Cornell Cooperative Extension

Northwest NY Dairy, Livestock and Field Crops Program

Ag Focus

Reflecting on a 41 Year Journey

By: Jerry Bertoldo

On September 15 I will be officially retiring from my dairy specialist position with Cornell Cooperative Extension and the NWNY Team. I thought for my last bit of writing in Ag Focus that I would reminisce about the last 5 decades or so of my life experiences leading to this momentous occasion.

"Jerry' s alter ego going on duty on the Adirondack Scenic Railroad ready for a 1950's experience"

Photo source: Don Chaudruc

As a suburban kid familiar with horses and ignorant of things bovine, I headed off to Ithaca and the College of Agriculture at Cornell in August, 1970 as an animal science major and pre-vet student. It was both unnerving and fascinating to enter into that huge academic mecca with a Long Island potato farmer for a roommate, classes spread out all over campus and no parental guidance! Academic achievement is only one goal of a college education. Social development and accountability are two minors that everyone should sign up for and pass. Coincidentally, I found a "second family" in Owego, NY and an education in rural sociology, countrified speech patterns and values, knowledge that was invaluable in my early life as a bovine practitioner. This learnin' did not cost me anything, but required attention and practice nonetheless.

Cornell was like home when I graduated from the Veterinary College in 1977. Seems that students often regret leaving Ithaca especially after spending that many semesters and a few working summers there. Vet school was one of those experiences that you were proud of having survived, but there were some of us who would say we would never do it again! In a more rough and tumble day with some legendary, animated faculty and smaller, close knit classes, lingering memories of the good times have outshadowed the bad.

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Postmaster: Send Address Changes: NWNY Team, Attn: Cathy Wallace, 420 East Main St., Batavia, NY 14020

Direct all inquiries & correspondence on advertising space/rates to Cathy Wallace at 585-343-3040 x138 or cfw6@cornell.edu

Jerry Bertoldo
Dairy Management
Genesee County
585.343.3040 x 133 (office)
585.281.6816 (cell)
grb23@cornell.edu

Libby Eiholzer
Bilingual Dairy Management
Ontario County
607.793.4847 (cell)
585.394.0377 (fax)
geg24@cornell.edu

Nancy Glazier
Small Farms, Livestock
Yates County
315.536.5123 (office)
585.315.7746 (cell)
nig3@cornell.edu

John Hanchar
Farm Business
Livingston County
585.991.5438 (office)
585.233.9249 (cell)
jjh6@cornell.edu

Jodi Letham
Field Crops & Soils
Livingston County
585.991.5437 (office)
585.208.8209 (cell)
jll347@cornell.edu

Ali Nafchi
Precision Ag
Genesee County
585.313.6197 (cell)
amn93@cornell.edu

Joan Sinclair Petzen
Farm Business Management
Wyoming County
585.786.2251 (office)
716.378.5267 (cell)
jsp10@cornell.edu

Mike Stanyard
Field Crops & IPM
Wayne County
315.331.8415 x 123 (office)
585.764.8452 (cell)
mjs88@cornell.edu

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Cathy Wallace
Administrative Assistant
Genesee County
585.343.3040 x138 (office)
cfw6@cornell.edu

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During my Cornell years, the Owego connection blossomed my interest in railroads. A country depot restoration I helped with morphed into a small transportation museum with a ¼ mile train ride by 1978 and finally into a tourist operation business that lasted through 2007. I have always liked multi-tasking!

My vet practice years started with a small mixed animal hospital in Dutchess County – beautiful countryside and lots of well-heeled clients. Never very interested in any small animal work, I moved to Attica two years later in 1979 into a 5 person, all large animal practice that became cattle only by 1992. In 1999 I left the partnership due to a worsening lower back condition. I then began a five year tenure with Agway Feed & Nutrition as part of the dairy technical services group with responsibilities to the sales force in New York and Pennsylvania. This was the era of Agway owned heifer raising operations, four of them in total. I performed all of the veterinary work at the one located in Elba. In addition, as a member of the Agway heifer advisory committee I regularly visited the other three operations. This all elevated my pre-existing interest in calves and heifers. In 2004 the Cargill purchase of Agway meant the elimination of my position. In May of that year I hired on with Extension.

Needless to say the changes in the dairy industry since my college days have been remarkable. I am continually amazed at the degree of change in the development and management of medications, antibiotics, housing, ventilation, hoof care, calf raising, nutrition, forage production, milking systems, breeding programs and much more. All of these areas have greatly improved the lives of cattle.

As all good stories about bygone days go…..…once upon a time medicines were botanically based or made from certain elemental compounds such as iodine. By the time I was in vet school, pressure was heavily against this kind of medicine in favor of man-made products. Antibiotics had been used in food animals for some 25 years. Pain killers, anti-inflammatories, antihistamines, purified vitamins and steroids had made inroads into decades old plant and animal extract medicines. The growing FDA concern about the safety and efficacy of these traditional products led to regulations requiring extensive testing. It made little sense for companies to spend millions to go through a process leading to FDA approval when profits were far less than the research cost. With continued pressure on the use of antibiotics in food animals, it will be interesting to see if some of the old medicines with antimicrobial properties make a comeback.

