Our Mission

“The North Country Regional Ag Team aims to improve the productivity and viability of agricultural industries, people and communities in Jefferson, Lewis, St. Lawrence, Franklin, Clinton, and Essex Counties by promoting productive, safe, economically, and environmentally sustainable management practices, and by providing assistance to industry, government, and other agencies in evaluating the impact of public policies affecting the industry.”
DIY On-Farm Research for Better Decision-Making

By Kitty O’Neil

Reduced federal and state funding for agricultural research has translated into fewer on-farm trials in NNY this past year and will mean fewer in 2021, and maybe 2022 as well. But this does not mean on-farm research cannot or should not happen. Any farm can, and should, conduct their own on-farm research from time to time, to help drive decision-making and confirm best management practices. That being said, outcomes of these comparisons are only as valuable as the techniques used. A few basic concepts are described below to get the most out of your efforts and help to make on-farm comparisons.

Some really good online resources have also been developed to help with on-farm trials and comparisons. Dr. Quirine Ketterings’ group published a factsheet on this topic a few years ago and other good guidance documents have been written by several other Extension faculty at Cornell and other universities. University of Minnesota Extension Educator, Liz Stahl, recently obtained a grant to generate lots of useful videos and recommendations for on-farm studies. Links to these materials are included at the end of this article. Your local extension team is always available to help design a good study, too.

Before you design your experiment, carefully define the question you are trying to answer. Not all unanswered questions are easy to answer with a research trial but, often, with a little care defining the question, powerful and useful evidence can be generated. For example, a question such as “What’s the best calf milk replacer?” is a tough question to test, but if it’s retooled to be “Is brand X milk replacer better than what I’m currently using,” now it may be directly tested with a simple 2-treatment comparison. Defining the question well can avoid ending up with misleading or difficult-to-interpret results at the end. Another common mistake is to compare a current practice to an alternative with several changes. For example, comparing your current corn fertility program with a regime with added sulfur, copper and zinc will be difficult to assess afterward. Even if you detect an improvement with the added micronutrients, you won’t know which ones were actually important in that gain. Results are usually clearer when only one component is tested at a time unless several treatment combinations are designed strategically.

All good experimentation requires some amount of replication – repeating the same observation, some number of times, in order to gain confidence in the outcome. In a study to show how much winter wheat yield might vary within an apparently uniform portion of a single field planted with one variety and management, Idaho researchers measured a 15 bushels per acre range among 8 side-by-side 25 x 500’ plots, with adjacent plots differing by as much as 9 bushels per acre. Normal field or animal variability can make it difficult to detect real differences due to treatments. Scientists take great care to calculate the number of replications needed, based on previous research, in order to balance confidence in outcomes with cost of conducting the study. For situations where treatments are expected to have a large impact in an environment with low inherent variation, fewer replications would be needed than for detection of small treatment differences in highly variable populations. Replication is typically provided at multiple points in an experiment too. In a typical corn yield experiment, for example, 3 to 6 plots per treatment could be planted and harvested and yield may be measured 2 to 4 times within each plot. With replication and good treatment design, yield differences due to the variety treatment can be separated from noise.

Some other design details should be carefully planned. Field experiment plots are often randomized or organized in a way to avoid always having some treatments on the end of the field or in low spots, etc. Field plots don’t have to be square and they don’t have to be arranged in a checkerboard arrangement, but care should be taken to avoid or to evenly assign physical location effects. GPS-enabled yield monitors and precision field operations have opened up lots of options for placement of field crop plots. Animals and animal groups are similarly randomized to avoid biases due to age differences, genders, and spatial effects.

After data is collected, some expertise in statistical calculations and analysis is very useful. Good statistical software makes quicker work of the number crunching and calculations of the raw data. This is another area where your local Extension team has expertise and experience and is available to help. A good experiment, even when it’s very simple, generates good data which provides clear interpretation at the end, driving sound, evidence-based management decisions.

Continued on page 4.
The opposite is also true – a poorly designed and implemented trial can yield noisy, unclear data which is not easily interpreted and does not lead to good management changes.

Got an experiment in mind? Let us know if we can help.

Additional Resources:
- On Farm Research, Univ. of Minnesota Extension. 2017. Series of 4 videos with written factsheets developed for the North Central Agriculture and Natural Resource Academy.
The Pesticide Management Education Program (PMEP) at Cornell University is pleased to announce the availability of the 2021 Cornell Guide for Integrated Field Crop Management.

Written by Cornell University specialists, this publication is designed to offer producers, seed and chemical dealers, and crop consultants practical information on growing and managing field corn, forages, small grains, and soybeans. Topics covered include nutrient management, soil health, variety selection, and common field crop pest concerns. A preview of the Field Crops Guide can be seen online at https://cropandpestguides.cce.cornell.edu. Highlighted changes in the 2021 Cornell Field Crops Guide include:

- Revised pesticide options for economically important field crop pests.
- Updated corn, forage, and small grain variety trial and research data.
- New information on barley disease control.
- Revised insect IPM information and insecticide tables throughout the guide.

