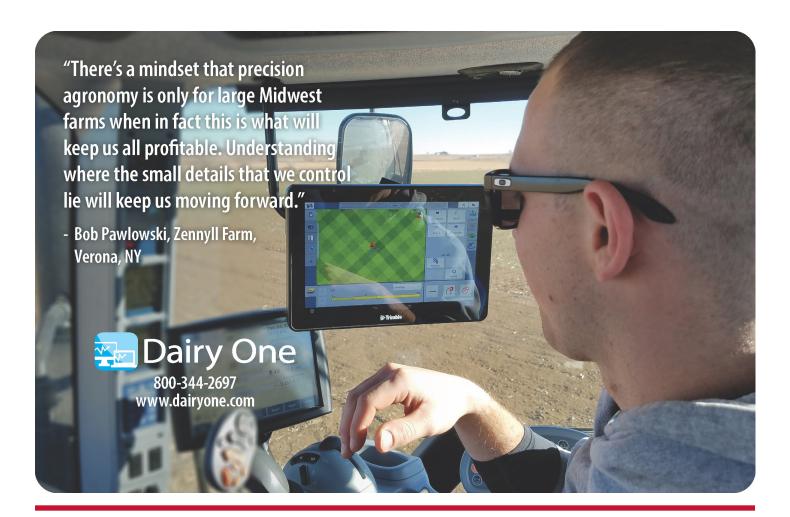
Safety Risk	How to avoid it
Example: PTO drive lines	Never work around unshielded PTO's. Don't step over a PTO. Don't wear loose fitting clothing around equipment. Let manager know about any unshielded or damaged PTO shields.
1.	
2.	
3.	
4.	
5.	

Safety Training for New Employees

(Continued from page 7)

- 3. Point out any safety posters on the farm and discuss why the material is important. This is a great way to have a more informal training and encourage conversation. NYCAMH has many posters available in English and in Spanish on their website, with topics like Animal Handling, Tractor & Skid Steer Safety- https://www.nycamh.org/resources/posters.php. They are available for download, but you can also call NYCAMH and request that they send you printed posters- these are large and durable, great for the farm.
- 4. Show employees the location of **personal protective equipment** (PPE) that they may need as well as first aid equipment and emergency phone numbers.
- 5. Encourage employees to **communicate about safety concerns** and instruct them to tell the owner/supervisor immediately if they hurt themselves on the job. Explain how Worker's Compensation works and the process for filing a claim.
- 6. **Document!** While it might not feel like what you think of as "safety training," taking the time to cover the material above is teaching your employee about safety. Write it down and save a copy in your safety training records.

These materials are part of the *Onboarding Template*, designed to help farm employers develop a plan for creating safe, productive and engaged employees from day one. View the Onboarding Template and other materials at https://agworkforce.cals.cornell.edu/onboarding/.



Back to the Basics: The Fundamentals of Crop Scouting

by Jodi Putman

Field monitoring, or scouting, is the backbone of all pest management programs. Detailed assessments of pest populations must be obtained before pest control decisions can be made. It is important to have thorough knowledge of pest and crop biology, pest identification and habits, correct sampling methods, and economic thresholds (when available). The objective of scouting is to provide a complete, accurate and unbiased assessment of pest populations. The field scout is the direct link between the consultant and the grower.

Many growers and consultants act as the field scout on farms throughout western New York. Through the improvement of crop genetics and pesticide options, the knowledge needed to implement an integrated pest management plan on farms has declined. An example of this would be the introduction of glyphosate (Roundup[®]) in the mid-1990's, which has decreased our need for precise and accurate weed identification. However, with herbicide resistance being a major problem in the United States, there's a severe need for proper training on correct weed identification and management options in our crop production systems in New York.

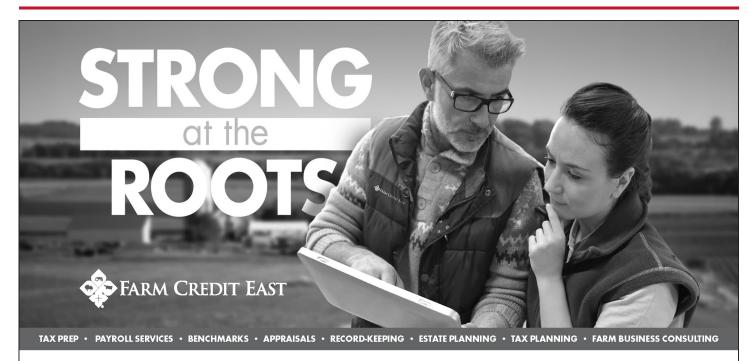


Josh Putman at Kansas State Agronomy Scout School, leading the Weed I.D. Session. Photo courtesy of Josh Putman.

