Cornell University
Cooperative Extension
NWNY Dairy, Livestock & Field Crops Team

NORTHWEST NEW YORK DAIRY, LIVESTOCK & FIELD CROPS TEAM

Ag Focus

10 Commandments of Manure Application (King James version)

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

With the advent of spring weather, and most of us suffering varying degrees of cabin fever, the rush will soon be on to empty those manure storages. With that in mind, I offer the following reminder:

1. Thou shalt not spread manure within 20' of a ditch, intermittent stream, or surface inlet unless injected or immediately incorporated. Thou shalt record the date and time of such application.
2. Thou shalt not spread manure within 100' of a pond, lake, wetland, or perennial stream unless an adequate vegetated buffer strip has been established, then thou may not spread closer than 35'.
3. Thou shalt not apply manure in fall or winter to open ground on high leaching index fields without first planting winter hardy cover crops where manure will be applied.
4. Thou shalt not spread manure on saturated, frozen, or snow covered soils unless such spreading is absolutely necessary. When absolutely necessary, thou shalt not spread within 48 hours of a predicted rainfall, snowmelt, or other runoff conditions.
5. Thou shalt not spread manure within 100' of any well – yours or your neighbor's well. Thou shalt know where wells border thy fields and the potential for groundwater contamination from thy farm's activity! Thou shalt request information on the location of thy neighbor's (or rental landowner's) wells.

Continued on page 3

Focus Points

Avian Influenza Identified in the US: What Does it Mean to NY Poultry Producers?	*4*
Performance of DFBS Program: Some Early Results	*6-7*
Upcoming Webinars	*9*
Dairy Acceleration Program Expanded	*10*
Dairy of Distinction Application	*12*
Strategic Planning 101 - Part 3	*14-15*
Young Dairy Managers PA Tour	*16*
New Field Crop Publication: Penn State Organic Crop Production Guide	*17*
New Pest-Fighting, Yield-Boosting Alfalfa to Help Farmers	*18*
Varying Corn & Soybean Populations, Varieties, & Down Force	*20-22*
Pop-Up Starter Fertilizers in Corn & Soybeans	*23*
Regional Meetings	*Back Cover*

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Mission Statement

The NWNY Dairy, Livestock & Field Crops team will provide lifelong education to the people of the agricultural community to assist them in achieving their goals. Through education programs & opportunities, the NWNY Team seeks to build producers' capacities to:

- Enhance the profitability of their business
- Practice environmental stewardship
- Enhance employee & family well-being in a safe work environment
- Provide safe, healthful agricultural products
- Provide leadership for enhancing relationships between agricultural sector, neighbors & the general public.

Continued from page 1

6. Thou shalt not locate temporary manure piles within 300' of a well, surface water, or surface inlet. Thou shalt locate them where clean water will be excluded and access is practical even during poor weather conditions.
7. Thou shalt not spread manure in the fall or winter on fields that have a potential to flood.
8. Thou shalt not exceed the soil's infiltration or water holding capacity in any total single application of liquid manure. Thou shalt adjust this amount to avoid runoff or loss to subsurface tile drains.
9. Thou shalt not allow fall and winter manure applications to exceed 50% of the next crop's nitrogen needs.
10. Thou shalt not commence manure spreading without an annual detailed review from thy crop consultant. Thou may reduce, but thou shalt not exceed, the recommended applications rates.

Print this off and place a copy in each truck and/or tractor that will be used to spread manure; ANY manure – liquid, solid, semi-solid!

Avian Influenza Identified in the US:

What Does it Mean to NY Poultry Producers?

By: Nancy Glazier

For the first time in a decade the Highly Pathogenic Avian Influenza (HPAI) has been identified in the United States. It was first found in Oregon, then Washington, and most recently (March 13) in Kansas. The eastern infections came from migratory birds in the Mississippi flyway. Several outbreaks have occurred in British Columbia in commercial operations which resulted in the loss of over a quarter million birds. There is no treatment and control is flock euthanasia and disinfection.

Avian influenza (AI) is caused by type A viruses which can infect poultry (such as chickens, turkeys, pheasants, quail, domestic ducks, geese and guinea fowl). It is carried by free - flying waterfowl such as ducks, geese and shorebirds. These birds can carry the virus without them appearing sick. AI viruses are classified by a combination of two groups of proteins: hemagglutinin or "H" proteins, of which there are 16 (H1–H16), and neuraminidase or "N" proteins, of which there are 9 (N1–N9). Many different combinations of "H" and "N" proteins are possible. Each combination is considered a different subtype, and can be further broken down into different strains. AI viruses are further classified by their pathogenicity (low or high) — the ability of a particular virus strain to produce disease in domestic chickens. HPAI causes the greatest losses in birds. Some of the symptoms include high mortality, decreased feed intake, excessive thirst, respiratory issues, decreased egg production, and green watery diarrhea.

During an outbreak of HPAI, there is an urgent need to move product from premises that are not infected. When not done properly, movements can contribute to the spread of disease. The Secure Egg Supply (SES), Secure Broiler Supply (SBS) and Secure Turkey Supply (STS) Plans have been developed to promote food security and animal health through continuity of market planning for an HPAI outbreak. These plans make specific science- and risk- based recommendations that emergency decision makers can use to rapidly decide whether to issue or deny permits for the safe movement of poultry industry products during an outbreak. Proper biosecurity needs to occur with all size operations, including the 'backyarders.'

For the past six years, the University of Minnesota's Center for Animal Health and Food Safety has been working with industry and government on science based tools that support business continuity - this work can be found at SecureEggSupply.com and SecureBroilerSupply.com. The University, with the support of USDA and the industry, has remained involved in order to introduce these technical documents to producers and government agencies across the US through a series of regional meetings.

It is important to have a plan in place while HPAI is still a distance from the Northeast. Work is underway to develop a collaborative public-private-academic partnership for the region to facilitate the movement of eggs and egg products in an HPAI outbreak, spearheaded by the University of Minnesota. These states include New York, Pennsylvania, and Maryland. A regional workgroup will be meeting the end of April to develop strategies for this region.

A region-specific plan uses proactive risk assessments, biosecurity requirements, diagnostic testing, cleaning, and disinfection procedures to permit egg movement. It also ensures the health of uninfected flocks, food security, and provides a high degree of certainty that eggs and egg products destined for human consumption do not contain HPAI virus.

