

Cornell Cooperative Extension

South Central NY Dairy and Field Crops Program

Dairy Digest

April 2019

You're invited... to check out our team's brand new Blog!

The SCNYDFC blog will make our articles available in a digital format that is easy to search and share. It will also feature event announcements, and success stories highlighting our team's impacts. We hope this new communication tool will better serve YOU, our current audience of farmers and industry professionals, while also making our work visible to a broader audience across the state. You can find a link to the blog in the top right corner of our website, or go directly to the following address:

<https://blogs.cornell.edu/scnydairyandfieldcrops/>

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The **South Central New York Dairy and Field Crops Program** is a Cornell Cooperative Extension partnership between Cornell University and the CCE Associations in 6 Counties.



Management and Mythology – Part I

By Timothy X. Terry, Harvest, NY

How many of you remember the Classical Mythology unit in your high school English class? Do you remember a character named Pygmalion? How about Galatea? For those of you still scratching your heads here's a quick recap: Disinterested in the immoral women of Cyprus in that day, Pygmalion carved his ideal woman out of ivory. The statue was so beautiful and realistic that he fell in love with his "ivory girl" (apologies to Procter & Gamble). One day he laid an offering at the altar of Aphrodite (goddess of love). Upon returning home he kissed the statue and the lips felt warm. He kissed her again and the statue came to life – Aphrodite had granted him his secret wish. She was later named Galatea.

So what's this have to do with management? There are two complementary phenomena in human resource management called the Pygmalion and Galatea Effects. This might make more sense as: The Power of Manager's Expectations and The Power of Self-expectations, respectively. Simply put, how you regard people and how they see themselves can make a huge difference in the success or failure of the employee AND your business.

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These effects were first identified while measuring the impact of expectations on elementary students. "If a teacher believes a child is slow, the child will come to believe that, too, and will indeed learn slowly. The lucky child who strikes a teacher as bright also picks up on that expectation and will rise to fulfill it."¹

Turns out this is just as true in the adult workplace as the elementary classroom. If a manager manages his/her crew as capable and competent they will consistently outperform a similarly talented group whose manager has a less positive regard for their staff.

Manager = Pygmalion

This phenomenon has been widely researched and documented. This *Power of Manager's Expectation* can be summarized as follows:

- "What managers expect of subordinates and the way they treat them largely determines their performance and career progress.
- A unique characteristic of superior managers is the ability to create high performance expectations that subordinates fulfill.
- Less effective managers fail to develop similar expectations, and as a consequence, the productivity of their subordinates suffers.
- Subordinates, more often than not, appear to do what they believe they are expected to do."¹

Livingston uses a real-life case study to prove these effects.

In the early 1960's a large insurance firm reorganized its sales staff reporting to one of its district offices into

high, average, and low producers, each group led by a high, average, and low performing manager, respectively.

"Shortly after this selection had been made, the people in the agency began referring to this select group as a 'super-staff' because of their high esprit de corps in operating so well as a unit. Their production efforts over the first 12 weeks far surpassed our most optimistic expectations . . . proving that groups of people of sound ability can be motivated beyond their apparently normal productive capacities when the problems created by the poor producers are eliminated from the operation."¹ (#Pareto Principle or 80/20 rule)

The average group, however, proved to be a bit of a surprise.

While they did not achieve the volume of business of the high group, their annual growth outpaced the high group. It was later determined that this was a result of the manager refusing to be classed as merely "average" and communicating the same values to her sales staff. (See bullet points 1, 2, & 4)

Moreover, it has been shown that a new employee's first manager has the greatest influence – not only their tenure with the company but their career as a whole. In a large telecommunications firm, for example, new employees were

tracked for the first year and then for the four following years. Those who worked under a good manager who helped them develop the necessary job skills performed better, had more opportunities for advancement and professional growth, and longer tenures with the company. Conversely, those newbies under managers unwilling to develop their job skills had poorer self-images, negative attitudes toward their jobs, and a higher attrition rate as they frequently left for "greener pastures" with more opportunities. I have seen this played out many times where an employee leaves a firm only to flourish at a neighboring firm or even a different enterprise within the same firm.

Granted, there may be many other factors that contribute to an employee's success or failure, including the firm's culture, their level of education, family life, and employee relationships. "However, positive supervision is one of the key factors that will keep good employees on the job."²

Employee = Galatea

Likewise, "Even more powerful than the Pygmalion effect, the Galatea effect is a compelling factor in employee performance. The manager who can assist employees to believe in themselves and in their efficacy has harnessed a powerful performance improvement tool."²

In practice you might recognize this as Self-fulfilling Prophecy. In other words, an individual's opinion of their abilities and odds of success will determine their level of performance – if they believe they can do it, they most likely will. As Zig Ziglar once said, "Your attitude, not your aptitude, will determine your altitude".

Continued on page 8



From Dreaming to Doing: 5 Tips for Beginning Farmers

Mary Kate Wheeler, Farm Business Management Specialist



The 2012 U.S. Census of Agriculture recorded an increase, for only the second time in the past 100 years, in the number of farmers under the age of 35. A 2017 National Young Farmers Coalition survey found that a majority of young farmers are college educated. Many are first-generation farmers, as three-quarters of survey respondents did not grow up on a farm.

What advice would you give to this growing group of well-educated yet relatively inexperienced women and men looking to forge their own pathways into farming? Here are my top five essentials for beginning farmers. They are also good reminders for more experienced agricultural entrepreneurs.

1. Get clear on your goals and abilities. Why do you want to farm? Are there other ways that you could achieve your goals with less risk or less effort?

For instance, if you aspire to work outdoors with plants, animals or machinery, why not get a job with an existing agricultural business? If you dream about the self-sufficiency of growing your own food and pursuing a rural lifestyle, perhaps approaching farming as hobby would be appropriate.

Can you identify a burning consumer need that your farm business is uniquely suited to fulfill? Congratulations, now you're thinking like an entrepreneur! As you develop your Big Idea, take time to create and practice an "elevator pitch" so you can explain your farm business concept in less than 60 seconds to someone who knows next to nothing about agriculture.