A systematic approach to troubleshooting can help prevent the bias of only looking for the familiar and preventing the investigative process. For the novice, troubleshooting can be intimidating in the absence of a systematic plan. Here are a few steps to help implement a systematic approach when troubleshooting field crop problems:

- 1. Determine plant stage of development and variety.
- 2. Identify all symptoms on the leaves, stem, roots, and fruit, and inside the stem and root.
- 3. Estimate the percentage of plants damaged in the affected area of the field.
- 4. Determine the field distribution or try to identify the pattern of the problem in the field.
- 5. Evaluate whether weeds in the field (and borders) share similar symptoms.
- 6. Determine the history of the problem, which often provides the foundation for accurate diagnosis (or the elimination of other potential causes).

Several Land Grant Universities across the United States host an agronomy scout school that provides entry-level crop scouts, growers, and agriculture industry personnel (i.e. non-CCA's with limited or no crop scouting experience, or serve as a refresher) with an overview of the fundamentals necessary for scouting in soybeans, corn, forages, and small grains. Proper crop scouting provides invaluable information growers can use to make informed decisions to protect yield and quality in their fields. Getting that information requires a plan for how and when to monitor your fields. The NWNY and SWNY Regional Extension Field Crop Specialists are teaming up to bring you the region's very first New York State Agronomy Scout School! Please stay tuned for future announcements of when and where this training will take place.



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Sainfoin - an Alternative Forage for New York?

by Nancy Glazier

Have you ever heard of sainfoin? I was asked about this forage a while back and had to do some research to learn what it is and its potential in NY.

Sainfoin (*Onobrychis viciifolia* Scop.) is a legume that was introduced from arid regions of Europe and Russia. It was introduced in the Northern Great Plains in the 1900s as an alternative pasture or hay forage. It grew for a while in NY in the early 1900s until root and crown disease issues ended its use.



Sainfoin has an alternate leaf pattern. **Photo from**: *An Introduced Legume for Conservation Use in Montana and Wyoming* by Roger M. Hybner, Research Agronomist, NRCS Bridger Plant Materials Center. *https://www.nrcs.usda.gov/*

There are certainly favorable attributes to sainfoin's use. Roots are deep rooted and branched, which helps with its drought tolerance. Its leaves contain condensed tannins like birdsfoot trefoil, so it is a non-bloating legume, extremely palatable as a hay or pasture plant. Livestock prefer it over alfalfa and its coarse stems grow tall (over 36") but remain digestible as it matures; unlike alfalfa it holds its lower leaves. Stand expectancy is 6-8 years under favorable conditions and is very winter hardy. It is also valued as a crop for honeybees.

Breeding programs in Northern Great Plains have worked to develop improved varieties. Earlier varieties were susceptible to nematodes, which led to infection of root and crown diseases. Many older varieties were suited for only one to two cuttings, with no cuttings the seeding year and were not competitive with grass mixes.

The variety Shoshone was released in 2005 with tolerance to Northern root-knot nematode and alfalfa stem nematode and is also higher yielding than the older varieties. Delaney is another newer variety that is higher yielding and is considered desirable for multiple cuts. Remont was selected for its rapid regrowth.

Sainfoin prefers neutral soils that are well drained. Fertility is important. Seeding can be done early spring with inoculant specific to sainfoin into a well prepared seedbed at ¾" depth. Seeding rate for western regions is 30 to 35 lbs pure live seed, 40 to 45 lbs where irrigated. It has been planted with grass mixes at reduced rates; mixes may reduce yield, but help reduce weed competition.

The forage grows well in dry areas, but what about in our temperate climate? It is sometimes grown with irrigation, with dry conditions in between irrigation. It may not be as long lived in areas with ample rain and humid conditions due to diseases.

I checked some seed catalogs and spoke with one seed company and cannot find it commercially available in NY. A quick internet search lists seed for sale. Seed cost is ballpark \$2-3 per lb. If you decide to give it a try, let me know, I'd like to see it. I would also suggest starting with a small planting.



Mature sainfoin in flower. **Photo from**: USDA NRCS Plant Guide Sainfoin Onobrychis viciifolia Scop. https://www.nrcs.usda.gov/



Funds Available for Repairs or Upgrades that Improve Safety on NY Farms

The New York Center for Agricultural Medicine and Health (NYCAMH) is offering financial assistance to farm operations for repairs and upgrades that help make for a safer workplace.