For more information contact Nancy at 585.315.7746, nig@3cornell.edu.

Performance of Dairy Farm Business Summary Program Cooperators in 2014 – Some Early Results

By: John J. Hanchar

Summary

- While milk sold per cow was relatively stable, milk receipts per hundredweight (cwt.) rose 18.5 percent to $25.88 in 2014 when compared to 2013.
- In 2014, the total cost of producing a cwt. of milk was $21.61, an increase of 3.8 percent relative to 2013.
- As of mid February 2015, early results suggest that the same 57 Northeast dairy farms in Cornell University Cooperative Extension's Dairy Farm Business Summary (DFBS) Program achieved greater levels of profit in 2014 compared to 2013 -- for example, in 2014, the rate of return on all assets without appreciation averaged 13.9 percent compared to 6.9 percent in 2013.

Introduction

On February 23, 2015, Cathryn Dymond, Extension Support Specialist, The Charles H. Dyson School of Applied Economics and Management, Cornell University, compiled some early results using data from Cornell University Cooperative Extension's DFBS Program. The results reported represent averages for the same 57 Northeast dairy farms cooperating in 2013 and 2014.

Size of Business

- The average number of cows per farm rose from 655 in 2013 to 692 in 2014, an increase of about 5.7 percent.
- Worker equivalents per farm rose about 6.7 percent to 15.8 in 2014.
- Total tillable acres increased from 1,374 to 1,445 acres.

Rates of Production

- Milk sold per cow averaged 25,297 pounds in 2013 compared to 25,544 in 2014.
- Hay dry matter per acre fell 13.5 percent to 3.2 tons, while corn silage per acre rose from 16 to 18 tons.

Income Generation

- Gross milk sales per cow increased from $5,524 in 2013 to $6,610 in 2014, an increase of 19.7 percent.
- Gross milk sales per hundredweight (cwt.) rose from $21.84 to $25.88.

Cost Control

- Dairy feed and crop expense per cwt. of milk rose from $9.03 in 2013 to $9.30 in 2014, an increase of 3.0 percent.
- In 2014, purchased input cost of producing a cwt. of milk was $19.37, an increase of 3.6 percent relative to 2013.
- Total cost of producing a cwt. of milk rose from $20.81 to $21.61, an increase of 3.8 percent.

Profitability

- Net farm income without appreciation per cwt. of milk averaged $6.51 in 2014, an increase of 108 percent compared to 2013.
- Rate of return on equity capital without appreciation as a percent was 19.1 in 2014 and 8.7 in 2013.
- In 2014, the rate of return on all assets without appreciation was 13.9 percent, an increase of 101.5 percent relative to 2013.

Final Thoughts

Owners of dairy farm businesses cooperate in Cornell University Cooperative Extension's DFBS Program for the purpose of identifying strengths and weaknesses by comparing their results to results of other cooperators. Are you interested in realizing the benefits of DFBS participation? Call John Hanchar – for contact information, please see information at the front of this newsletter.

Slow Poultry Workshop

A workshop for Small, Sustainable Poultry Farmers who are interested in breeding, growing and selling standard bred poultry: Full-day workshop: Saturday, April 18, 2015 from 9:00 a.m. - 5:00 p.m. at Wild Geese Farm, 8499 Agett Rd., Franklinville, 14737

Have you ever tasted a farm-fresh egg or freshly-harvested chicken? Many people are now raising their own poultry for personal use or for sale, making this an exciting time in the poultry industry. The marketplace for historical, heritage breeds of poultry is growing rapidly. Would you like to learn about standard bred poultry? Learn how to breed and reproduce heritage poultry for eggs and meat! Learn about sustainable breeding, and how to market poultry products in stores, restaurants, and in your community! Learn what breeds are on the verge of extinction and how you can be a part of their preservation! During this workshop, you'll learn how to identify breeds, how to select and breed them legally and safely, how to create an environment for maximum, natural production, and finally, how to strategically market your poultry for a small farm profit.

In this workshop you will learn about the history of commercial/industrialized turkeys versus heritage turkeys. You'll learn the basics of brooding poults, dealing with heat, feeding, watering, pastures, proper fencing and even how to deal with predators. The workshop will end with wonderful secrets to marketing your products, planning for profit, and building a sustainable farming program with your flock.

Pre-registration required. Register on-line: http://www.sustainablepoultrynetwork.com/workshops-seminars

For more information contact Lynn Bliven at 585-268-7644 ext. 18 or email at lao3@cornell.edu.

Upcoming Webinars:

Storing & Preserving Next Year's Silage

April 13, 1:00 - 2:00 p.m.
Presented by: Mike Hutjens, University of Illinois
Hoards Dairyman
http://www.hoards.com/webinars

Technology Tuesday Webinar Series:
Restraint & Handling of Dairy Cattle

April 14, 8:30 a.m. - 10:30 a.m.
Presented by: Dan McFarland, Penn State Extension Dairy Team
http://extension.psu.edu/animals/dairy/courses/technology-tuesday-series

Meeting Heifer Nutrition Goals

April 21, 1:00 p.m.
Presented by: Dr. Bob James, Virginia Tech
http://www.extension.org/pages/29156/upcoming-dairy-cattle-webinars#.VQM5Mo54og0

Technology Tuesday Webinar Series:
Milk Quality & Robotic Milking Systems

April 28, 8:30 - 10:30 a.m.
Presented by: Mathew Haan, Penn State Extension Dairy Team
http://extension.psu.edu/animals/dairy/courses/technology-tuesday-series

Dairy Acceleration Program Expanded

By Joan Sinclair Petzen

The successful partnership between the New York State Departments of Agriculture and Markets (NYS -DAM) and Environmental Conservation (NY-DEC) and Cornell University's Pro-DAIRY Program offers expanded services of Best Management Practices (BMP) engineering in 2015. Farms with fewer than 700 cows and an up-to-date Comprehensive Nutrient Management Plan (CNMP) may apply for funding to cover 80% of the costs of engineering of BMPs outlined in the plan. The Dairy Acceleration Program (DAP) continues funding projects for business planning and analysis. Farms with fewer than 300 cows may also receive funding for development of a new CNMP or update of an existing one.