One of the revolutionary changes during my career has been the introduction of prostaglandins. Before "PG" shots became available in the early 80's, prolonged metritis and pyometra (pus filled uterus) were common problems. We would flush out a bad uterus. Various types of intrauterine pills and infusions were used to clean up these infections. We thought we did a great job with those treatments. Infertility as a result of these infections was a serious issue only realized after PG use became routine and improved transition cow management greatly reduced the risks. Timed AI programs have significantly raised the repro performance on many dairies. My concern is the public perception of the associated hormone use in the future.

Cow comfort was an unheard of phrase "back in the day." Build it and they will use it was the rationale. Cows that beat themselves up in stanchions, tie stalls or early free stalls were honestly thought to be stupid, needed time to acclimate. Maybe the stall bed just needed more grit for traction? We, including vets, did not stop to figure out what the cow needed. Ventilation was often no more than a big fan at the end of the walkway to keep you cool and the flies down when you milked. Hoof care was minimal with only the obvious long toed or lame cow getting attention. 40 years ago pain control, routine forage analysis, feeding calves for natural growth rates and culturing before treating for mastitis were rarely used. The NYSCHAP program, ultrasound, genomics and computers were not part of the dairy world tool box. What will people think in 2058 about today's state of the industry?

So, before I set off into the next life of home projects, bucket list vacations and working on excursion trains, I must thank all of the individuals that I served as an attending veterinarian, feed company consultant and Extension agent. Without your trust, friendship and sharing of knowledge my work would have been much less valued or rewarding. Well, it's time to go. I hear the all aboard for my connecting train to the next adventure. Wish me luck!

Communicating with Employees about Wages & Raises

By: Libby Eiholzer

Giving employees direction about their job performance & pay is just as important as giving direction when covering the bunk!

Photo source: Libby Eiholzer

All too often during farm visits, I hear employees asking questions that they should already know the answer to. "I've been working here for a year, when do I get a raise?" "Why does this person get paid more than me?" "If I learn to do *(insert job title)* will I get a raise?" Last but not least (and probably the worst, in my opinion) is the ultimatum: "If I don't get a raise then I'm going to work somewhere else!"

Why are these questions and demands rampant on dairy farms? The simple answer is that we are not providing employees with adequate information about their pay and benefits at hiring and throughout their employment.

When hiring a new employee, it's important to take the time to explain their compensation package clearly. The bare minimum (as required by law) is the NYS Department of Labor's Form LS309, the "Work Agreement and Pay Notice." To find the most recent version in English and Spanish, visit https://labor.ny.gov/formsdocs/wp/ellsformsandpublications.shtm#Farm_Labor. This form lists the starting hourly wage, average hours per day and week, and any benefits that the employee will receive. You must fill out the form in the employee's native language, give them a copy, and keep one on file for farm records.

However, I don't think that this is sufficient. You also need to explain *when* you give raises. Some farms provide raises after a specified period (like staying on the job three months) or once or twice a year (June and December). The first is a way to encourage new employees to take ownership of their new role, and the latter can be very helpful in preventing employees from asking for raises every other week.

It's just as important that you explain to your employees *why* you give raises and provide solid examples. One common reason for a raise is the length of employment; an employee who has been milking your cows has a lot more experience than a new hire. Level of responsibility is another obvious reason to give a raise. Employees who require frequent supervision can be paid less than those who are self-directed, who in turn can be paid less than employees who supervise others.

Simply telling an employee that he needs to "do a good job" to get a raise is too vague. You might explain that you need him to arrive on time, consistently follow the routine, identify sick cows or keep his work area neat. Last but not least is a positive attitude. We can all recognize how valuable it is to have people on our team who are willing to help others, don't complain about a little extra work, and genuinely care about the animals and the business.

Another valuable piece of information to give employees is which manager they can talk to about raises. Receiving regular performance feedback from the manager who determines when they get raises will help give them specific goals to work towards accomplishing.

Instead of giving everyone a raise "because we have to" in December when the minimum wage increases again, it's preferable to raise them to the new level gradually, and for specific reasons. One argument I've heard from managers is that just because we offer employees ways to get a raise doesn't mean they will follow through. That's undoubtedly true, but chances are if you've kept an employee around, there's probably a reason. Perhaps he's not the most motivated employee, but he might be the most reliable.

The bottom line is that most employers can do a better job of communicating with their employees about their wages and when and how they can earn a raise. Take some time to think about why you give employees raises, put it into words, and share it with them. Employees may not always agree with your decisions, but they will appreciate it when you are transparent in your decision-making process.

Lean Times? LEAN into It

By: Timothy X. Terry
Farm Strategic Planning Specialist, Harvest NY

We are entering / have entered the fourth year of low milk prices (thank you, Captain Obvious). By this time I'm sure you've done everything you can to trim the fat in your operation. Feed and labor tend to be the two biggest expenses on any livestock operation so you're probably managing the bunker (or silos, ag bags, etc.) and the feed bunk more closely. It's likely, too, that you've not refilled some vacant positions, preferring to spread the workload among the remaining staff and yourself.