Before you dive into farming, reflect on what competencies you are lacking, and on how you will address those deficiencies. Working for a successful farm operation (or several) can be a wonderful way to build skills and experience, and give you a head start in your own business development.

2. Develop a business model. Once you have developed a Big Idea, you need to analyze it from all possible angles. If you will be selling any agricultural products at all – even if you plan to start at a small scale – you need to consider and plan for all the various functions of a business. The three primary functions you need to address are operations, marketing, and finance. Writing down your plan for each of these areas will help you to think critically and identify weaknesses.

Write a farm operations plan. This plan should describe your production system, including all inputs, outputs, and processes for transforming inputs into outputs. Identify your primary input suppliers, to demonstrate that a supply chain exists to support your production system. Consider transportation and storage needs. Educate yourself about local, state, and federal regulations that may affect your business, and discuss what steps you will take to comply.

Write a marketing plan. Describe your target market and their critical need that your business is uniquely positioned to meet.

This section should explain how you will approach the 4 P's of marketing – product design, placement, pricing, and promotion – to reach your specific target market. This applies regardless of whether you are selling your product to the end consumer, or to a wholesaler or other intermediary buyer.

Write a financial plan. What is the projected scale of your business in 3, 5 or 10 years? Will the business be profitable at that scale? How long will it take to make a profit, and how will you fund the startup phase? How much will you, the owner, take out of the business to support your cost of living?

3. Keep business and personal finances separate. Before you spend a penny on the farm business, open a new checking account for all of your farm transactions. To open a business checking account, you will first need to visit the county clerk's office and file a DBA form to register your business name. Having separate personal and business checking accounts will make it easier to distinguish between farm and non-farm expenses, which is critical for accurate record keeping.

4. Dream big, but also manage risk and plan for failure. Farming is an incredibly risky venture, and it takes a colossal investment of time and money to get started. Minimize your financial risk as much as possible by financing the business from savings or business earnings, rather than debt. Grow slowly. Live frugally. You may have to keep an off-farm job for years until the business is large enough and stable enough to support you.

Consider starting your business on rented land. Renting is almost always cheaper and less risky than buying. Plus, you can gain experience to know exactly what you will need if you decide to buy land in the future. Develop a sound lease agreement to protect your access to rented land and any investments you make in a rented property.

Have an exit plan from the very beginning. What happens if the business doesn't work out, or if you decide you'd rather make it a hobby? What happens if you have an unexpected medical emergency? How quickly can you liquidate your business assets, and how much are they worth?

Having a plan for your worst case scenario can help to take some of the pressure off, and reduce the stresses of navigating the risky startup stage.

5. Relationships are key. Connect with other farmers, extension agents, and agricultural service providers in your community. Building relationships with other producers, especially older generations, can be incredibly valuable and satisfying for all parties.

Ask lots of questions, not just about production, but especially about finances. Be generous in supporting other farm businesses in your community. Establishing strong ties with the agricultural community will give you access to resources for support and information. A solid social network can help you make better decisions and grow your farm business faster.*



Performance of NYS Dairy Farm Businesses in 2018—Early Results

John Hanchar and Joan Petzen, Farm Business Management, NWNY Dairy, Livestock & Field Crops Team



Please view these early results with caution -- the sample size is small at this stage of data collection, and farm size is large.

Summary

While milk sold per cow was unchanged from 2017, milk receipts net of milk marketing expenses per hundredweight (cwt.) fell 6 percent in 2018 from \$17.41 in 2017.

- In 2018, the total cost of producing a cwt. of milk was \$18.94, an increase of \$0.10 per cwt. relative to 2017.
- As of February 11, 2019, preliminary results suggest that the same 34 New York dairy farms in Cornell University Cooperative Extension's Dairy Farm Business Summary (DFBS) Program achieved lower levels of profit in 2018 compared to 2017 -- for example, for 2018, the rate of return on all assets without appreciation averaged 1.6 percent compared to 4.0 percent in 2017.

Introduction

On February 11, 2019, Jason Karszes and Wayne Knoblauch at Cornell University compiled and released early, state level 2018 DFBS results. The results reported here represent averages for the same 34 New York dairy farms cooperating in 2017 and 2018.

Rates of Production

- Milk sold per cow averaged 25,801 pounds in 2018 compared to 25,815 in 2017.
- Hay dry matter per acre fell from 3.6 to 3.4 tons, while corn silage per acre was unchanged at 18.8 tons.

Income Generation

- Milk receipts net of milk marketing expenses per hundredweight (cwt.) decreased from \$17.41 to \$16.28.

- Milk receipts net of milk marketing expenses per cow fell from \$4,494 in 2017 to \$4,200 in 2018, a decline of 6.5 percent.

Cost Control

- Dairy feed and crop expense per cwt. of milk increased from \$7.12 in 2017 to \$7.26 in 2018, an increase of 2 percent.
- In 2018, total cost of producing a cwt. of milk was \$18.94, an increase of 0.5 percent relative to 2017.

Profitability

- Net farm income without appreciation per cwt. of milk averaged \$0.65 in 2018, a decrease of about 66 percent compared to 2017.
- Rate of return on equity capital without appreciation fell from 4 percent in 2017 to 0 percent in 2018.
- In 2018, the rate of return on all assets without appreciation was 1.6 percent, a decline of 59 percent relative to 2017.

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 us – for contact information, please see information at the front of this newsletter. Articles in recent issues of Ag Focus reviewed the topic of farm business summary and analysis. If you are interested in improving your farm business' ability to practice sound financial management, then please contact Mary Kate Wheeler to learn more about some of the tools available and their value.*

First Cutting Updates – Coming to a Field Near You Soon!