What can be funded with the DAP environmental planning resources?

DAP cost shares up to 80% of the cost of the following practices up to the award limit:

- Up to $6,000 to develop a new CNMP (farms under 300 mature cows).
- Up to $4,500 to update an existing CNMP (less than 3 yrs. old and farms under 300 mature cows).
- Up to $5,000 for design of a single eligible BMP identified in the CNMP (farms under 700 mature cows).
- Up to $10,000 for design of a combination of BMPs identified in the CNMP (farms under 700 mature cows).
- Up to $2,500 for certification of existing manure storage.
- Up to $1,000 for a soils investigation necessary for a BMP.
- Up to $1,000 for a topographic survey necessary for a BMP.

What BMPs are eligible for design funding?

Farms with fewer than 700 cows can receive funding for up to 80% of the engineering costs associated with designing one or more of the following practices:

- 561 Heavy Use Area (e.g. concrete barnyard)
- 367 Roofs and Covers (e.g. cover over a barnyard)
- 317 Composting Facility
- 316 Animal Mortality Facility
- 635 Vegetative Treatment Area
- 360 Waste Facility Closure
- 632 Waste Separation Facility
- 313 Waste Storage Facility
- 634 Waste Transfer
- 629 Waste Treatment

Awards provide up to $5000 for design of a single practice and up to $10,000 for design of multiple practices. The practices must be outlined in the farm's CNMP.

New York dairies can capitalize on opportunities to reduce their environmental footprint, establish plans for environmental compliance and evaluate the feasibility of growth options with assistance from New York State through the Dairy Acceleration Program administered by Pro-DAIRY at Cornell University. Northwest New York Team members are prepared to answer questions about, assist with applications for funding and facilitate DAP projects for farms in our region.

DAIRY ACCELERATION PROGRAM - Environmental Planning

Dairy Acceleration Program

Environmental Planning

CNMP Updates for farms under 300 cows.

New CNMP's for farms under 300 cows.

Design of BMPs for farms under 700 cows.

Eligible BMPs

- **561 Heavy Use Area (e.g. concrete barnyard)**
- **367 Roofs and Covers (e.g. cover over a barnyard)**
- **317 Composting Facility**
- **316 Animal Mortality Facility**
- **635 Vegetative Treatment Area**
- **360 Waste Facility Closure**
- **632 Waste Separation Facility**
- **313 Waste Storage Facility**
- **634 Waste Transfer**
- **629 Waste Treatment**

- Up to $6,000 to develop a new CNMP (farms under 300 mature cows).
- Up to $4,500 to update an existing CNMP (less than 3 yrs. old and farms under 300 mature cows).
- Up to $5,000 for design of a single eligible BMP identified in the CNMP (farms under 700 mature cows).
- Up to $10,000 for design of a combination of BMP's identified in the CNMP (farms under 700 mature cows).
- Up to $2,500 for certification of existing manure storage.
- Up to $1,000 for a soils investigation necessary for a BMP.
- Up to $1,000 for a topographic survey necessary for a BMP.

To apply or learn more visit http://prodairy.cals.cornell.edu/dairy_acceleration/
Or call PRO-DAIRY program coordinator, Caroline Potter at 315-683-9268.

*Funds cover 80% of cost of services up to value of award.

PRO-DAIRY Program
Phone: 315-683-9268
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Making a difference in people's lives and businesses.

Cornell University
College of Agriculture and Life Sciences

The Dairy Acceleration Program is an initiative of Governor Cuomo in partnership with the NYS Department of Agriculture and Markets and the NYS Department of Environmental Conservation.

DAIRY OF DISTINCTION

New York Application

DairyofDistinction.com

Purpose of Program

Attractive dairy farms give the consumer greater confidence in the wholesomeness of milk and stimulate milk sales which encourages public support of the dairy industry. The award gives recognition to the dairy farmer for maintaining a well-kept farmstead.

Eligibility

All Northeast dairy farms producing milk for sale are invited to submit an application for the award. Applicant farms must receive a score of 90 or higher to receive an 18"x24" Dairy of Distinction sign. The sign is to be displayed in front of the farm. Winners need not reapply but will be re-judged each year.

Application

Name_____ **Farm Name**_____

Mailing address_____ **Town**_____ **Zip**_____

Phone number _____ **Email** _____

Milk Cooperative or Handler _____

Location (driving directions for judging team)_____

_____

County where farm is located_____

I hereby apply to the Northeast Dairy Farm Beautification Committee to have my dairy scored in accordance with the rules of the program for the purpose of obtaining a Dairy of Distinction sign to be displayed on my premises (No producer will be charged for scoring or sign expense)

_____ **Date**_____

Signature of owner/operator

____ Please check if farm is rented or leased

Application must be **postmarked by April 15 to:**
Nancy Putman
80 Chipman Corners Road
Lisbon, NY 13658

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2011 CATERPILLAR M318D; VA Boom, F&R Outriggers, WR QC w/Trenching and Ditching Bkts. Aux. Hyds. 3,182 hrs, CAT inspection available on machine. - **$159,900**
Rental Prices: Weekly: $1,500 Monthly: $4,500
Date available: Call for Availability

2007 YANMAR C50R-3B; Hydrostatic Drive, OROPS, 8,100 Lb Capacity, Rubber Tract, 53,000 Hrs - **$42,900**

2005 DEERE 120 C; Excavator, 24" track, Long Stick, 24" Bucket, Auxiliary Hydraulics - **$54,000**

2010 CATERPILLAR D6K LGP with Open ROPS Canopy, PAT 6 Way Blade, Only 1,296 hrs., System One UC, 75% Remaining, Heater, CAT inspection available on machine. - **$88,900**
Rental Prices: Weekly: $1,050 Monthly: $3,000
Date available: Call for Availability

2008 CATERPILLAR 324DL; Long Stick, 36" Bucket w/New Teeth, Hyd. Lines for Coupler, 32" Track in Good Condition, Cab w/AC, 6,000 Hrs - **$98,000**

2010 CATERPILLAR 324DL LR Cat 324DL Long Reach Excavator, 60' reach, Good C. Alex fire suppression system, 7,968 hours - **$120,000**
Rental Prices: Daily: $2,500 Weekly: $7,500
Date available: Call for Availability