This is a good start especially when small changes can yield big improvements. However, there is always more (or less) that can be done to streamline the operation and improve the bottom line. Through the use of LEAN management strategies these needed changes can be detected and addressed.

LEAN Six Sigma

LEAN management is often paired with Six Sigma as a complementary management philosophy. They both have their origins in the manufacturing sector – Toyota and Motorola, respectively. While LEAN focuses on reducing waste and increasing process flow and speed, Six Sigma seeks to decrease defects and increase overall quality, which are very important when you're building radios for the military. The name *Six Sigma* is actually derived from statistical terminology. In statistics, the lower case Greek letter sigma (σ) signifies one standard deviation from the mean (average) of a particular distribution. So six sigma (6σ) is six standard deviations from the mean, or, for manufacturing, it signifies that 99.99966% of all production will meet job specifications. In other words, only 3.4 out of every million products will have some kind of defect, but I digress…

LEAN, on the other hand, seeks to reduce waste and effort which is often manifested as lost business opportunities and revenues. LEAN tends to be quicker and less expensive to implement, yields faster results, and can build long-term behavioral and system changes. It is the strategy of choice when your primary concerns are waste, process speed, and/or inventory bloat. Granted, inventory bloat is what has brought the dairy industry to its present state, but this is a macroeconomic problem that requires a macroeconomic solution which is far above my level of expertise and sphere of influence.

Photo source: Tim Terry

There is, however, a *micro*economic inventory bloat that you may be able to do something about. Any discussion of facilities will eventually get around to housing of youngstock. "I have so many heifers that I don't know where I'm going to put them, and there's little, if any, market for them" is a statement I'm hearing with increasing frequency. I suppose if you're going to have a problem it's a good one to have, and it's also a real testament to your youngstock program. Unfortunately, it may not be in your best interest to raise more heifers than you need.

One of the most important questions you have to ask yourself in any LEAN strategy is: Is what we are doing creating value? If you have more animals than you know what to do with; animals that have to be fed, sheltered, and cared for, but have limited market value; you'd be hard pressed to answer "yes" to that question.

So how many are enough?

We can answer this question with a few key metrics from your DHI records or DairyComp and some simple math.

Heifers needed annually $= HS \times \frac{AFC}{24} \times CR \times (1 + NCR)$

Conversely,

Heifers produced annually $= HS \times \frac{12}{CI} \times SR \times (1 - CM) \times \frac{24}{AFC}$

Where:

HS= herd size, milking & dry

AFC= age at First Calving

CR= cull rate

NCR= Non-completion rate, heifers entering the youngstock program but do not enter the dairy herd

CI= calving interval

SR= calf sex ratio, % female calves

CM= calf mortality rate

How these numbers compare will tell if you have too many, too few, or are just right. (Remember, accuracy of the input numbers affects the validity of the output numbers. In other words, garbage in = garbage out.)

So if we have too many, what are our options? How do we LEAN out the system? Your philosophy should be: Milk the best, sell the rest. You know who your best cows are so their progeny should have the greatest genetic potential. Save as many of these, across all age groups, as required to meet your annual needs plus a few extra just in case. Liquidate the remainder in whatever manner is most advantageous or acceptable to you, including finishing the older animals out on some unused pasture. As difficult as this may be, it will help to generate some cash flow and decrease expenses. (If you are trying to expand to fill a new building this may not be an option.)

Now, if we don't also change the breeding strategy we'll be right back in this same spot less than two years from now. That said, here is a LEAN breeding strategy to consider:

1. Save the expensive sexed semen for your top cows and first-calf heifers. Run these numbers through the second equation to estimate the number of heifer calves from this cohort. (SR = 80%? 85%?)

2. Balance out the rest of your annual heifer requirements with the middle group using standard semen. (SR = 50%)

3. The remainder of the herd, except those coded "DNB," may be bred to beef bulls. Nancy Glazier provided a very practical guide for dairy crossbreeding in the June 2018 issue of *Ag Focus*.

This third group then becomes an additional revenue stream that has value: in fact, a $50 - $100 premium value over linebred dairy calves at market time. Optionally, you could background these calves on pasture and feed refusals (manger sweepings), or even take them all the way to finishing. However, following a LEAN strategy, you will still need to ask yourself, "Am I creating value -- enough value to justify this additional labor, facility wear and tear, etc., etc.?"

The Economics of Stockpiled Pastures

By: Nancy Glazier

The time is here for stockpiling pastures. As of today (July 10), conditions in the region are dry. Will we have some significant rainfall in the next few weeks to get pastures growing? I will make the assumption we will.

I've written about the concept in the past, but I'd like to look at it from the economics perspective. Legend has been perpetuated stockpiling is cheaper. There is no doubt with feed being the biggest expense, grazing vs feeding hay can save money. There are many variables to consider, though, namely availability of additional acreage and farm owner flexibility. For example, a farm with 15 beef cow calf pairs will need approximately 30 acres for 185-day grazing season. With this scenario, if only 30 acres of pasture are available and hay is purchased, there is no option for stockpiling. If, on the other hand, the farm has access to additional pasture or fenced (or ability to fence temporarily) hay ground, then stockpiling may work. This could be land owned with a cutting of hay taken early.