Farmers are awarded 50% of the cost of the project, up to \$5,000.

The cost-matching program is designed to address the unique needs of small and medium-sized farm operations without the complexities often attached to many agricultural grants.

Recently funded projects: cattle handling systems, silo repairs and barn electrical repairs

APPLY NOW

Contact NYCAMH at 800.343.7527 or email jmfsf@bassett.org







Who can apply?

Applicants must meet all 3 criteria to be considered:

- 1. Active farmer, part-time or full-time
- 2. New York State resident
- 3. Annual farm gross income of \$10,000 to \$350,000 for non-dairy operations or fewer than 700 milking cows for a dairy operation

Where do I begin?

Fill out an application. (Go to www.nycamh.org and search for the John May Farm Safety Fund)

If you're unsure of your farm's safety needs or how to prioritize them, start by requesting a free, confidential on-farm walkthrough with a NYCAMH safety specialist.

How much do I have to pay and when?

The applicant pays for the project upfront and gets reimbursed the approved 50% of the project, up to \$5,000, upon documented completion.



Bassett Healthcare Network
New York Center for Agricultural
Medicine and Health

You Don't Say... by Timothy X. Terry, Harvest NY

It's inevitable, at some point in time you're going to have to hire a contractor to carry out a project or simply to complete a portion of it. Remember, the best use of your time and talent is to manage and operate an agricultural enterprise. Therefore, unless it is a small project or fix you're better off hiring the work done. This is especially true if it requires specialized tools, equipment, or expertise – you don't want to be messing around with that 3-phase, 480 volt line.

Granted, hiring a contractor can be a source of stress and anxiety. It's unfortunate that a few unscrupulous individuals have forever tainted the public's general perception of contractors. However, it is possible to have a mutually beneficial and honest relationship with a contractor.

Just as in real estate where the three most important things are location, location, location, the three most important things in contracting are communication, communication, communication. Here, what you *don't* say is just as important, if not more so, as what you *do* say.

1. Never tell a contractor you aren't in a hurry. This will almost assuredly move your project to the bottom of the list. A better alternative would be to communicate a timeline, an expectation of project milestones, and a completion date. This gives the contactor some flexibility in scheduling and gives you some assurance of timely completion. Setting milestones – dates by which certain phases of the project need to be completed – keeps the project moving forward. Without this measure some contractors may start a project just to keep you happy/quiet and then disappear for 3-4 weeks. That said, you might need to exercise a little grace. For example, if your project is inside and this is the first sunny and dry week in two months they may be elsewhere trying to complete other projects that have been stalled because of the inclement weather.

Additionally, you could stipulate a time penalty -- \$X lost per day beyond the date a project is to be completed – as well as "drop dead" dates for initiating and/or completing the project. In this case, if the project was not started or completed by certain dates the contract becomes null and void and you are free to secure another contractor to do the work. Again, you may need to cut them a little slack if the weather has been a factor. Make sure none of these dates are on or over a holiday weekend.

- 2. Never tell a contractor they are the sole bidder. When I worked for the Soil and Water District and NRCS, it was policy to require at least three bids. This gives you a true appreciation for the market. It also encourages contractors to assemble their bids with a very sharp pencil. Now some of you may have built quite a relationship with a contractor over the years. This is not a bad thing. You call, they come over, get it done PDQ, and for a fair price. However, giving a go-getting newcomer a chance can be a good thing potentially gives you a good back-up when your primary is not available and it keeps your primary's bids on the up-and-up.
- **3. Never agree to a "Gentleman's Agreement".** Unfortunately, gone are the days when things could be done on a handshake. This is not only a function of trust but of complexity, as well. There was a time when things were simpler, choices were fewer, timelines shorter, and everyone knew what everybody was talking about. Today, however, there are a myriad of choices and even minor misunderstandings can have major implications. Moreover, who's going to remember specifically what was said or understood three or four months later when timelines get crunched, skies threaten to snow, and tempers begin to flare?

Instead, write out very detailed contracts with specific expectations (completion dates, milestones, etc.) and a list of expenses and payment schedules (more on this next month).

Next month we'll look at more things you don't say.



Effective communication will help ensure you get the project you want, when you want it, and how you want it. Photo courtesy of Timothy Terry.



Cornell CALS PRO-DAIRY Modern On-Farm Preparedness

On-Farm and Live Webinars



Webinars can be accessed at the local site or signed in anywhere from a mobile device or computer.