2006 KOMATSU D65PX-15; S-Blade w/Twin Tilt, 36" Shoes; UC 70% Remaining, EROPS, 9,862 Hours - **$59,900**

2001 CATERPILLAR 988G with Spade Nose Bucket, Ride Control, 22,860 hours, Pins and Bushings Show Little wear, No Leaks, Runs Good, The Machine is Tight and Dry, 35/65 Rubber, 474 HP, EROPS w/AC, Stick Steer. CAT inspection available on machine.- **$99,900**

2004 CATERPILLAR 325CL; 44" Bucket, Long UC, Long Stick, Hydraulic Quick Coupler, 6,187 Hrs - **$74,500**

2007 DEERE 240D LC; Long UC, 32" Track, Long Stick, QC, 44" GP Bucket, Pattern Control Changer, Cab w/AC, 7,268 Hrs - **$89,000**

2001 DEERE 744H Clean Deere 744H, 23.5x25 rubber, GP Bucket, EROPS w/AC, 14,843 Hours - **$53,000**

2010 CATERPILLAR 320DL Long UC, 44" GP Bucket, 32" Track, Clean Machine, 4,662 Hrs. - **$111,000**

2010 CASE 650L WT, 20" Track, OROPS w/Sweeps and Screens, 6 Way Blade, 1,219 Hrs. - **$68,500**

2010 CATERPILLAR CB-434D Double Drum Vibratory Roller, Water Spray System, 59" Drums, Cat 3054 Diesel, 2,124 hrs. CAT inspection available on machine. - **$59,900**

2002 KENWORTH T800 C10 Caterpillar 335 HP, Diesel, 10 Spd, Engine Brake, 22", Hendrickson Suspension, 5.29 Ratio, 262" WB, 22.5 Tires, All Steel Wheels, Tri Axle, 20,000# FA, 44,000# RA, 92,000 Miles, Very Clean Low Mile Crane Truck with 22' Deck & Manitowoc mdl 1047 3 Stage 10 Ton Crane. Double Frame, Rubber 90+%. We will separate the crane/bed from the chassis. 25' of Frame behind the cab, 186" C-T - *Stk # 4619* - **$53,900**

2007 CASE 1150K WT 3368 Hours, ROPS Canopy, PAT Blade, 30" Shoes, Good Running, 6 Way Blade, Wide Track Version - **$63,900**
Rental Prices: Weekly: $1,200 Monthly: $3,600
Date available: Call for Availability

2005 OSHKOSH F2346 Qty (6) ISM Cummins 330 HP, Diesel, Automatic, Chalmers Suspension, 4.89 Ratio, 212" WB, 22.5 Tires, All Steel Wheels, Tandem Axle, 23,000# FA, 46,000# RA, 68,000-100,000 Miles, Clean, Low Mile 6x6 Cab and Chassis with 18' of Frame Behind the Cab, 152 C-T and Full Locking Rears. *Stk # 4621/4622* - **$49,900**

2006 PETERBILT 378 C-15 Caterpillar 475 HP, Diesel, 18 Spd, Engine Brake, Air Ride Suspension, 3.55 Ratio, 172" WB, 22.5 Tires, Aluminum Wheels, Tandem Axle, 12,000# FA, 40,000# RA, 380,024 Miles, Very Clean, Low Mile Tractor w/Full Locking Rears & Air Slide 5th Wheel, Transmission Model RTLO 18918B, *Stk # 4557* - **$48,900**

2006 WESTERN STAR 4900EX 14L Detroit 515 HP, Diesel, 18 Spd, Engine Brake, Air Ride Suspension, 222" WB, 24.5 Tires, Aluminum Wheels, Tandem Axle, 12,000# FA, 46,000# RA, 528,344 Miles, Very Clean Heavy Spec Truck w/Wet Line & 3/4 Locking Rears, *Stk # 4702* - **$49,500**

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Strategic Planning 101 – Part 3

By Timothy X. Terry

Dairy Strategic Planning Specialist

So far we've looked at what strategic planning is (part 1) and why it's important (part 2). In this issue we'll see how it contrasts with decision making.

Strategy vs. Decision Making

Good strategy implementation requires good decision making. Good decision making requires good judgment. "Good judgment comes from experience…and a lot of that comes from bad judgment." *Will Rogers.* So make good use of the more seasoned talent you have at your disposal.

Effective decision making, then, is the result of using your time and resources well. The result being correct, or at least well-thought-out, conclusions that can be easily carried out.

Again, this sounds simple enough, but there are a number of pitfalls to avoid: (excerpted from *Challenge the Ordinary* by Linda Henman)

1. **Group Think** occurs when "decision-makers accept proposals without scrutiny, suppress opposing thoughts, or limit analysis and disagreement." *L. Henman.* Think about a room full of nodding heads fearful that any dissention could result in termination. Unfortunately, even some well-intentioned managers may be falling into this trap simply because of a naturally imposing presence – the very same quality that may have landed them that job or built the business. The way to correct or prevent this is to leave time for discussion, or, as Bill Allen, former CEO of Boeing, was known to do: go around the room (or farm) and specifically ask each person to give their perspective on the project.

2. **Failure to Frame**. Part of your job as a decision maker is to properly frame the decision to be made. This will provide some mental boundaries within which to make the decision. Defining and limiting the scope of the decision prevents you from solving the wrong problem or wasting time discussing a mere symptom.

   However, just like #1 above, the question can be framed so well that there is little, if any, room for discussion. For example: (political questionnaire) Should we allow hydraulic fracturing that contaminates our ground water and destroys our local roads? Well, no, nobody really wants that, but what about the hydraulic fracturing that brings jobs, prosperity, and an increased tax base? Obviously, depending on how you frame the question determines the answer you receive.

3. **Complexity**. Having worked as an engineer I can tell you some people are just not happy unless it involves a 42-step process. However, as an engineer I can tell you that the more moving parts a system (or answer) has the more likely it is to fail, and if it fails it will do so at the most inopportune time. Occam's Razor says that the simplest answer is usually the best. You might know it better as the KISS principle – Keep It Simple, Stupid.