Some estimations and assumptions are required. On the basis of this small herd example, assuming the calves are weaned and sold, an additional 11.7 tons of feed would be needed for a month for the cows. The number is based on 1300 lb. cow with 4% bodyweight in feed needed. This is a bit high, but a good conservative number and a realistic expectation of grazing stockpiled forage after the first killing frost. There will be loss from trampling, waste and quality decline.

Hay value would be estimated at $100/ton for a total of $1170. This could be purchased or homegrown. If pasture is stockpiled this would require an estimated 16 acres. Rental rates are variable, but I will use $25/acre, since the land would only be needed for three months of the growing season. This would be $400. Water needs to be available, too.

Recommendations for stockpiling call for 60 lbs. of actual N fertilizer in early August. Urea for the pastures would be $350/ton, a ton would do it. If fertilizer is not applied, additional acreage would be necessary. Assuming we get those late summer/early fall rains.

With some fencing, this would be an ideal field to stockpile.
Photo source: Nancy Glazier

My feeble figures for the above scenario show the stockpiled costs would be about $750, about $420 less than the hay value. These figures do not cover the cost of transporting, moving and feeding hay and any additional fence is already in place. This may be a doable scenario in parts of our region where marginal land is available for rent or use. This would be an ideal situation where someone else only wanted one cutting earlier in the season. Some farms have the option of moving animals to another location to graze partway through the season, which frees up acreage for stockpiling as well.

As a refresher for stockpiling, strip graze the stockpiled pasture any time after a hard frost. We have no control over the weather, so have a backup feed plan. Fertility should be adequate, if not, apply to soil test reports. Some species will stockpile better than others. We don't have a lot of tall fescue in our region, but that has the best standability. Other options include orchardgrass, timothy, and bromegrasses. The full article can be found on our website here: https://nwnyteam.cce.cornell.edu/submission.php?id=758&crumb=grazing|4.

Come celebrate with us!

JERRY BERTOLDO'S RETIREMENT!

Join us for an open house to wish Jerry farewell!

Friday, August 24 from 5:00 p.m. - 8:00 p.m.

Kennedy Building, Genesee County Fair Grounds
5056 East Main Street, Batavia, 14020

Questions?

Libby Eiholzer: 607.793.4847
Nancy Glazier: 585.315.7746

Light refreshments will be provided

Welcoming New Team Member

We are pleased to announce the appointment of Margaret Quaassdorff to the Dairy Management Specialist position for the Northwest NY Dairy, Livestock and Field Crops team effective August 1. Margaret comes to us from Iowa where she managed the herd health and production of a 300-cow robot/parlor teaching dairy at the Northeast Iowa Dairy Foundation. As the lead herdsperson, she also organized and served as an instructor for lab classes, producer clinics and 12,000 public farm visitors. She is no stranger to New York, as she interned at the Miner Institute in Chazy, NY while attending UVM for her B.S. in Animal Science. She attended the University of Wisconsin where she earned her M.S. in Dairy Science and Dairy Nutrition. Margaret will be working out of the Genesee CCE office in Batavia.

Please join us in welcoming Margaret to the CCE team!

NWNY Team Bids Farwell to Cathy

Cathy Wallace, team administrative assistant and anchor of the team, is retiring. Her last official day is August 17. She started in July 2007 after working for CCE Livingston for eight years. Cathy is the pleasant voice on the end of the phone, layout designer for newsletters and mailings, and the smiling and efficient registration-taker/organizer at congresses. She makes sure our programs run smoothly and bills get paid correctly. We have greatly appreciated all she has done for the team over the years.

We wish Cathy the best as she starts a new chapter in her life!

Conventional, Organic Corn-Soybean-Wheat Cropping Systems Study: Corn Grain's Interesting 2017 Results

By: John Hanchar and Bill Cox

This article draws from Cox, Bill and others. 2017. "SHOCKER: Organic Corn 206 bushels/acre and Conventional Corn 175 bushels/acre when following Wheat/Red Clover with High Inputs (but 191 and 199 bushels/acre, respectively, when following Soybean)." Ithaca, NY: Cornell University. December 1, 2017. <http://blogs.cornell.edu/whatscroppingup/2017/12/01/shocker-organic-corn-206-bushelsacre-and-conventional-corn-175-bushelsacre-when-following-wheatred-clover-with-high-inputs-but-191-and-199-bushelsacre-respectively-when-following-soybean/>

Photo source: Bill Cox

Summary, Research Farm Study Results, Corn Grain, 2017

- Conventional corn following wheat/red clover yielded 161 and 175 bushels per acre for the recommended and high inputs scenarios, respectively, while organic corn following wheat/red clover yielded 180 and 206 bushels per acre for the recommended and high inputs scenarios, respectively
- Conventional corn following soybeans yielded 168 and 199 bushels per acre for the recommended and high inputs scenarios, respectively, while organic corn following soybeans yielded 164 and 191 bushels per acre for the recommended and high inputs scenarios, respectively
- Agronomists noted: the red clover green manure crops -- 2.5 dry matter tons/acre and 3.85 percent N in the organic plots but only 1.25 tons per acre and 3.0 percent N in conventional plots; and the use of commercial composted manure to meet nutrient needs of the organic corn crop as factors contributing to the yields realized for organic corn following wheat/red clover scenarios
- Costs and returns analysis based upon 2017 agronomic results will appear in the September 2018 issue of Ag Focus

Conventional, Organic Corn-Soybean-Wheat Cropping Systems Study

Producers often express interest in alternative crops for their potential to improve the economic viability of their businesses. Organic crop production currently interests some producers.