The SCNY team is going to monitor alfalfa heights again this spring to help predict quality and %NDF. Alfalfa height has been proven to be a reliable indicator of NDF values in the field for alfalfa, alfalfa/grass mixed and all grass stands. The team wants to identify fields that can be measured on a weekly basis. If you have fields that we can come out and measure, please let Janice or Betsy know! Results will be compiled on a weekly basis – to receive weekly email/text updates, please contact us at 607.391.2673 with your email address/cell phone number.

The numbers that are indicators for using alfalfa heights for NDF content are as follows:

- 100% grass stands should be cut when nearby alfalfa is 14 inches tall, to achieve 50% NDF
- Begin cutting 50/50 mixed alfalfa/grass stands when nearby alfalfa is 22 inches tall, to achieve 44% NDF
- Begin cutting 100% alfalfa stands when alfalfa is 28 inches tall, to achieve 40% NDF



Predicted days to cut are based on daily NDF increases for grasses of 1.0% point, 50/50 mixed alfalfa/grass stands of 0.8% points, and alfalfa of 0.5% points. Predictions are adjusted for the coming week's weather.

Typically NDF increases about 0.8 to 1.2 per day for grasses, with cooler weather being the lower end of the range and warmer weather being the higher end. For alfalfa, NDF increases about 0.4 to 0.7 per day, also dependent upon warm/cool weather. The weekly email features a table of the locations in the region where alfalfa heights are measured, including elevation, and target date for harvest. Even if your fields aren't measured, you can use the location and elevation as a guide to conditions that may be similar to your own. *



Risk Management Options for Dairies – An Update for 2019

By Joan Sinclair Petzen, Farm Business Management, NWN Dairy, Livestock & Field Crops Team



Risk management options for dairy farms continue to evolve to reflect the needs of farm businesses. At present, there are three primary risk management tools dairy managers can consider. Using these tools can protect businesses from the ups and downs in the prices of milk and feed. Livestock Gross Margin Insurance Dairy Cattle, commonly known as LGM-Dairy, has been around for a number of years to help producers protect the margin between the price of milk and feed. Dairy Revenue Protection, Dairy-RP, a new insurance product, provides protection for unexpected drops in the quarterly milk revenue. The Dairy Margin Coverage Program (DMC), the successor to the Margin Protection Program (MPP), provides protection when the national average dairy margin falls below a selected coverage level.

LGM-Dairy provides protection when the actual margin between milk and feed (corn and soybean) futures falls below a guaranteed margin, on the date the coverage was purchased less a deductible chosen by the producer. "LGM-Dairy uses futures prices for corn, soybean meal, and milk to determine the expected gross margin and the actual gross margin." This product is purchased through a crop insurance agent. New with the recent passage of the farm bill, producers who participate in DCM can also purchase LGM-Dairy coverage and producers who used LGM-Dairy in 2018 will be able to retroactively sign-up for 2018 MPP. There are twelve opportunities to purchase coverage each year and each time coverage can be chosen for up to 11 months in the future.

Dairy-RP was announced in the fall of 2018. Coverage is for unexpected declines in quarterly milk revenue from what was expected when coverage is purchased. Producers have the option of selecting revenue protection based upon either Class III and Class IV prices or component prices. Coverage can be purchased for between 70 and 95 percent of expected revenue in 5 percent increments for any quarter. Premiums subsidy drops from 59% to 44% as the share of revenue covered increased. Once a policy is established with a crop insurance agent, quarterly endorsements can be added on any day the USDA Risk Management Agency publishes prices and validates rates, for up to five nearby quarters. Multiple endorsements can be added for any given quarter.

DCM replaces MPP for 2019. DCM offers expanded margin triggers from \$4.00 to \$9.50 per cwt on the first 5 million pounds. \$8.50, \$9.00 and \$9.50 margin coverage is not available above 5 million pounds. Producers of over 5 million pounds can elect to cover their production over 5 million pounds at different margin than their first 5 million pounds. It also provides greater flexibility in the share of the producer's production history they can choose to cover. A producer can choose to cover between 5% and 95% of their production history. The January 2019 margin was announced at \$7.99. With signups projected to begin in June 2019, producers will have the advantage of knowing announced margins for up to 5 months of 2019 before sign-up. Producers will also have the opportunity, at signup, to choose whether they want to sign up only for the current year or for a five year period. A discount

in premium of 25% will be offered to those who choose to sign up for the 5-year duration of the program.

Take some time and learn about these options. The Cornell Crop Insurance Education Program has just released a fact sheet describing the similarities and differences between these risk management options: Cornell 2019 Dairy Risk Management Fact Sheet available at: <https://bit.ly/2JfXtBA>. Take some time to review it. Pro-Dairy recently produced a "Focus on Risk Management for Dairy Farmers" webinar that you can view here: <https://prodairy.cals.cornell.edu/webinars/>. Farm Credit East also shared a webinar on Dairy Revenue Protection at: <https://www.farmcrediteast.com/knowledge-exchange/Webinars>.

Drs. Andrew Novakovic and Mark Stephenson released a briefing paper on DMC in December that you can access at: <https://bit.ly/2BfM9y6>. In the coming weeks keep an eye out for webinars on the DMC Program as signup details are released. Become informed about these risk management tools and protect your business.*