4. **Status Quo.** Based on unfounded fears of failure, rejection, change, or loss of control, management is unable or unwilling to stray too far from the known – the existing conditions. This is not to say status quo is never an option because change for the sake of change could be just as detrimental. This could be a function of a delicate ego that can't deal effectively with responsibility, blame, and regret. Unfortunately, this inability to make a decision and "pull the trigger" on implementation prevents the business from moving forward.

5. **Anchoring** is relying too heavily on one aspect or one piece of information to guide the decision making process. By default we tend to give the most weight to first impressions or initial information even if it is incorrect, incomplete, or inconsequential. We then massage subsequent data to fit our original inferences. To avoid this pitfall consider all information in an unbiased, pragmatic manner. If it is a group or committee decision present only the basic facts and avoid giving your opinion until others have had a chance to digest the information, ask questions, seek additional information, and formulate their own conclusions. Otherwise, they may simply defer to you and your values or ideas, and then you've lost the opportunity to view the problem from a variety of perspectives.

6. **Sunk Costs** aligns very closely to Status Quo and Anchoring, and is the inability to recognize when expenditures are unrecoverable (sunk). Unfortunately, this often results in "throwing good money after bad" in an attempt to recover the investment, and the more money or resources we devote to it the less we may be willing to let it go or the more we may magnify its merits. Solution: recognize that these costs are unrecoverable (like dropping change in the manure pit) and shouldn't be considered relevant in the current decision making process.

7. **Inference and Judgment.** Facts are your friends, especially when making a complicated decision in uncharted waters. Unfortunately, they can be scarce allies when fighting inference and judgment which may be far more influential and pervasive. Moreover, some people just don't like to "confuse the issue with the facts." The technical term for this is: motivated reasoning. This occurs when otherwise rational people, in spite of mounds of evidence, insist on believing things that aren't true largely because of the support they receive from others who share their views. As the decision maker your job is to separate fact from fiction, but you may also have to address associated fears and conjecture.

Next issue: Implementation

Young Dairy Managers Pennsylvania Tour

By: Libby Eiholzer

The whole group in front of the Turkey Hill cow.

Twelve New Yorkers traveled to Lancaster County, PA in March for an agricultural tour. Included in the group were Jerry & Libby, the NWNY Team's dairy specialists, one beef farmer, one fruit & vegetable farmer, and eight dairy farmers. The trip was a collaboration between the NWNY Team's Young Dairy Managers Discussion Group and the Ontario County Farm Bureau Young Farmers & Ranchers Group.

The first farm we visited was Paul Dotterer & Sons. In addition to milking 850 cows, they crop 3000 acres. A unique aspect of their business is their custom TMR operation, which provides feed either daily or weekly to local, mostly Amish farms.

Our next stop was Sturdy Built Manufacturing, which sells stalls, gates, headlocks and curtain systems across NY and PA. The owner told us that he didn't believe the money being put into expanding dairies in NY in the 90's was "real" money, as dairies weren't growing at such a rapid pace in PA. He became a believer when he saw these dairies thrive, and started Sturdy Built in 1995.

The two largest farms we visited were Star Rock Dairy (1,400 cows) and Walmoore Holsteins (850 cows). Both farms use flush systems to clean the alleys and sand lanes to reclaim sand. We were certainly wishing that we had warm enough temperatures year-round to make that more feasible in NY. All of the dairies that we visited swore by relying on their palpation rails and sort gates to give shots, breed and preg. check. Their theory is that cows stay more relaxed when they are not bothered in their groups; with both farms averaging well over 95lbs/cow, I'd say it's working!

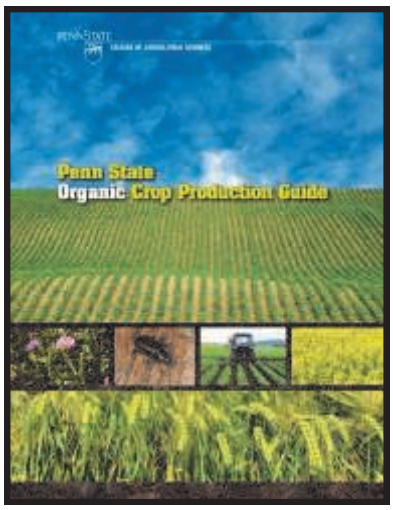
A little blurry, but this captures the idea of the unique boot washer we saw.

The Turkey Hill experience was fun, and we were all impressed with the wealth of quality information that it shares with the public about modern dairy farming. Of course, the unlimited free samples of Turkey Hill ice cream and iced tea didn't hurt!

What were some of our take - homes? A number of the farms had some really neat built - in boot washers that a few people want to try and build on their farms. Another unique gadget we saw at Meadow Spring Farm was the built-in parlor deck washers - when a side is released from the parlor, the push of a button sprays the floor for 10-15 seconds, leaving it clean for the next cows.

While the slightly warmer climate might make dairy farming in PA sound nice after a tough winter, the land values did not. We heard of land being sold for $27,000/acre, and rented at $600/acre! Overall, we were glad for the experience, and happy to come home to find that the snow was starting to melt.

New Field Crop Publication: Penn State Organic Crop Production Guide



If you are an organic -crop producer in the Northeast or a farmer interested in transitioning to organic, there is a new resource available to provide the research-based information you need to be successful.

The newly published Penn State Organic Crop Production Guide -- believed to be the first and only organic field-crop production guide tailored to the mid-Atlantic and Northeast regions -- is among the most comprehensive university-produced guides in the country, according to Charlie White, sustainable agriculture extension associate in Penn State's College of Agricultural Sciences.

"The guide provides science-based information on organic practices and ecological processes, all in one volume," White said. "It features case studies from farmers and other firsthand information gleaned from field days, workshops and networking events, tapping into the knowledge and experience of producers."

The Penn State Organic Crop Production Guide is available in print or in PDF format. A bundle that includes both versions can also be purchased. The guide can be previewed online at: http://pubs.cas.psu.edu/freepubs/pdfs/agrs124.pdf

To order, call toll-free 877-345-0691 from 8 a.m. to 4:30 p.m., Monday through Friday. All major credit cards are accepted. Checks and money orders payable in U.S. currency can be mailed to Publications Distribution Center, College of Agricultural Sciences, The Pennsylvania State University, 112 Agricultural Administration Building, University Park, PA 16802-2602.