Bill Cox, Emeritus Professor, Cornell University/School of Integrated Plant Sciences, and others initiated a 4 year study at Cornell University's Aurora Research Farm in 2015 to compare different sequences of the corn, soybean, wheat/red clover rotation in conventional and organic cropping systems under recommended and high input management during the 36 month transition period from a conventional to an organic cropping system. Please see the reference cited at the beginning of this article for study details. Crop sequence information appears in Table 1.

Results

Corn grain yields varied considerably with regards to conventional versus organic, recommended versus high inputs, and preceding crop – wheat/red clover versus soybean (Table 2). Agronomists noted: differences in the red clover green manure crops -- 2.5 dry matter tons/acre and 3.85 percent N in the organic plots, but only 1.25 tons per acre and 3.0 percent N in conventional plots; and the use of commercial composted manure as factors contributing to the yields realized for organic corn following wheat/red clover scenarios.

Next Steps, Economic Analysis

Previous economic analysis evaluated the optimal sequence for the transition period based upon the sequences in Table 1. Please see the following for a reporting of this work:

https://nwnyteam.cce.cornell.edu/submission.php?id=705&crumb=organic|6 In the September 2018 issue of Ag Focus, we will report on costs and returns analysis based upon the 2017 agronomic results.

Table 1. Crops by year, Cox and others, 2017.

Year	Sequence 1	Sequence 2	Sequence 3
2015	Red Clover (RC)	Corn	Soybean
2016	Corn	Soybean	Wheat/RC
2017	Soybean	Corn	Corn
2018	Wheat/RC	Soybean	Soybean

Table 2. Corn grain yields, 2017.

Corn Crop Description	Yield (bu. per acre), 15.5% Moisture
Conventional	
Recommended Inputs following Wheat/RC	161
Recommended Inputs following Soybean	168
High Inputs following Wheat/RC	175
High Inputs following Soybean	199
Organic	
Recommended Inputs following Wheat/RC	180
Recommended Inputs following Soybean	164
High Inputs following Wheat/RC	206
High Inputs following Soybean	191

Cover Crop Options for 2018

By: Jodi Letham

We are just about wrapped up with wheat harvest which means that leaves about 125,000 acres out there in New York to plant some cover crops! If we throw in the other acres of small grains (barley, rye, and oats) the acreage continues to add up! We also have the opportunity to grow some more forage acres. The rest of the summer is shaping up to be hot and dry which may impact some of our yields. Crops like sorghum, forage oats and triticale can help mitigate some of those forage losses. The last few years of research have shown us that the first half of August has been the optimal planting window for a successful cover crop.

A huge emphasis has been placed on soil health and cover crops here in NY. There are a lot of options when it comes to choosing a cover crop species (See table). When deciding on what direction to go you have to ask yourself "What do I want to accomplish?" Is it soil conservation, increase organic content, a trap crop for nitrogen, comply with conservation payments or weed control? Other things to consider are costs (See table). Do you want a species that winterkills or overwinters? Is compaction an issue? Do I need extra forage? We all know there is a benefit to keeping something growing and covering the fields at all times. We have also seen the benefits to planting multiple species together. Mixing tap root and fibrous root species together helps create soil microorganism biodiversity.

Radishes do a great job at loosening up the soil when there is a compaction issue. Yet, there's some concern we may not be getting the nitrogen back that we put into them. A radish will degrade very quickly in the early spring prompting the question "Will the nitrogen be all gone by the time the corn is ready for it?" It may be more beneficial to plant an overwintering cover crop like a winter grain or ryegrass with the radish so that it can pick up that N and keep it around longer so the corn can utilize it when it needs it the most.

Cover crops have been planted with many different drills, air flowed, broadcast and aerially applied. All can be successful, however proper calibration can be tedious and very frustrating. Most planters don't have the settings for some these non-traditional plants. Take the time to figure it out! Don't waste your time or money applying too much or too little. Ask your cover crop seed dealer for their recommendations.

Preventative Plant Acres

If you are planting a cover crop after a failed corn or soybean field, check the herbicide labels if pre-emergence product was applied. Some small seeded cover crop species may not be able to be planted due to the plant back restriction. Penn State has a great reference table for cover crop https://extension.psu.edu/herbicides-persistence-and-rotation-to-cover-crops Purdue has also put together a good reference on cover crops for prevented planted acres https://ag.purdue.edu/agry/extension/Documents/PreventedPlantingCovers2015.pdf

Extra Forage

We have a few options for the early August planting date. Spring/forage oats are a good choice and typically end up in the boot stage by mid-October. I have seen 1.5 to 2 tons of dry matter per acre. You can also add annual ryegrass to the mix and field peas or clover if a higher protein is desired. Planting winter triticale is a common practice after corn silage harvest. It is harvested in May just after flag stage emergence (GS 9). We have seen 2-4 tons of dry matter per acre in NY. See the winter triticale forage fact sheet at http://nmsp.cals.cornell.edu/publications/factsheets/factsheet56.pdf for specifics.