DAIRY RISK MANAGEMENT 2019 Crop Year, New York			
Program	Livestock Gross Margin Insurance Dairy Cattle (LGM-Dairy)	Dairy Margin Coverage Program (DMC) (Formerly MPP)	Dairy Revenue Protection (Dairy-RP)
You Are Covered For	-Increased feed cost -Decreased milk prices	-Increased feed cost -Decreased milk prices	-Decrease in milk revenue due to decreased milk prices or production
You Are NOT Covered For	-Dairy cattle death -Unexpected decreases in milk production -Unexpected increases in feed use -Anticipated or multiple-year declines in milk prices -Anticipated or multiple-year increases in feed costs	-Dairy cattle death -Unexpected decreases in milk production -Unexpected increases in feed use -Anticipated or multiple-year declines in milk prices -Anticipated or multiple-year increases in feed costs	-Increased feed cost -Production decrease -Unexpected decrease in state milk yield -Dairy cattle death -Other loss or damage of any kind
You Select	-Percent of production you want covered (0-100%) -Length of coverage (2-10 months) -Deductible (\$0-\$2 per cwt, available in \$0.10 increments)	-If opting for premium coverage: -Percent of production you want covered (0-95%) -Guaranteed margin (\$4.00-\$9.50 per cwt, available in \$0.50 increments)	-Revenue pricing option: The class pricing combination of Class III & IV or component pricing (butterfat and protein test levels) -Total milk production protected -Coverage level (70-95%) -Protection factor (100-100%)
Eligibility	Can be combined with DMC	Can be combined with LGM-Dairy	Cannot be combined with LGM-Dairy in the same quarter, can be used with DMC
Enrollment	Monthly, can enroll for 2-10 months	Life of current farm bill with annual coverage decision; 25% discount on annual premium for 5-year commitment	Quarterly (3 months), up to 15 months out
Coverage Limits	Up to 100% of your monthly production with maximum of 240,000 cwt per year	Tier 1 premium pricing applies to first 50,000 cwt; Tier 2 premium pricing applies to additional production	There is no limit on how much milk can be insured, but milk marketings must be at least 85% of covered production
Payment Triggers	Actual margin minus deductible is less than the guaranteed margin ¹	Actual margin for a 1-month period is less than the covered level ²	Quarterly declines revenues due to decline in price milk or component or production indexes
Basis Risk	Difference between your prices/costs and CME milk prices, CBOI feed prices	Difference between your price/cost and US All Milk Price, weighted feed costs for corn, soybean and alfalfa (as reported by NASS and AMS)	Difference between your prices and CME prices for Class III & Class IV milk or CME-implied component prices; Difference between your production and state-indexed milk production
Deadline	Last business Friday of each month	Sign-up period expected to open on June 17 for 90 days	Sales for a quarter end 15 days before the beginning of the quarter
Coverage Offered By	Insurance agents working with a RMA Approved Insurance Provider (AIP)	Farm Service Agency (FSA)	Insurance agents working with a RMA Approved Insurance Provider (AIP)

DAIRY RISK MANAGEMENT 2019 Crop Year, New York

1-Catastrophic coverage is available to all enrollees who have paid their \$100 administrative fee and covers 80 margins at 90% of expected production.
2-Approximately 1,000-1,200 cows
3-Approximately 250-300 cows
4-Actual gross margin is calculated from Chicago Mercantile Exchange Group futures contract daily settlement prices, not the prices you receive at the market.
5-Actual margins are the difference between the national all milk price and the national average feed cost, as estimated from prices reported by the National Agricultural Statistics Service (NASS) and the Agricultural Marketing Service (AMS).

Livestock Gross Margin Insurance Dairy Cattle (LGM-Dairy)
LGM-Dairy protects producers when the actual dairy margin (milk price - feed cost) falls below the expected margin. Futures market feed and milk prices are used to determine the expected and actual gross margin. Producers do not choose the margin that is guaranteed by the policy.

Dairy Margin Coverage Program (DMC)
DMC is the successor to the Margin Protection Program (MPP). This program makes payments when the national average dairy margin (futures market milk price - futures market feed cost) falls below the guaranteed margin. Unlike LGM-Dairy, the producer is able to decide the margin that is guaranteed (\$4/cwt-\$9.50/cwt). Producers opting for a 5-year commitment will receive a 25% premium discount. Producers who enrolled in LGM-Dairy in 2018 may enroll in 2018 MPP retroactively.

Dairy Revenue Protection (Dairy-RP)
Dairy-RP protects producers against unexpected drops in quarterly revenue from milk sales. The producer can choose the value of the insured milk based on either a combination of Class III and IV milk prices, or a price based on their butterfat and protein test values. A "Protection Factor" can be applied to increase the value of the insured milk. Payouts are based on futures market prices and state or regional-level (state-level in NY) production, as reported by USDA-NASS.

Contact FSA to Learn More (DMC)
Find your nearest FSA office at <https://www.fsa.usda.gov/>

Find an Agent (LGM-Dairy and Dairy-RP)
Ask a neighbor for a recommendation or use the Agent Locator tool at <http://bit.ly/2w9PvYy>

Learn More

Find crop insurance information at <https://dairymanagement.cornell.edu>

Cornell University delivers crop insurance education in New York State in partnership with the USDA Risk Management Agency. Diversity and inclusion are a part of Cornell University's heritage. We are an employer and educator recognized for raising AAASO. Protected Veterans and Individuals with Disabilities.





What's New in Agronomic Weed Control 2019

By: Dwight Lingenfelter, Extension Associate, Weed Science, Penn State



New herbicide products and industry news about weed management are highlighted in this article

Product/Label Updates

As in the recent past, there are absolutely no new herbicide modes of action. All the newer herbicide products are simply new premixes or revised formulations of existing active ingredients.

Corn

Coyote 3.67SE (mesotrione [Callisto] + s-metolachlor [Dual II Magnum]; groups 27 and 15 herbicides; UPL) and **Harness MAX 3.82SE** (mesotrione [Callisto] + acetochlor [Harness]; groups 27 and 15 herbicides; Monsanto) are comparable product premixes and will serve a similar utility. These will primarily be used post in field corn to provide some foliar and extended residual activity on annual broadleaves, especially for weeds like Palmer amaranth and waterhemp, and some residual activity on annual grasses. Neither of these are effective on existing grasses, so they will likely be tank-mixed with glyphosate or other effective herbicides.

Shieldex 3.33SC (tolpyralate; group 27; SummitAgro) is a new, low use rate (1 to 1.35 fl oz/A), HPPD-herbicide that controls annual grasses and broadleaves postemergence in field and sweet corn. It is very similar to Armezon or Impact. (Registration pending in NY)
Soybean

Flumioxazin (Valor) is a popular active ingredient in many soybean herbicides today. It will also be in three newer products, **Panther Pro**, and **Valor EZ**, which are available.