Six consecutive Thursday afternoons: January 23 - February 27. Attend all sessions or individual sessions.

Registration is \$10 per session

Presenting organizations:

Cornell Cooperative Extension, NY State Cattle Health Assurance Program, American Dairy Association, and New York Center for Agricultural Medicine and Health.

Information on locations and registration:

NNY - Registration or questions: Tatum Langworthy tlm92@cornell.edu | 315-788-8450 | reg.cce.cornell.edu/modernonfarmpreparedness_10512

NWNY - Registration or questions: Brandie Waite | 585-343-3040 ext.138 | bls238@cornell.edu | nwnyteam.cce.cornell.edu/events.php

SCNY - Questions: Betsy Hicks | bjh246@cornell.edu | 607-391-2673



DATES AND LOCATIONS

Jan 23 - Preparedness for Urgent Situations. Be prepared for a fire, weather emergency or barn damage.

Old Acres Farm, 7863 Route 39, Perry, 1 - 4 pm.

Jan 30 - F.A.R.M 4.0 Update. The F.A.R.M program is evolving as farmers implement the program. Learn about how farmers have used and gained benefits and how you can use the FARM program.

Webinar, CCE Orleans County, Albion: 1 - 2 pm.

Feb 6 - Activist Preparedness. This session will address good hiring practices, available resources for support, and a plan of who to contact if something happens on your farm. Learn how to talk about activist videos and how to prepare your employees for these events.

Webinar, CCE Genesee County, Batavia 1 - 2 pm.

Feb 13 - Social Media Preparedness. How to respond to negative comments on farm pages. Resources and people you can call for effective responses.

Lamb Farms, 6880 Albion Rd. Oakfield, 1 - 4 pm.

Feb 20 – Disease Outbreaks and Biosecurity. Dr. Melanie Hemenway, State Veterinarian, will provide concrete steps to deal with disease outbreaks and make biosecurity recommendations for prevention.

Webinar, CCE Wyoming County, Warsaw: 1 - 2 pm.

Feb 27 - On Farm Safety-Prevention, Prevention, Prevention. Yet accidents still happen. This session will focus on prevention and also address accident response.

BreezyHill Dairy, 2705 N Sheldon Rd. Strykersville, 1 - 4 pm.

prodairy.cals.cornell.edu

A new Phosphorus Index for NY: Part 1: What farmers need to know. by Karl Czymmek and Quirine Ketterings

This article originally appeared in the December 2019 e-Leader Newsletter published by ProDairy.

In the past 20 years, more than 600 dairy and livestock farms in NY have come under regulations and invested millions in best management practices. Annual fertilizer phosphorus purchases have been cut substantially and many dairies have made large reductions in phosphorus (P) fed to cows which reduces P in manure. Many other farms have made environmental improvements through state programs and their own initiative as well. Combined, these changes have resulted in millions of pounds less P applied to land annually and as a result, soil test P across NY is no longer increasing. Yet, in spite of the improvements, we have seen an increase in occurrences of Harmful Algal Blooms (HABs) in NY, a trend that is also being experienced across the US and around the world. No one is certain exactly what is going on. It is likely there are multiple causes. What we do know is that in the 60's, 70's and 80's, phosphorus tended to accumulate in the environment resulting in "legacy phosphorus" in fields, stream banks and beds, and in lakes. We also know that annual rainfall is increasing, and storms have been getting more intense. More rain means more runoff and more runoff means more nutrient loss. It appears that some aspects of water quality have gotten worse, though many farmers have made significant improvements over the past decades. This tells us we have more work to do.

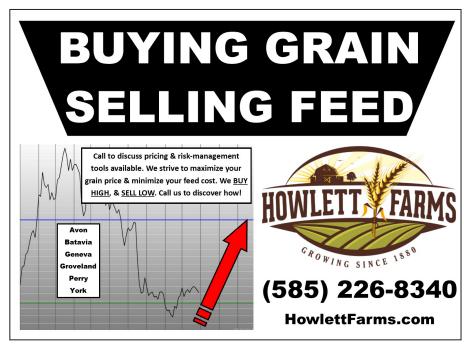
The NY P Index (NY-PI) sits at the heart of this issue and is designed to help farmers implement practices related to manure and fertilizer phosphorus management that reduce the risk of phosphorus loss from fields and farms.