Upcoming Webinars:

"What's Different about Jerseys…& Not"

August 13, 1:00 p.m. - 2:00 p.m.

Presented by:

Mike Hutjens

University of Illinois

Sponsored by KTG

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

	Drilled	Broadcast	Price / lb.	Winterkill?
Annual Rye Grass	10-20 lbs.	20-30 lbs.	$1.00	N
Sorghum - Sudangrass	30-40 lbs.	30-40 lbs.	$ .90	Y
Crimson Clover	12 lbs.	20 lbs.	$1.05	N
White Clover	5-9 lbs.	7-12 lbs.	$3.00+	N
Red Clover	7 lbs.	10 lbs.	$2.15	N
Field Peas/Austrian Winter Peas	120/50 lbs.	140/60 lbs.	$0.60 - 0.65	Y/N
Hairy Vetch	15-20 lbs.	25-30 lbs.	$2.00	N
Forage Radishes	8-10 lbs.	12 lbs.	$1.50	Y
Forage Turnips, Purple Top	4-7 lbs.	10-12 lbs.	$2.30	N
Oats (Spring or Forage)	80-110 lbs.	110-140 lbs.	$0.40 - 0.50	Y
Triticale	80 lbs.	110 lbs.	$0.39 - 0.44	N
Wheat	70 lbs.	100 lbs.	$0.40 +/-	N
Winter Cereal Rye	60 lbs.	85 lbs.	$0.28 - 0.34	N

Chop, Chat, & Chew: The 3 C's of Forage Quality

By: Jodi Letham

Temperatures here in the NWNY region have been averaging mid 80's to low 90's with high humidity and we are seeing the effects of a moderate drought in some areas. It's DRY! There isn't much rain predicted for the long range forecast and we are seeing 7ft corn tasseled.

The length of cut forages, whether it is haylage, corn silage or another forage crop, has an impact on the final forage quality in several ways. The length of chop has an effect on packing in various storage types, which ultimately affects the fermentation. There's also the effect on fiber.

A short chop will minimize air infiltration into the silo, while longer chop length increases effective fiber in the diet. Theoretical length of cut (TLC) recommendations for alfalfa and grass are 3/8 to 1/2 inch and the TLC for corn is 1/2 to 3/4 inch. Corn harvested for silage at greater than 30 percent dry matter (DM) should be processed to maximize utilization by the animal.

By understanding the 3 C's of forage quality, you can make decisions for your forage harvest that will provide you with a higher-quality end product to feed your herd.

A coarser or longer chop will not pack as well as a finer chop, allowing more air spaces in between forage particles in the storage facility. A finer chop will lend to better packing, regardless of the storage structure or moisture. Length of cut, packing and the amount of air present in the storage structure can affect fermentation. In a proper fermentation, the sugars are mainly used as fuels for the lactic acid bacteria. Drier feeds, poorly packed feed or any other situation that would increase the oxygen level present in the storage structure, will cause more of these sugars to be used by the aerobic bacteria, molds and yeasts. By reducing the amount of time it takes for the pH to drop and oxygen to be eliminated will increase the sugars available for lactic acid production.

So how does length of cut affect effective fiber? A longer cut will provide more physical fiber than a shorter cut. In all cases, a shorter cut will reduce the effectiveness of the fiber. Achieving adequate ration particle size requires using recommended guidelines for forages and TMRs (Table 1.). Particle size guidelines were based on intense research studies at Penn State to further refine the guidelines.

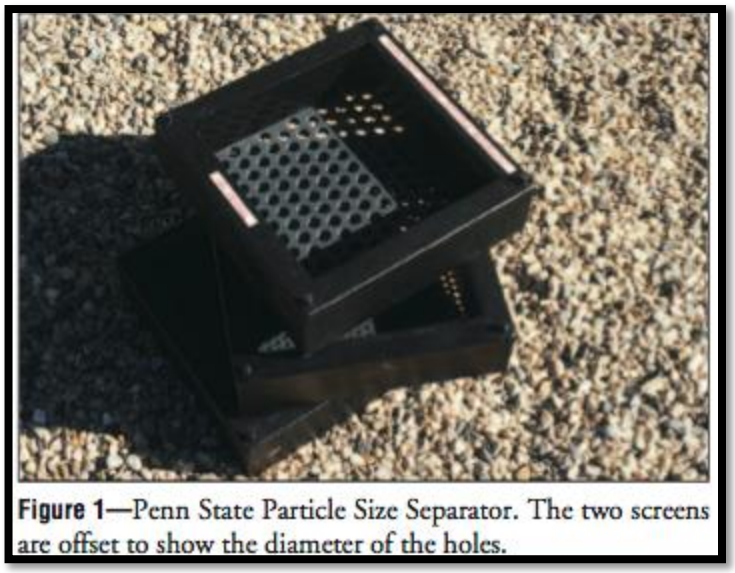

Figure 1—Penn State Particle Size Separator. The two screens are offset to show the diameter of the holes.