Panther Pro 4.23L (flumioxazin [Valor], imazethapyr [Pursuit], and metribuzin; groups 14, 2, and 5; Nufarm) also is a pre herbicide premix that controls many different types of annuals.

Valor EZ 4SC (flumioxazin [Valor]; group 14; Valent) is a new liquid formulation of flumioxazin and will have the same utility as the dry form and primarily controls broadleaf weeds including marehail and Palmer amaranth.

Corn and Soybean

EverpreX 7.62E (s-metolachlor [Dual Magnum]; group 15; Corteva) is a single active ingredient of s-metolachlor and will likely be tank-mixed with glyphosate and other herbicides for residual control of Palmer amaranth, waterhemp, and several other weeds in conventional or Xtend soybeans. It can also be used in corn and several other crops.

Gramoxone Magnum 3.33EW (paraquat [Gramoxone] + s-metolachlor [Dual Magnum]; groups 22 and 15; Syngenta) provides burndown of many weeds and residual control of annual grasses, some small-seeded broadleaves, and nutsedge. It can be used in soybean, corn, and other crops. (This formulation does not contain the corn safener for Dual.) It is expected to be available for the 2019 growing season.

Discontinued herbicide products

Corteva will no longer manufacture herbicides in the **Breakfree** and **Cinch** lineups as well as **Hornet**,



New herbicide programs are being evaluated in a soybean field at the Penn State Agronomy Research Farm (D. Lingenfelter, Penn State Extension)

Instigate, and **Prequel**. Syngenta has discontinued **Beacon** and **Spirit**. And finally, BASF will no longer carry **Extreme**.

Soybean Technologies Updates

Roundup Ready 2 Xtend soybean

The EPA has re-registered the Xtend-specific dicamba products until Dec. 2020. **Engenia 5L** ([dicamba-BAPMA salt](#); BASF), **Xtendimax 2.9L** ([dicamba-DGA with Vapor Grip Technology](#); Bayer) and **FeXapan 2.9L** ([dicamba-DGA plus Vapor Grip Technology](#); Corteva) are currently the only three dicamba herbicides that can be used in Roundup Ready 2 Xtend (dicamba-tolerant) soybeans. Each of them contain the group 4 herbicide dicamba and are now classified as "Restricted Use Pesticide" (RUP) and thus require special dicamba-specific training annually to purchase and apply them. In addition to the existing label guidelines, some additional label changes have been made for 2019.

Engenia Pro 4.5SC (dicamba + pyroxasulfone [Zidua]; groups 4 and 15; BASF) and **Tavium 3.39CS** (dicamba + s-metolachlor [Dual Magnum]; groups 4 and 15; Syngenta) are experimental premixes and will provide post broadleaf control from dicamba and residual annual grass and broadleaf control from Dual/Zidua in Xtend soybeans. Their prime targets will be Palmer amaranth and waterhemp. These may receive registration for use in 2019.

Xtend soybean acres: During the 2018 growing season, there were approximately 90 million acres of total soybeans planted in the US.; about 40 million or so acres were Xtend. In some areas of the country up to 75% of the soybean areas were planted to an Xtend variety. The exact amount of acres that actually applied either a pre or post application of dicamba is not known, however in most areas it was a rather large percentage. Expectations for the 2019 growing season are that the acres of Xtend soybeans will continue to expand to

about 50 million acres across the country. However, some have decided not to grow Xtend soybeans for various reasons and have opted to stay with typical Roundup Ready varieties, other may plant LibertyLink lines that allow for better post control of marestail and Palmer, and finally some may even try non-GMO lines since they can usually get a price premium.

Incoming soybean technologies

The next generation of Xtend technology is referred to as **HT3 soybeans** which will be resistant to dicamba, glyphosate, and glufosinate (Liberty). These varieties, which will be a part of the XtendFlex brand, are not yet registered but are expected to be launched in 2020.

LibertyLink soybeans have been registered for several years and more varieties are available. **LibertyLink GT27 soybean** is the next generation of stacked trait varieties that are resistant to glufosinate, glyphosate, and isoxaflutole, an HPPD herbicide which will be called **Alite27** (like Balance herbicide). These soybeans should be available in 2020.

Enlist soybeans (2,4-D tolerant) was recently approved for export to China, however not yet to the EU. It is not known yet if Enlist soybeans will be available for the 2019 growing season. But since this is an ever-changing process, things could happen at any time.

Industry News

Over the past few years there has been some changes in the agrochemical industry. Companies have either bought or merged with others or have acquired some products from others.

Bayer is the official name of the union between Bayer and

Monsanto. But for Bayer to acquire Monsanto it had to divest some of its assets.

BASF which never dealt in the seed business, purchased the Liberty Link soybean and cotton seed division and glufosinate herbicide (or Liberty) and GT27 trait (formerly Balance GT) from Bayer.

Corteva is the name of the new pure agricultural subsidiary of DowDupont that has a comprehensive portfolio of seed and agrochemical products. During the merger, Dupont had to relinquish some of its small grain pesticides.

FMC now has the rights to those old Dupont products such as Harmony and Harmony Extra and others. In addition, FMC bought Cheminova a few years ago which was a company that manufactured many off patent or generic pesticides, so now FMC has a rather large portfolio of products to sell.

Syngenta was purchased a few years ago by ChemChina. In general, Syngenta still operates similarly to the way it did before they were purchased.

Valent, a subsidiary of Sumitomo Chemical company, is the other major manufacturer that develops and manufactures agrochemicals.

For the time being, it looks like there will be about six major agrochemical manufacturers plus many other smaller companies that produce off patent agrochemicals. There are over 20 other companies that produce and sell pesticides in the United States. Many are reputable companies that offer quality generic or off patent products but there can also be some that are of poor quality. As with any purchase, it's buyer beware.*



Wheat Stand Assessment

Check on the effects of late planting and/or winter weather.