The first NY-PI was released in 2001 and like many things 18 years old, was in need of change. The updated version (NY-PI 2.0) incorporates new science and does a better job of addressing phosphorus loss risk while still giving farm managers options for recycling manure nutrients on crop fields. The process of updating the NY-PI was a broad partnership among faculty and staff in the Nutrient Management Spear Program (NMSP), PRO-DAIRY, and the Department of Biological and

Environmental Engineering at Cornell University, along with NY Departments of Agriculture (NYSDAM) and Environmental Conservation (NYSDEC), and the Natural Resources Conservation Service (NRCS). Feedback from certified nutrient management planners and farmers was sought multiple times along the way.

The team tested the new NY-PI with field information from more than 300 NY farms across 40 counties, representing more than 33,000 fields. Some important facts: 90 percent of the fields had a Cornell Morgan soil test P (STP) below 40 pounds per acre, where additional P is recommended for crop growth. Fields with extremely high STP levels, represented by only a small fraction of the fields in the database, are a result of many years, in many cases, decades ago, where phosphorus loads to fields exceeded crop phosphorus removal. In a separate assessment of 18 dairy farms for which whole farm data were available, analysis showed that almost all fields on these farms were able to receive manure, though many fields needed some combination of risk reduction practices. In Part 2, we will explore how the P index works.

(Continued on page 16)



A new Phosphorus Index for NY: Part 2: How the P index works. by Karl Czymmek and Quirine Ketterings

This article originally appeared in the January 2020 e-Leader Newsletter published by ProDairy.

In <u>December e-Leader</u>, we introduced the new NY Phosphorus Index (NY-PI) and provided some background. Farms that are regulated as concentrated animal feeding operations (CAFOs) will need to start using the new NY-PI 2.0 when the CAFO Permit is updated (current permits are due to be renewed in 2022). Farms that are in state or federal cost share programs will need to use the tool based on NRCS determination. Agency discussions are in progress to make sure the roll-out is as smooth as possible.

Here is how it works: a farm field is rated based on an assessment of its runoff risk-related transport features, including those observed directly during a field visit and others from normal soil survey information (most of these factors are the same as those used in the old NY-PI). For example, being close to a stream or watercourse, poorly drained soil, or higher levels of soil erosion are some of the risk factors that can lead to a high transport score. For fields with a high transport score, manure and phosphorus fertilizer application practices can be selected to reduce the risk of phosphorus loss. These best/beneficial field management practices (BMPs) cover a combination of changes in application timing (close to planting) and method (placing phosphorus below the soil surface), and more vegetation on the soil surface when phosphorus is applied. Thus, implementation of BMPs will reduce the final NY-PI score. Field practices include manure and fertilizer spreading setbacks, ground cover (sod or cover crops), and placing manure below the soil surface (injection or incorporation). Combined with information about soil test phosphorus levels, the final NY-PI score results in a management implication: if risk is classified as low or medium, manure may be used at Nbased rates; if classified as high, manure rate is limited to expected phosphorus uptake by the crop, and if very high, in most cases, no manure or phosphorus fertilizer may be applied. This transport × BMP approach is shown in Figure 1.

Coefficients were set for the new NY-PI using a database of more than 33,000 New York farm fields supplied by certified nutrient management planners and a second dataset that included data for PI assessment and whole

farm nutrient mass balance assessments for 18 New York AFO and CAFO farms. While some farm fields had to have manure diverted, in almost all situations, the NY-PI 2.0 provided a pathway for farms with an adequate land base to both reduce risk and apply the manure generated from their herd.

Stay tuned for documentation and software tools to help with implementation of the new NY-PI.

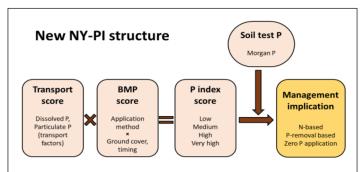


Figure 1: the new NY-PI has a transport x BMP approach.



Proteases Help Increase Starch Digestibility in New Crop Corn Silage by Margaret Quaassdorff

Increasing starch digestibility is the main objective when you allow your corn silage crop to remain covered and fermenting for 3 to 4 months or more. Starch digestibility improves over time regardless of which inoculant was used during initial ensiling, though inoculant is important to help direct proper fermentation and preservation of silage. The fact that starch digestibility improves with increased ensiling has to do with the breakdown of zein proteins that make up the prolamin-starch matrix and encase the starch granules within the corn kernel. As these proteins naturally break down in the fermentation process, the starch granules become more accessible to rumen bacteria when fed to the cow.