Table 1. Corn Silage, Haylage, & TMR particle size recommendations for lactating cows.					
Screen	Pore Size (inches)	Particle Size (inches)	Corn Silage	Haylage	TMR
Upper Sieve	0.75	> 0.75	3 to 8	10 to 20	2 to 8
Middle Sieve	0.31	0.31 to 0.75	45 to 65	45 to 75	30 to 50
Lower Sieve	0.16	0.16 to 0.31	20 to 30	30 to 40	10 to 20
Bottom Pan		< 0.16	< 10	< 10	30 to 40

Particle size effects on the Dairy Cow

Adequate forage particle length is necessary for proper rumen function. Reduced forage particle size has been shown to decrease the time spent chewing and cause a trend toward decreased rumen pH. When cows spend less time chewing, they produce less saliva, which is needed to buffer the rumen. In comparison, when feed particles are too long, animals are more likely to sort the ration, and ultimately the diet consumed is very different than the original formulation.

Chat with our new Dairy Management Specialist Margaret Quaassdorff to discuss your goals for optimizing forage quality through proper harvesting, ensiling, and feedout practices!

Increasing Farm Milk Prices & Net Farm Income:

The Impact of Farm Milk Production Decisions

August 13, 2018, 8:30 am - 5:00 pm

Empire State Plaza Convention Center, Albany

Dairy Farm Families are struggling with their fourth consecutive year of farm milk prices below their costs of production. Low milk prices have been a constant issue for dairy farmers for many years but at least there was some significant price recovery at least every three years or so.

These issues are impacting all dairy farmers no matter their volume of milk produced or location of their farm. Farmers are looking for a solution to this pricing problem that will address their immediate financial stress and persistent year to year price issues.

Meeting Agenda:

- Making the dairy farm dilemma clear
- Supply programs from the past

- On-going supply programs
- Demand programs
- Lessons from other commodities
- New ideas
- Legislative reaction
- Legal concerns
- Committee to begin an action plan

RSVP by: August 6

For more information & to register click here or follow the link: https://www.agrimark.coop/open-dairy-meeting/index.php

Lunch is available for purchase at the Plaza or attendees may bring their own.

Pastured Pork Workshop At Flint and Steel Farm

- Angela Ingraham, farmer/owner of Flint and Steel Farm and President of the American Guinea Hog Association, will be hosting a program featuring Michelle Fioco of Smith Road Farm.
- Michelle will provide the participants with an overview of the ins and outs of small-scale pastured pork production.
- Angela will have fencing displayed and will provide information on American Guinea Hogs.
- Nancy Glazier, Cornell Cooperative Extension Northwest New York Dairy Livestock and Field Crops Team Small Farms Specialist will be available to answer questions on pasture health, maintenance and forage selection.

Light refreshments provided. Please wear clothes and shoes appropriate for a walk around a working farm.

For more information or to register, please call: 315-536-5123 or visit us online at https://reg.cce.cornell.edu/pasturedpork_257

Date: August 15th, 2018
Time: 6:00 pm-8:00 pm
Location: Flint and Steel Farm, 250 Bassett Rd., Naples, NY 14512
Cost: $10 a person or $15 a couple

Pre-registration by August 13th is REQUIRED, as space is limited!

Cornell Cooperative Extension | Yates County

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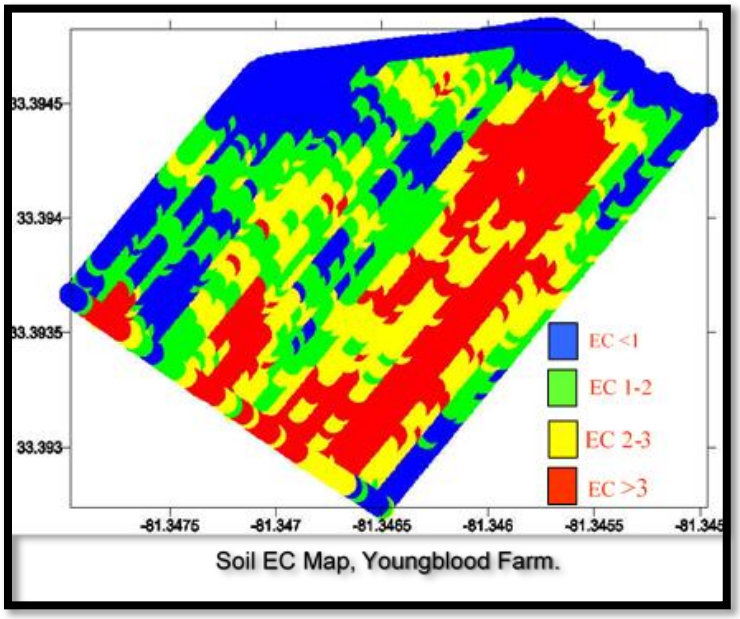
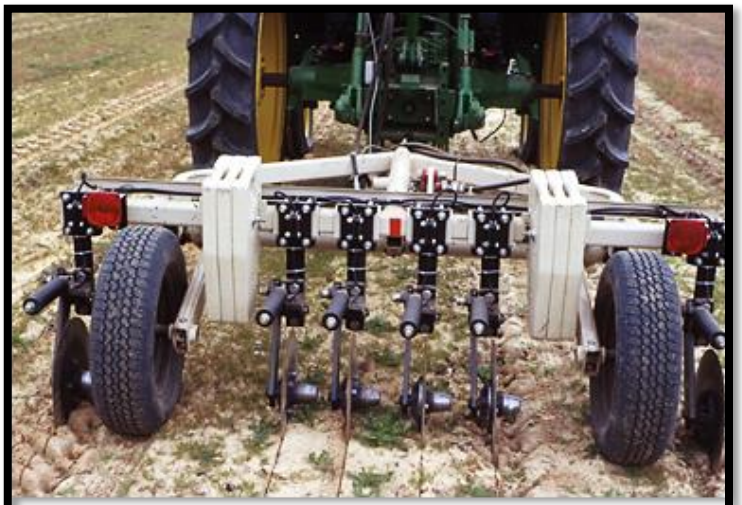
Precision Agriculture Part 1