John Rowehl, Former Educator, Pennsylvania State University



Some wheat fields get planted late every year and adequate plant population and fall tillering may not have been achieved. As winter grains are greening up growers are able to see the actual amount of survival that they got out of these fields that are in question. There are some guidelines for stand assessment that growers can use to determine between keeping the field as it is or if replanting with a spring crop would be better. Because small grains can compensate well for reduced stands, some reduction in plant population is acceptable.

First determine the number of plants per square foot as follows. Take a yardstick or any three-foot long stick and lay it along a row. Count the number of plants in the three-

Plants/ sq ft	Yield Potential (%)
30-35	100
22-28	100
18-21	90-95
15-18	75-80
12-14	60-70

foot length. Repeat this at several random locations that represent the field condition and determine the average. Multiply this number by 4 and then divide by the number that is your row width. For example, 40 plants (per 3 ft), $40 \times 4 / 7 = 23$ plants per square foot. Twenty to thirty (20-30) plants per square foot is less than 12-14, consider replanting to another crop.

Determining the number of tillers can also be helpful. Tillers are secondary stems that branch out from the base of the main stem. Knowing the number of tillers can provide a guideline for timing nitrogen application as described below. Count the number of tillers (including main stems) from three feet of row (also at several random locations) and do the same calculation.



Figure 1. Checking wheat plant populations

Less than 60-70 tillers per square foot is considered low. In a case like this, our recommendation is that some of or all of the spring nitrogen be applied at early green-up to try to get more tillers formed. If there are 70-90 tillers per sq. ft., it is not as critical to get nitrogen on and it can be delayed until just before the stems begin to elongate (growth stage 5). With even higher tiller counts, also delay top-dress until stage 5, as the nitrogen demand of the plant begins then. However, topdressing after stem elongation has advanced much beyond this can reduce yield.*



Take the Guesswork Out of Spraying With These Apps

Zachary Larson, Field and Forage Crops Educator, PennState Extension



There are a handful of smartphone and tablet applications that can help navigate through some of the challenges of spraying.

When it comes to applying pesticides a lot can go wrong. Aside from accidents and equipment malfunctions, improper calibration, incorrect nozzle selection or math errors at mixing and loading can result in poor pest control, crop injury from over application or wasted product and money. Fortunately, there are a handful of smartphone and tablet applications that can help navigate through some of the challenges of spraying.

In all the products I've used in Table 1 I never found a one-size-fits-all app; you must be willing to have a few that do the same function or pick one that fits 90% of your needs. In general I recommend downloading a few apps that do the same function and spend a few minutes playing around with each one to see what is most intuitive to you. Many of these apps are ones that you will use for only a few months out of the year, which is why I avoid apps that require a login, as inevitably you will become logged out and forget your password, or apps that take a lot of time to master. Assume that you will have to re-learn them every year, because that is what will likely happen each spring.

Apps for Calibration and Nozzle Selection

Calibration apps take a lot of the confusion out of readying your sprayer every spring. Clemson's Calibrate My Sprayer and the University of Illinois' Sprayer Calibration Calculator allow you to enter target speed, nozzle spacing and application rate to determine the amount to catch for a given sampling period. The Sprayer Calibration Calculator also gives guidance for adjusting sprayer pressure to reach desired rates. The Ag Tools app features a calibration tool out of its list of farm-handly apps and uses inputs of distance traveled, time traveled and output to calculate application rates.

If you're looking for a new set of nozzles there are a variety of manufacturer-specific apps to ensure that you're picking the best one for the job. Most use the same inputs of application rate, speed, and desired droplet size and pattern to pick nozzles, so choose apps based on your supplier. TeeJet's SpraySelect, Greenleaf's NozzleCalc, HyPro's SprayIt (AgPhD's SprayTipsGuide also recommends HyPro nozzles), John Deere's Nozzle Select, Wilger's TipWizard and Hardi Nozzles all do similar tasks, with a few even allowing you to select nozzles based on common pesticides.

Apps for Mixing and Loading

A handful of apps are also available for calculating the correct amounts of spray solution volume and pesticide rates for a given acreage. Syngenta's TankCalc US and DuPont's TankMix feature simple calculators that determine product amounts, gallons of spray solution in a tank and overall product needs for a given area, with TankCalc providing nozzle recommendations. Clemson's Mix My Sprayer performs similar tasks although only based rates of product per tank size. FarmLogic's Tank Mix Calculator is the most fully-featured of the bunch as it allows you to select products from a database for quicker reference and those products are carried

over to individual mix lists based on full or partial loads. A more unique app is FS GROWMARK's FS Adjuvant Selector, which recommends spray adjuvants based on a list of given herbicides. The app also gives rainfast times for many herbicides.

Other Interesting Apps

When selecting products for resistance management there are a few apps out there to help. The HRAC, FRAC and IRAC MoA apps provide modes of action lists the appropriate codes and chemical families of herbicides, fungicides and insecticides respectively. The WSSA's Take Action App is unique as it profiles common herbicide resistant weeds such as marehail and Palmer amaranth in addition to providing herbicide modes of action. The AgPhD's Modes of Action is another unique app as it puts herbicide, insecticide and fungicide modes of action all in one place.

Although there are many different weather apps out there, Monsanto's RRXtend Spray highlights important weather information for spray application decision making including relative humidity, wind speed, and inversion risk, all intended to show drift risk for dicamba products like Engenia or Xtendimax. There is a recordkeeping section as well as up to date information on the Xtendimax label as well. If you are looking for pesticide labels, the Agrain Mobile app is a database of products and allows you to reference most label material or pdfs of the actual labels. Finally, the Univ. of Missouri's Herbicide Injury app allows you to diagnose herbicide injury by symptom or look at injury photos of given herbicides. Although it will cost you 99 cents, it is one of the more unique products out there. Of course what's featured here are only some of the tools out there to help growers, as there are many apps that can help with pest id and other problems.

With a few of these apps on your phone or tablet, you should be able to quickly work through some common spraying hang-ups. By making sure that your sprayer is properly calibrated and the correct amounts of products are in the tank you can breathe easier knowing that you have one less thing to worry about. *

See Table 1 page 9

"Management", Continued from page 2

Next Month: I'll give you some ideas for cultivating that Galatea effect.