To help improve fermentation, some enzymes act on fiber. Neutral detergent fiber (NDF) digestibility changes very little after the initial stages of ensiling, unless certain enzymes are used to break down easily digested fiber. These enzymes release easily digested amino acids and sugars for the lactic acid producing bacteria. This may actually have a negative result on NDF digestibility of the forage when it enters the cow, as this fiber is also the most easily digested by ruminants.

What about other enzymes? Many dairies do not have the inventory (time) or storage capacity to hold feed to meet the lengthy guidelines, and have to open and feed out shortly after harvest. How might we shorten the time it takes to reach desired starch digestibility in our bunkers, bags, and silos? Dairy and forage scientists have been exploring the use of exogenous proteases (enzymes that can break down the prolamin-starch matrix). In a recent study (Der Bedrosian and Kung, 2019) published in the Journal of Dairy Science, adding exogenous proteases at a level of 200 mg/kg on the day of ensiling increased in vitro starch digestibility (IVSD) of corn silage to 80.7% after 45 days compared to 74.5% in corn silage that was not treated with the protease. Doses of 1,000 and 2,000 mg/kg of proteases did not

further increase starch digestibility, and resulted in a negative effect of increased yeasts and a higher concentration of ethanol. Yeasts in silages are associated with substantial dry matter losses and the initiation of spoilage, and cause further harm once the bunk is opened and exposed to oxygen. The 200 mg/kg dose showed increased starch digestibility without the other negative effects on other characteristics of corn silage. This interesting research shows promise in helping our new corn crop silage reach its full nutritional value, and improving the efficiency of our dairy cow diets.

For more details on this research please refer to the Journal of Dairy Science article: Der Bedrosian and Kung. The effect of various doses of an exogenous acid protease on the fermentation and nutritive value of corn silage. J. Dairy Sci. 2019; 102:10925-10933.

DOI: https://doi.org/10.3168/jds.2019-16436



R.J. Anderson/Cornell Cooperative Extension



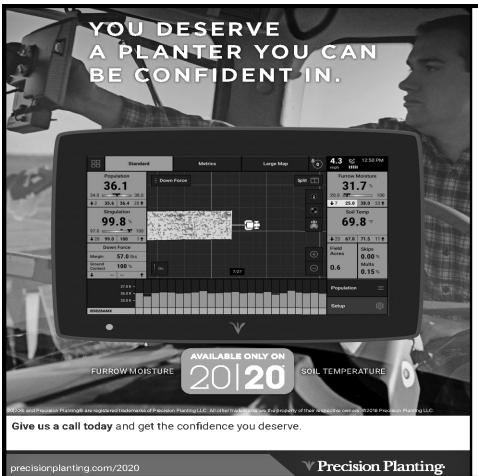
Congratulations to the 2019 NY Corn & Soybean Growers Association Yield Contest Winners!

Our NY Corn Champion, Adam Kirby from Orleans County with a winning yield of 277.44 bu/a. Our NY Soybean Champion, Root Brothers, also from Orleans County, had a winning yield of 80.56 bu/a.

They win all expense paid trips to the 2020 Commodity Classic in San Antonio, TX in February. The annual corn and soybean yield contests are sponsored by the New York Corn & Soybean Growers Association.

The winners were announced at the 2020 New York Corn & Soybean Winter Expo on January 23, 2020 in Liverpool, NY.

2019 New York Corn & Soybean Contest winners.
From left to right: NY Corn Champion, Adam Kirby; Mike Stanyard,
CCE Field Crops and NY Soybean Champion, Robin Root of Root
Brothers. Photo courtesy of Mike Stanyard.





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2007 MACK GRANITE CV713; Mack 335 HP; Allison Auto. Trans.; Double Frame; 21° Alum. Box; 18K F/A; 46K Relas On Camelback Susp.; Steerable Ltff Abde; 8,995 Hours; 174,712 Miles; St. wal 156 Raz ann



2005 PETERBILT 378; 475 HP CAT C15; Jake Brake; 10-Spd. Manual; 200° WB; 12,000# FrA; 46,000# Locking Rears on Chalmers Susp.; Polisted Alum, Wheels; Dual Exhaust & Air Clearers; 738,651 Miles; Six. #5821 - \$40,000



2006 MACK GU813, Allson Auto, Trans; Double Frame Tri-Avie Dump Wydking-Chies Tub Style Box wyBeit Unloader; 20K FA; 46K FA; Jap, Air Rude Suss.; 20K Non-Severabe Lift Avie, Will Separate Body from Classis. 21 Fo' Ol Frame Behind The Cab, 206°C-7. Muffler Takes Up 12° O'l These Measurements; 151,516 Miss. 58. #6174-3.554 9010 s, \$1, #6174 - \$54,900





2006 KENWORTH T800; Plated Winch Truck w/Braden 30-Ton Winch; 550 HP CAT C15; 18-Spd. Manual; 16K F/A; 46K Full Locking Rears; 284* Wilß; 18°6* Deck, Air Ride Susp., Flip Over Shift Wheel; Will Separate Deck 4 Winch from Crassis; 21° Farne; 206* CT; 9.30 Ratio; 295,224 Miles; Stk. #6148 - \$45,000 CASE.