New Pest-Fighting, Yield-Boosting Alfalfa to Help Farmers

By: Alex Koeberle
Cornell University

Dairy and other livestock farmers in the northern U.S. have three new alfalfa options this growing season – all pioneered by Cornell University researchers as a way to combat devastating pests, increase yields and improve forage quality.

Developed by Donald Viands, a professor of plant breeding and genetics in the School of Integrative Plant Science at Cornell University, along with senior research associate Julie Hansen, and research support specialist Jamie Crawford, these new varieties were grown in Cornell greenhouses and tested for resistance in farm fields across the state.

"The broader implications on agriculture revolve mostly around livestock producers, especially in the dairy industry, being able to economically produce forage for feed," Viands said. "Higher forage yield and quality, combined with multiple disease and insect resistances, enable forage to be produced more economically, thus enhancing economic vitality of livestock operations."

The first variety, SW 9558SBR, provides resistance to the alfalfa snout beetle, which can cripple root systems. Viands said this project was a collaborative effort among plant scientists Elson Shields and Tony Testa in the Department of Entomology at Cornell, extension educators and farmers. In trials, researchers have found this variety provides a half-ton increase in yield per acre.

The developers said seed companies are interested in selling SW 9558SBR to combat the snout beetle following a dramatic increase in the insect's population over the past decade. The alfalfa snout beetle, currently confined to northern New York state, has the ability to spread to surrounding states and Canada.

"It's easy to overlook this problem," said Hansen. "Beetles burrow in hay bales and if only one insect gets transported, populations can grow rapidly."

A second new alfalfa variety, SW 315LH, combats the potato leafhopper – an insect Hansen called "the most furious pest on alfalfa in all of North America." The pest does not overwinter but arrives each year from the south carried by early spring thunderstorms. While the insect is found throughout the central and northern United States, Hansen said SW 315LH is the first potato leafhopper-resistant variety of alfalfa that is well-adapted for New York.

The third variety, SW 215CR, is geared to bolstering New York's alfalfa cultivation and is the culmination of a project spearheaded by the late Royse Murphy, professor emeritus of plant breeding. This "creeping rooted" variety helps alfalfa grow in adverse conditions because its root system swells and grows laterally.

"Creeping rooted is not really a new trait, but Murphy successfully bred it into Northeast conditions," said Viands. "This variety will be effective in New York state and surrounding states, building pasture longevity."

All varieties are available to farmers through the New York-based seed company Seedway, with limited availability of SW 315LH and SW 215CR this spring. Seeds are available to farmers throughout the northern United States and may be made available to Canadian farmers in the future. Hansen said the team has had early feedback indicating both higher yields and healthier plants.

"The College of Agriculture and Life Sciences is unique for doing this type of work," said Viands. "Through collaboration with researchers, extension educators and farmers, we can help advance the land-grant mission throughout the state."

These varieties have been ongoing, collaborative projects for years and are funded primarily by Federal Hatch Funds through the Cornell University Agriculture Experiment Station as well as the Northern New York Agriculture Development Program & New York Farm Viability Institute.

Reprinted from: Cornell Chronicle, March 20, 2015

Varying Corn & Soybean Populations, Varieties, & Down Force

By: Bill Verbeten

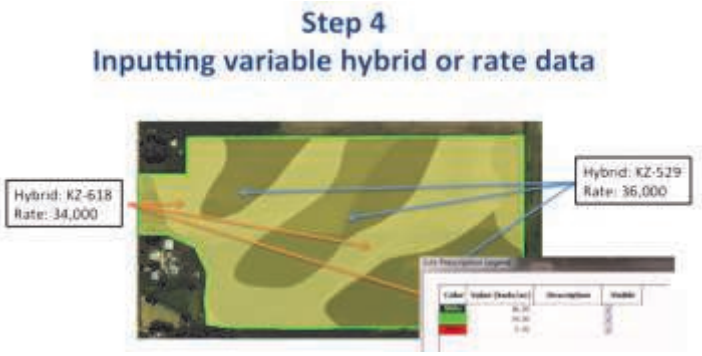
There are many opportunities to save money on seed costs, increase profits, and increase yields by varying corn and soybean seeding rates, varieties, and down force pressure within the same field in NY. Corn and soybean yields are greatly influenced by decisions made at planting and with lower prices likely in 2015 cash-grain farmers can't afford to leave yield on the table out of the gate.

Varying Seeding Rates

Some areas of corn & soybean fields simply never yield very much--the headlands are often compacted, field edges near woodlots or hedgerows are covered in shade, and some low spots are always wet. Even without variable seeding rate technology farmers can reduce seed costs by cutting populations back moderately (4,000 to 7,000 kernels/acre). During the 2012 drought researchers in Indiana found optimal corn plant population was ~7,000 plants per acre lower on unirrigated soils, http://www.agry.purdue.edu/ext/corn/news/timeless/seedingrateguidelines.html. In the longer term it may be worth planting these unproductive areas to a grass to keep weeds down and allow for easy access for field operations.

For farmers with precision ag equipment varying planting prescriptions can be written before the planting season even begins. In addition to lowering corn populations in headlands, field edges, and wet spots, farmers can vary their corn seeding rates based on management zones created from multiple years of yield mapping or soil fertility levels, *Figure 1.*

Figure 1: Writing a Variable Planting Prescription
Source: **https://www.youtube.com/watch?v=8GLKR4u0GCI&feature=youtu.be.**



The most common approach is to plant lower corn seeding rates in lower yielding areas and increasing seeding rates to higher yielding areas. Differences in soil types, soil tests, aerial imagery, and farmer experience are often used as well to make these management zones. However there are some areas of many fields that do not consistently yield high or low---they often vary with rainfall from year-to-year. The differences in variable corn seeding rates are generally moderate (2,000 to 5,000 seeds per acre). The Cornell Field Crops Guide recommends planting ~ 28,000 seeds per acre (90% emergence) on droughty soils and up to ~32,000 seeds per acre on deep, loamy soils for corn grain fields. For fields that have these different soil types varying corn populations will have a higher chance of response than a field with more similar soil types. At the end of the day yield increases are possible, but not guaranteed from varying corn seeding rates as some recent work from Indiana has shown, http://www.agry.purdue.edu/ext/corn/news/timeless/seedingrateguidelines.html. The NYCSGA is currently evaluating varying corn populations on many farms locally and is looking for more farmers to participate in these trials.