By: Ali Nafchi

Precision agriculture addresses the variations in production system to enhance plant growth and crop yield. Precision agriculture tools can improve the production by early detection of diseases and deficiencies in plants or soil. Such tools in agriculture would also analyze, compute, and simulate the plant growth in different conditions to address the plant needs by making the best applicable decisions. In an ideal precision farming program, applications would accurately and precisely utilize the amount, timing, and the manner of inputs based on variabilities. In precision farming, the variations in soil sometimes are the key component for making best decisions. From soil properties such as pH, Electrical Conductivity (EC), structure, texture, and organic matter, "precision agriculture decision making tools" can help growers to decide for their type/amount of fertilizer, lime, seeding rate, seeding depth, and irrigation scheduling. Decision making tools can use imagery information from plants to detect weeds, diseases, and stresses due to deficiencies and adjust different applications accordingly. In precision agriculture, adjusting the application according to the variations is one of the decision making tools and called "Variable Rate Application" or Site-Specific Management.



Soil EC Map, Youngblood Farm.


Soil Electrical Conductivity (EC) System.

Variable-Rate Application (VRA) tools can be implemented by using:

- Computer interface with variability maps (using prescription maps)
- On-the-Go VRA Applicator (using different sensors)
- Multi-Channel Applicator (like ramp applicator)

The first step to implement the VRA is to find and detect the variations, create different zone(s) and treat each zone individually. In zone creation, the variability in each zone must be non-random and steady (like variation in soil texture: Clay, Loam, Sand...). However, recorded plant response to soil variability (Yield Monitoring and Yield Map), is another reliable factor for zone creation.

Each zone should be relatively large enough and in a responsive range (Applicator must be able to be responsive for changing the rates). Usually, three to five zones is enough and this number changes based on variability and the field size.

Next step in VRA or Site-Specific Management is the "TREATMENT." The precise application or treatment would be based on information associated with each zone individually. In map-based variable rate application system, GPS system delineates management zones and computer interfaces with variability maps and the VR applicator utilizes appropriate recommendations. (To be continued…)

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August 2018

1-5 ***Niagara County Fair***, 4487 Lake Avenue, Lockport. For more information: www.cceniagaracounty.org

3-5 ***Monroe County Fair***, **NEW LOCATION**: 6565 East River Road, Rush. For more information: www.mcfair.com

11-18 ***Wyoming County Fair***, 70 East Main Street, Pike. For more information: www.wyomingcountyfair,org

13-18 ***Wayne County Fair***, 300 W. Jackson Street, Palmyra. For more information: www.waynecountyfair.org

13 ***Increasing Farm Milk Prices & Net Farm Income: The Impact of Farm Milk Production Decisions***, 8:30 a.m. - 5:00 p.m., Empire State Plaza Convention Center, Albany. **RSVP by: August 6**. See page 18 for more details.

15 ***Pastured Pork Workshop***, 6:00 p.m. - 8:00 p.m., Flint & Steel Farm, 250 Basset Road, Naples. **RSVP by: August 13**. See page 18 for more details or call: Caroline Boutard-Hunt @ 315-536-5123 or cb239@cornell.edu

18 ***Progressive Ag Safety Day***, 9:00 a.m. - 3:00 p.m., NY Steam Engine Pageant Ground, 3349 Gehan Road, Canandaigua. **RSVP** by: July 16 at www.cceontario.org. Space is limited! All youth must have a registration/release form signed by a parent. Forms also on the website. QUESTIONS??? Call 585-394-3977 x429 or alm72@cornell.edu.

28 ***No-Till & Never-Till Soil Health Workshop***, 12:00 p.m. - 5:30 p.m., Branton Farm, 8538 Route 237, Stafford. Pre-registration fee: $15, Door Registration: $25. **RSVP by: August 17**. For more information, contact: Dennis Kirby at 585-589-5959. DEC & CCA credits pending.

September 2018

22 ***Wool & Fiber Day***, more information TBA