2004 PETERBILT 320; CAT 330 HP; Allison Auto., Retuse Truck w/1 80° WB; 18K F/A, 44K Rears; Can Separate Compactor from Chassis; 17 Frame Behind Cob.; 148° CT; 14,873 Engine Hours; 69,512 Miles; Sk. #6209 - \$37,900



2004 INTERNATIONAL 5600; 385 HP Currnins ISM; 8LL Trans; Double Frame Dump Truck w/18K F/A; 52K Full Locking Rears; Hendrickson Susp.; 184* WB; Cran Separate Body from Chassis; 14*2* Frame Behind Cab; 121* CT; 117,870 Miles; 5k. #6225 - 432,900



| | |QTY, 2| 2004 KEHWORTH T800; 380 HP CAT G12 |Gouble Frame; Abec AG18-708 Grane; (5) Ouriggers; Ghd , Etc. 4.33 Aatio; 310" WB; 18K F/A; 46K A Chassis; 25' Frame 8ethnd Cab; 232' CT; 8,995 Hours; 133,450 MMe 10,482 Hours Six, #6227 - Price With Grane: \$62,900 + SEG 0H0 UH 2003 w,430 HP CAT CT2; 68K GW//; Same Crane Specs - \$57,900



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CAT. and **903 KENWORTH T800**; 475 HP CAT C15 6NZTurbo; LL Manual Trans; Clean Daycab w/12,800# Front Xle; 48K Rears On KW 8-Bag Air Ride; 4.11 Ratio; 86" WB; Wetline; 447,898 Miles; lk. #5925 - **\$49,900**



2010 PETERBILT 365, 350 HP Cummins ISM Engine; Allison Auto; Long, Double Frame Cab & Chassis w/300" WB; 227" CT; 31' Frame Behind Cab; 18,000# FA; 60,000# R/A On Hendrickson Susp.; 87,267 Miles; Stk. #5907 - \$59,900



1999 MACK RD688S DUMP TRUCK; 400 HP Mack E7; Engine Brake; 8LL Trans; Rubber Block Susp.; Tri-Ade; 19°Seel Body; 20,000# F/R; 46,000# R/R; 22.5 Tires; 248° WB; Space Wheels; EXPORT PRICED!!!; 777,148 Miles; Sk: #5902 - \$19,500



2005 PETERBILT 357; 370 HP Cummins ISM; 8LL Trans. Quad Axle Cab & Chassis w/Double Frame; 18K F/A 44K Full Locking Rears; (2) 11K Steerable Lift Axles Ari Trac Susp; 22° Frame Behind Cab; 212° CT 302,500 Miles; Stk. #5831 -\$41,500 KOMA



2002 KENWORTH T800; 475 HP CAT C15 602; 10-Sqd. Manual; Double Frame, Baycab w/20,000# F/8; 46,000# Locking Pears; REWMY Air Rice Susp.; 529 80; 204" WB; 16' 01 Frame; 186,151 Miles; Stk. #6097 - **\$39,50**0



2007 MACK CT713,Mack 370 HP; 91L Trans.; Double Frame Plow(Sander 11*One Way Plow & Wing; Lansu Sander CTR Drop Spirmer; 20KF, 48K full Locking Rears; Hurmaox Susp.; 4.30 Rato; 258*WB; 260,163 Miles; Sk. #6173 - \$31,000



2007 MACK CT713; Mack 427 HP; Allison Auto.; Double Farne Flow/Sander Truck w/Stratos B70-42 Spread w/Cherrical Sprayer; 20 K FA; 20 K LH; 46K full Locking Pears On Haulmass Susp.; Schrindt Controls; 240° MB; 19° Seel Box w/Targ; 335,602 Miles; Sk. #6172 - \$43,900



2007 KENTVORTH T800; CAT 380 HP; 13-Spd.; Vacuum Tru w/Almac Machine Works 3,440 Gal. Fark w/Dump & Pear Hatol 270* WB; Ali Ride Susp.; 16K FA); 46K full Locking Rear 4,10 Rato; 80,985 Miles; Stk. #6144 - \$69,900