¹J. Sterling Livingston, "Pygmalion in Management", *Harvard Business Review* (January 2003), <https://hbr.org/2003/01/pygmalion-in-management>

²Susan M. Heathfield, "The 2 Most important Management Secrets: Pygmalion and Galatea Effects", *The BalanceCareers* (July 2018), <https://www.thebalancecareers.com/pygmalion-and-galatea-effects-1918677>

Table 1. A list of available spraying related applications. Most can be found by searching their respective names in the iTunes or Google Play stores. iPhone apps can be run on an iPad, they are just not optimized for the larger screen.

Sprayer Calibration	Company/Organization	iPhone	iPad	Android
Calibrate My Sprayer	Clemson University	X	X	x
Sprayer Calibration Calculator	Univ. of Illinois	x	x	x
Ag Tools	Noble Research Institute	x	x	x
Nozzle Selection				
Spray Tips Guide	AgPhD/Hydro	x	x	x
SpraySelect	TeeJet	x	x	
NozzleCalc	GreenLeaf	x	x	x
Spray It	Hypro	x		x
Nozzle Select	John Deere	x	x	x
Hardi Nozzles (IOS)	Hardi	x		x
Hardi (Android)				
Tip Wizard	Wilger	x	x	x
Mixing and Loading				
TankCalc US	Syngenta	x		
TankMic	DuPont	x		
Tank Mix Calculator	FarmLogic	x	x	x
Mix My Sprayer	Clemson University	x	x	x
FS Adjuvant Selector	GROWMARK	x	x	x
Others				
Modes of Action	AgPhD	x	x	x
Take Action on Weeds	United Soybean Board/Weed Science Society of America	x	x	x
HRAC	Herbicide Resistance Action Committee	x	x	x
IRAC MoA	Insecticide Resistance Action Committee	x	x	x
FRAC MoA	Fungicide Resistance Action Committee	x	x	x
Agrain Mobile	Agrain	x	x	
Herbicide Injury	Univ. of Missouri	x	x	x
RRXtend Spray	Monsanto	x	x	x

URGENT! Hearing Scheduled on Farm Labor Legislation

A Senate hearing is scheduled to hear from farmers and farmworkers about the impacts of the Farmworkers Fair Labor Practices Act (S.2837). Senate Agriculture Committee Chair Jen Metzger (SD-42) and Senate Labor Chair Jessica Ramos (SD-3) will hold a hearing in Morrisville to hear public testimony, and NYFB members are encouraged to attend, testify and bring farmworkers as well who understand the implications of the proposed legislation. You can read details in Announcements on our webpage: <https://scnydfc.cce.cornell.edu/>.

Hearings are free and open to the public, but you must register to testify. After you register, please also inform New York Farm Bureau's Public Policy Director, Jeff Williams, at jwilliams@nyfb.org about your plans to testify. NYFB can provide you materials that may help you prepare for the event.

The hearing schedule is as follows:
April 25, 2019 11:00 a.m. - 3:00 p.m.
SUNY Morrisville
9 Skyline Drive Morrisville, NY 13408



Those who would like to attend and/or testify at the Morrisville hearings are asked to register at:
bumpus@nyenate.gov
or by calling 315-478-8745



Rye Cover Crop Termination

By: Mike Hunter, Regional Field Crop Specialist



The early, rapid growth of winter rye in the springtime can be challenging to manage before planting corn. There are different methods of terminating the rye cover crop. It can be killed 2 or more weeks before no-till crop establishment, incorporated by tillage, or harvested for forage.

Tilling rye when it is less than 12 inches tall is a good way to terminate the stand. Plowing or disking rye after it is over 20 inches tall ties up soil nitrogen, takes moisture from the soil and is sometimes difficult to incorporate into the soil.

Herbicides are often used terminate rye prior to planting no-till corn. Many corn growers are concerned about the allelopathic effect of the killed cereal rye on the corn crop. Allelopathy is defined as the release of chemicals by one plant that inhibits the growth of adjacent plants. Research suggests that it does not have much effect on corn due to its seed size and planting depth. If there are any concerns about the potential negative impact on corn, kill the rye 10 to 14 days before planting, at planting or within 5 days after planting corn.

In no-till corn, glyphosate is the preferred product of choice for burning down cereal rye. Gramoxone SL 2.0, paraquat, can also be used to burndown cereal rye before planting corn. Remember, paraquat is a non-selective, contact herbicide and will require good spray coverage for optimum control of the rye. Glyphosate is a translocated, non-selective herbicide that is less dependent on spray coverage. Air temperature before, during and after glyphosate application can also influence control. Cold nights (<40°F) will reduce glyphosate activity, especially when followed by cool (<55°F) days. Cool weather (below 55°F) will slow the activity of Gramoxone SL 2.0, as will cloudy, overcast weather, but will not affect performance.

The glyphosate rate will depend on the stage of growth of the rye at the time of application. However, in most cases it is only necessary to use the .75 acid equivalent rate of glyphosate. Glyphosate formulations will contain 3 to 5 pounds acid

equivalent per gallon. The acid equivalent amount is found on the label by the ingredient statement section. Depending on the formulation you choose, the rate will be between 19 and 32 ounces per acre. With glyphosate, include appropriate adjuvants (if required) plus spray grade ammonium sulfate (AMS) at 8.5 to 17 lbs/100 gallons of water.

Gramoxone SL 2.0 applied at 3 to 4 pints per acre and works well on smaller rye before it reaches the boot stage. Add a nonionic surfactant to the spray tank to enhance penetration and total kill. If you will be planting corn and choose to use Gramoxone SL 2.0, consider adding 1 quart of atrazine per acre to improve control of the rye. In 2009, research by Bill Curran at Penn State University, found that the additional of 1 quart of atrazine per acre, when used with Gramoxone, provided 99% control of 8-10 inch tall rye. Only 70% control of the rye was achieved when Gramoxone was used alone in this study.