Farmers varying soybean seeding rates should take the opposite approach according to the experience of some agronomists in Ontario, Canada. High yielding areas for soybeans are often better soil with higher moisture levels. In order to decrease the chances of white mold outbreaks, soybean populations should be lowered in high yielding areas to increase air movement in the field. In 2014 many of the higher soybean seeding rate treatments in the NYCSGA population trial that were planted in higher moisture, high yielding areas had devastating outbreaks of white mold. These infected areas often show up as lower yielding areas on yield maps, even though they are probably on more productive ground. This is why having good farmer/agronomist knowledge of the field and scouting records are critical to properly determining management zones. Truly lower yielding areas (often drier, lighter soils) may require higher seeding rates of soybeans to get adequate populations. Differences in variable soybean seeding rate prescriptions may need to be greater than corn in

order to see a response in yield because soybeans change their growth patterns to compensate for differences in plant populations, row spacing, and variety type. Soybeans planted at lower populations or wider rows tend to grow more branches compared to soybeans planted in narrower rows or at higher populations. Bush or erect type soybeans may respond differently in 15 to 30-inch rows to moderate or high seeding rates, but in 7.5-inch rows or very low populations (50,000 plants/acre) yields do not differ between these two types of soybeans, https://www.extension.purdue.edu/extmedia/ay/ay-217-w.pdf.

Planting with a drill also makes accurately varying soybean populations a challenge, compared to a corn planter. The current Cornell recommendations are to plant soybeans in 7.5-inch rows at 170,000 seeds per acre, 15-inch rows at 160,000 seeds per acre, and 30-inch rows at 150,000 seeds per acre. Again the yield response based on varying planting populations alone appears to be a mixed bag, unless varieties are also varied along with population.

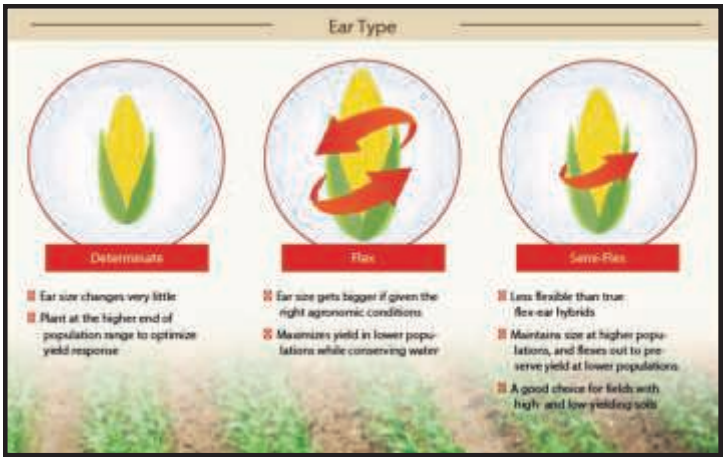
Varying Varieties

Most farmers are already varying their corn and soybean varieties across their whole farm. Longer day/later relative maturity varieties are often planted first, with shorter season varieties planted towards the end of planting season. Some fields require corn and soybean varieties with disease resistance, especially those in lower fields down in river valleys.

New equipment is allowing multiple varieties to be easily planted in the same field. Kinze's multi-hybrid planter, http://www.kinze.com/planter.aspx?id=17&4900+Multi-Hybrid+Front+Fold+Planters, leads the way with the capability to switch seamlessly between two varieties, often an "offensive" one in the high yielding areas a "defensive" hybrid in the low yielding areas, within the same row across the entire field. Results from trials conducted by Beck's hybrids in the Midwest are promising with gains of 4.5 bu/acre with offensive varieties seeded at higher rates and 9.4 bu/acre with defensive varieties seeded at lower rates in corn fields which resulted in a ~$50/acre profit. They also found 3.7 bu/acre gains with a defensive soybean variety and 2.8 bu/acre gains with an offensive variety for an increase profit of ~$40/acre, http://www.agriculture.com/crops/corn/technology/how-splitting-hybrids-varieties-c-make_139-ar42138?print. In 2013 in South Dakota, researchers found increases of 5.1 bu/acre in corn and 3.4 bu/acre in soybean by varying varieties within the same field, http://www.agweb.com/article/a_boost_in_bushels_NAA_Nate_Birt/.

What are "offensive" & "defensive" corn hybrids? Typically offensive hybrids have upright leaves and determinate ears to try to allow the most light to reach the plants and maximize yields (often in narrow rows) and are planted at higher populations. In contrast defensive hybrids have pendulum leaves (which cover the soil) and flex ears to protect yields against droughty conditions and are planted at lower populations. Defensive hybrids may also have more disease resistance than offensive varieties. Many farmers currently plant corn with semi-upright leaves with semi-flex ears to hedge their bets across highly variable soil conditions. Newer planters will allow NY farmers to take advantage of the variations in their fields in the years to come. See *Figures 2 & 3* for descriptions of these characteristics.

Figure 2: Corn Ear Types
Source: http://www.agweb.com/article/narrow_rows_fixate_on_structure_and_population/



In the late 1990's work at Cornell University did not show a benefit to varying corn hybrids across a field. That work found that managing the year-to-year variations due to rainfall were more important than the spatial variations in the field, which eventually lead to the development of Adapt-N,

Continued on page 22

Continued from page 21

http://nwnyteam.cce.cornell.edu/submission.php?id=347&crumb=precisionxxag|15. Combining this nitrogen availability model that measures variations across time with management zones that vary in space across fields is something that some NY farmers are currently experimenting with in order to improve their precision management. Current evaluations are also underway to calibrate variable nitrogen applications to corn based on NDVI measurements from the ground and the air in NY. While no current work in NY is exploring the interactions of variable nitrogen rates in combination with variable corn populations it will likely be a part of future on-farm experiments.

The NY Corn and Soybean Growers Association is currently in their third year of evaluating varying corn and soybean population rates. Any farmer interested in participating should contact Savanna Crossman at savannacrossman@hotmail.com or 802-393-0709.