IGHTLINER. 002 MACK CL713; 460 HP Mack E7; 18-Spd.; Double Frame ab & Chassis; 20k Frd, 46K Rears; 292" WB; 24°6" Frame ehrind Cab; 20°6" CT; PTO; Good Rubber; Mack Ari Ride usp.; 309; 234 Miles; 17,680 Hours; Stk. #5909 - \$32,500 FREI



2006 WESTERN STAR 4900SA; Double Framed Crare Truck; CAT 410 HP; Allison Juno, Trans; 20K Fry, 46K Full Locking Rears; 16K Fee Mourted LH Ade; 247 Seel Deck; Chairmers Susp., 72* Spread; MT16000 Dywal/Block Cane; Can Separate Crane & Deck From Chassis; 30f Frame Belrind Cab; 202° CT; 264* WB; 274,074 Miles; Skr. #5948 - \$28,900



2005 MACK CX612; 350 HP Mack AC330; 10-Spd.; Running Single Ade Tractor w/12K F/A; 20K Rear; Ar 149" WB; 764,211 Miles; Sk. #5885 - \$11,500 MANY, 07 HERS AVAILABLE



2005 PETERBILT 357; CAT 305 HP; Allison Auto, Clean Cab & Chassis; 20K F/A; 46K Rears on Haulmaax Susp. 17" Frame Behind Cab; 140" CT; 216" WB; New Drivs Tires; 129,217 Miles; Stx. #4894 \$59,000





2005 FREIGHTLINER FLD; Detroit 12.71. 455 HP; Allison Auo; Clean Low Mile Cab & Chassis w/2,000e From Ade; Auto; Clean Cab & Chassis w/18 K R4-GK Full Lodeing Rears; [2] 11,000e Steerable Ut-Aces; 44,000e Full Lodeing Rears; [2] 11,000e Full Lodeing Rears; [2] 11,000e





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February 2020

Soybean & Small Grains Congress - Batavia, NY, 8:30am - 3:30pm. Quality Inn & Suites, 8250 Park Road, Batavia, NY. Visit: https://nwnyteam.cce.cornell.edu/events.php



DPCOMING EVENTS

- Soybean & Small Grains Congress Waterloo, NY, 8:30am 3:30pm. Quality Inn, 2468 NYS Route 414, Waterloo, NY . Visit: https://nwnyteam.cce.cornell.edu/events.php
- **Modern On-Farm Preparedness Series Activist Preparedness,** 1:00pm to 2:00pm. CCE of Genesee, Batavia, NY. Will cover good hiring practices, available resources for support, and more. See page 14 for details.
- **11** <u>New York Certified Organic (NYCO) Meeting,</u> 10:00am. Martin Auction Barn, 1036 NY Route 318, Waterloo, NY. All interested in organic production are welcome. Free event, no registration required, bring a dish to pass or donation for potluck lunch.
- **13** <u>Modern On-Farm Preparedness Series Social Media,</u> 1:00pm to 4:00pm. Lamb Farms, Oakfield, NY. How to respond to negative comments on farm pages and resources for effective responses. See page 14 for details.
- **Modern On-Farm Preparedness Series Disease Outbreaks and Biosecurity-**, 1:00pm to 2:00pm. CCE Wyoming County, Warsaw, NY. Dr. Melanie Hemenway, State Veterinarian, will provide concrete steps to deal with disease outbreaks and make biosecurity recommendations for prevention. See page 14 for details.
- **27** <u>Modern On-Farm Preparedness Series Prevention, Prevention, Prevention, 1:00pm to 4:00pm. Breezyhill Dairy, Strykersville, NY. Yet accidents still happen. This session will focus on prevention and also address accident response. See page 14 for details.</u>

March 2020

- 10 <u>New York Certified Organic (NYCO) Meeting</u>, 10:00am. Martin Auction Barn, 1036 NY Route 318, Waterloo, NY. All interested in organic production are welcome. Free event, no registration required, bring a dish to pass or donation for potluck lunch.
- 11-12 Northeast Dairy Management Conference, Holiday Inn Liverpool, NY. Presented by Cornell CALS PRO-DAIRY and Northeast Diary Producers Association. The conference is designed for producers and agriservice professionals to interact and relate to the latest thinking and issues in the dairy industry. For more information visit: https://prodairy.cals.cornell.edu/conferences/ne-dairy/ or contact Heather Darrow, Conference Coordinator at: 607-255-4478 or dmconf@cornell.edu