The EPA has recently made changes to the paraquat labels requiring paraquat specific training and restricting the use of paraquat to certified applicators only. Any applicator that will be applying Gramoxone SL 2.0 or a generic paraquat this season must review the new paraquat applicator requirements to make sure they are in compliance. If an applicator is using a paraquat herbicide with the new, updated label they must complete a mandatory training program once every three years. If the current label of the paraquat product being used does not have this requirement, training will not be required. For more information about the new paraquat applicator training visit <https://www.epa.gov/pesticide-worker-safety/paraquat-dichloride-training-certified-applicators>

Every grower with crop insurance must follow the Natural Resources Conservation Service's cover crop termination guidelines. Growers are encouraged to contact their insurance agent if there is any question regarding the cover crop termination requirements prior to planting corn or soybeans. *

We are pleased to provide you with this information as part of the Cornell Cooperative Extension Dairy and Field Crops Program serving Broome, Cortland, Chemung, Onondaga, Tioga and Tompkins Counties. **Anytime we may be of assistance to you, please do not hesitate to contact us.** Visit our website: <http://scnydfc.cce.cornell.edu> and like us on Facebook: <https://www.facebook.com/SCNYDairyandFieldCropsTeam>.

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Cover Crop Growth—How Much is Beneficial?

By: Janice Degni, Regional Field Crop Specialist



The benefits of cover crops are pretty familiar. In the act of protecting bare soil they reduce wind and water erosion, suppress weeds, reduce nutrient leaching, restore soil organic

matter and contribute to improved soil health.

A question that I get asked frequently after a late fall planting is did I get enough benefit from the growth I had. How much cover is enough? This winter my colleague, Dr. Kitty O'Neil, Extension field crops

specialist with the North Country Regional Ag Team, presented research data at the Tompkins County Ag Summit meeting that gave hard numbers to help answer that question.

When we look at our cover crop how do we assess the yield? The pictures that follow can help to gauge an eyeball estimate. The graph titled Spring growth is rapid shows how quickly biomass can accumulate once the weather warms up.

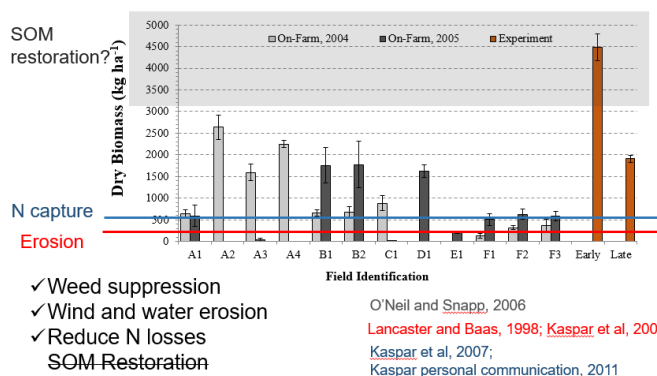
Less than 50 lbs/acre



About 250 lbs/acre

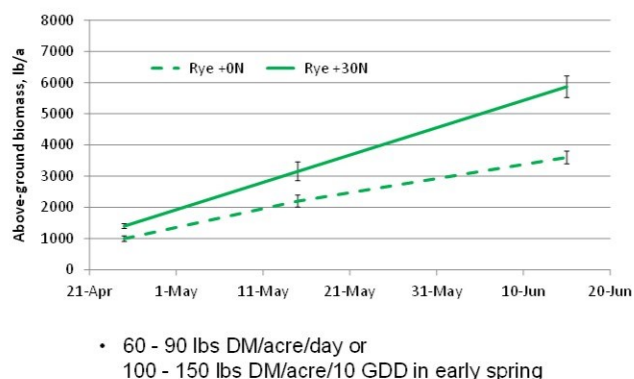


How much cover crop biomass is enough to reduce erosion, capture nutrients and restore soil OM?



Dr. O'Neil reported in her thesis research that, "Erosion may be significantly reduced with very little plant biomass. California researchers concluded that 17.5% vegetative cover was sufficient to reduce wind erosion of a sandy soil by 95% compared to a bare soil. In Iowa, researchers significantly reduced erosion with only 220 lbs/ac of above ground small grain cover crop biomass. USDA scientists are now recommending that growers target 500 lbs/ac of above-ground cover crop biomass as a reasonably achievable minimum to safely provide positive nutrient loss and erosion benefits. To replace this large quantity of soil carbon per year, plant residue inputs of 1000 to 2000 lbs/ac or more would likely be required." *

Spring growth is rapid



Credits: Images, pictures and graphs provided by Dr. Kitty O'Neil, Regional Field Crops Specialist, North Country Regional Agriculture Program.



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CALENDAR OF EVENTS

April 10 **Upper Susquehanna Coalition Outreach Meeting for the WIP III** 11:00 am - 1:00 pm
(Water Quality Incentives Plan)
Dragonfly Distillery, 1062 Leonard Road, Marathon, NY 13803 RSVP to: (607)756-5991

The Watershed Implementation Plans (WIP) is required to be developed for each state within the Chesapeake Bay Watershed, to serve as a guide for meeting the pollution reduction targets to improve water quality. The Department of Environmental Conservation (DEC), your local Soil and Water Conservation District through the Upper Susquehanna Coalition, along with other partners are the leads for the development of the WIP in New York. Please join us for a brief overview of the Watershed Implementation Plan (WIP) with a chance to provide feedback and ask questions about what the WIP means for you.



April 25 **Public Hearing on Farm Labor Practices Act** 11:30 am - 3:00 pm
SUNY Morrisville-9 Skyline Drive, 13408 See p. 9 for details

June 6 **Cornell Small Grains Field Day** SAVE THE DATE 9:30 am - noon
New Location for 2019: Poormon Farms in Seneca Falls, NY.
Check http://events.cornell.edu/event/2019_small_grains_management_field_day for the full agenda to be out soon.