Varying Down Force

Soil moisture conditions can vary widely from within a field and between fields during planting. The days are long and getting off the tractor to make the manual adjustments (higher pressure in dry conditions & lower in wet conditions) to the planter ensure a constant planting depth without side-wall compaction is not practical. Using variable rate down force pressure can ensure constant ground contact and ultimately increase yields, *Table 1.*

Additionally using a hydraulic system responds much faster (~1 second) compared to an air bag system (up to ~20 seconds) and yield will be left on the table if down force doesn't quickly respond to changes in soil moisture conditions.

Figure 3: Corn Leaf Architecture
Source: http://www.agweb.com/article/narrow_rows_fixate_on_structure_and_population/

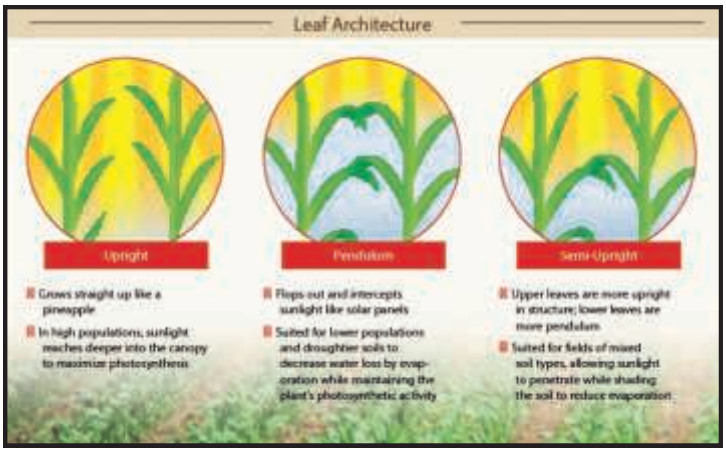


***Table 1*: Corn Yield Response to Variable or Fixed Rate Down Force Pressure**
Source: Beck's Hybrid PFR Summary 2014

Down Force	Down Force Pressure Setting	Corn Yield (bu/acre)	Years Tested
DeltaForce Variable Rate	Standard Setting	**+9.4**	2013-2014
DeltaForce	0 lb. Manual	**-16.3**	2013-2014
DeltaForce	125 lb. Manual	**-8.4**	2013-2014
DeltaForce	250 lb. Manual	**-5.8**	2013-2014
DeltaForce	375 lb. Manual	**-7.1**	2013-2014
AirForce Variable Rate	Standard Setting	**+7.8**	2009-2014
T-Spring	0 lb. Manual	**-11.2**	2009-2014
T-Spring	125 lb. Manual	**-4.4**	2009-2014
T-Spring	250 lb. Manual	**-5.9**	2009-2014
T-Spring	375 lb. Manual	**-9.5**	2009-2014

Pop-Up & Starter Fertilizers in Corn & Soybeans

By: Bill Verbeten

In NWNY, farmers are moving away from broadcasting fertilizers in an attempt to increase corn & soybean yields, increase earlier season growth to better compete with weeds, insects, & disease, and possibly shorten days to maturity by maximizing the fertilizer placed with the seed as pop-up and starter fertilizers. Too much fertilizer will cause damage to the seeds because of salt competing with the seed for moisture. Too little fertilizer will not show a response compared to broadcasting. Yield responses to these fertilizer placement methods are very dependent on soil test levels, tillage systems, and weather. This article discusses the maximum amounts of fertilizer that can be applied in pop-up and starter fertilizers. Many situations on-farm will require LESS FERTILIZER than what is discussed here. Regular soil and tissue testing are necessary to determine what the specific crops needs are for each field.

Pop-Up Fertilizers

Fertilizer salts compete with corn and soybeans seedlings for water when placed as a pop-up. Nitrogen and potassium (K2O) fertilizers are the strongest salts, and their combined application amounts need to remain small to avoid salt injury. Dry conditions and sandy soils are more likely to have salt damage to seeds than wet conditions and clay soils. Reduce the nitrogen + K2O rates by half if growing corn and soybeans on sandy soils or if there is below normal rainfall at the time of planting. Additionally no urea, UAN, or ammonium thiosulfate should be used as a pop-up. Phosphorus (P2O5) fertilizers have a lower salt index on average (18.8) than nitrogen (78.3), potassium (58.0), and sulfur (50.5), *p. 381 Soil Fertility & Fertilizers 7th Ed.,* fertilizers. Salt index is a measure of how strongly the fertilizer will affect moisture available to the crop (higher number = more drying effect). Ammonium sulfate (24% S), gypsum (18% S), or potassium sulfate (17% S) should be used for pop-up sulfur applications.

For the rest of the article go to: http://www.nwnyteam.org/submission.php?id=72&crumb=grains|3.

Cooperative Extension Association of Livingston
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Save the Date...

13 ***Webinar: Storing & Preserving Next Year's Silage,*** 1:00 - 2:00 p.m. See page 9 for more details.

14 ***Webinar: Technology Tuesday Webinar Series: Restraint & Handling of Dairy Cattle,*** 8:30 a.m. - 10:30 a.m. See page 9 for more details.

14 ***Dairy Skills Training - Managing Transition Cows,*** 10:00 a.m. - 3:00 p.m., Dueppengiesser Dairy Co., 7835 Butler Road, Perry

18 ***Slow Poultry Workshop,*** 9:00 a.m. - 5:00 p.m., Wild Geese Farm, 8499 Agett Road, Franklinville, 14737. Pre-registration is required. Register on-line: http://www.sustainablepoultrynetwork.com/workshops-seminars. For more information contact: Lynn Bliven at 585-268-7644 x18 or lao3@cornell.edu. See page 8 for more details.

21 ***Webinar: Meeting Heifer Nutrition Goals,*** 1:00 p.m. See page 9 for more details.

28 ***Webinar: Technology Tuesday Webinar Series: Milk Quality & Robotic Milking Systems,*** 8:30 a.m. - 10:30 a.m. See page 9 for more details.

REMINDER....

This will be your **LAST** issue of Ag Focus if you haven't renewed your 2015 Ag enrollment with the NWNY Dairy, Livestock & Field Crops Program.

Contact your local CCE office to enroll today.