Cornell Crop and Pest Management Guidelines are available as a print copy, online-only access, or a package combining print and online access. The print edition of the 2021 Field Crops Guide costs $32 plus shipping. Online-only access is $32. A combination of print and online access costs $45 plus shipping costs for the printed book.

Cornell Guidelines can be obtained through your local Cornell Cooperative Extension office or from the Cornell Store at Cornell University. To order from the Cornell Store, call (844) 688-7620 or order online at https://www.cornellstore.com/books/cornell-cooperative-ext-pmep-guidelines.

Cattle Genetics & Sire Selection 101 Webinar

Wednesday, February 10th, 2021
7:00pm—8:00pm
Free

This introductory online class, through zoom, will go over the basics of beef & dairy cattle genetics, how to read and understand a genetic analysis and select sires with desirable traits, based on farm preferences. Participants will learn the practical and economic benefits of selecting sires with favorable genetics, as well as ensure their animals reach their full genetic potential.

Please register for the webinar by following the link below:
https://cornell.zoom.us/meeting/register/tJAsduGrrDwvGNDeyEOu0DJLw-xpelOUIX_04s
or call/email Gabby Wormuth at 315-790-4081 or grw67@cornell.edu.
Crop Congress

25th Annual North Country Crop Congress Agenda:

The 25th Annual North Country Crop Congress will be February 24 and 25, 2021 and begin promptly at 10:00 a.m. and end at 12:25 p.m. This event will be hosted online as a live event via Zoom.

**NYS DEC Pesticide Credits are ONLY available on Day Two, February 25th** To receive pesticide credits, you must log on to the virtual meeting on time and sign out at the conclusion of the program to confirm attendance. The attendance will be monitored throughout the program.

*Registration:
  - [https://ncrat.cce.cornell.edu/event preregistration_new.php?id=1494](https://ncrat.cce.cornell.edu/event preregistration_new.php?id=1494)
  - Please contact Tatum Langworthy with any registration questions.

*The North Country Regional Ag team is a Cornell Cooperative Extension partnership between Cornell University and the CCE Associations in Jefferson, Lewis, St. Lawrence, Franklin, Clinton, and Essex counties.*
Cornell Cooperative Extension is an employer and educator recognized for valuing AA/EEO, Protected Veterans, and individuals with disabilities and provides equal program and employment opportunities.

Registration Info:
Tatum Langworthy
tln92@cornell.edu
315-788-8450

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Critical Calf Care: Urgent Decision Making for Calf Health

January 5: Recognition & Diagnosis
January 12: Dystocia
January 19: Record Keeping & Economics
January 26: Hydration Status
February 2: Scours & Nutrition
February 9: “911: my calf needs help!”
February 16: LIVE panel discussion

(all sessions 12:30pm EST via zoom)

This program is offered at NO COST thanks to our generous sponsors! Registration required: https://tinyurl.com/calfcare
Recognizing and Diagnosing Disease in Pre-weaned Calves

By Casey Havekes & Alycia Drwencke

The first episode of our 7-week series titled “Critical Calf Care” focused on recognizing and diagnosing disease in pre-weaned calves. A critical component to determining the success of sick calves is recognizing signs of disease early on, from both a physiological and a behavioral standpoint. To promote success on farms in this identification we provide a written summary of the key concepts presented below. You can access the recording of the session [here](#).

First, it is important to recognize both the common and uncommon health issues that affect pre-weaned calves. The more common health issues include pneumonia and respiratory disease, digestive issues, and contracted tendons. In fact, according to a 2014 NAHMS survey, operations that treat pre-weaned calves with antimicrobials stated that digestive and respiratory issues were the most common issues at a level of 21.1% and 12%, respectively. Some uncommon issues include hernias, birth defects, and naval infections.

When it comes to recognizing health issues, there are a variety of physiological and behavioral indicators that a producer or calf manager can use for assistance. Physiological indicators include: eye goop, fecal consistency, skin tent, naval characteristics, joint appearance, ear droop, nasal discharge, cough, and temperature. There are several calf health scoring systems and charts incorporating these physical signs that can be implemented on farms to help producers recognize and diagnosis disease. One of these systems (pictured below and linked [here](#)) was designed by Dr. Sheila McGuirk at the University of Wisconsin School of Veterinary Medicine, and it assigns a calf a score in each category depending on how they present themselves. The categories used in this system are nasal discharge, ocular discharge, ear position or head carriage, appetite, cough, rectal temperature, fecal consistency, naval characteristics, and joint appearance. The scores range from 0 to 3, with 0 being normal and 3 being severely compromised. In the system demonstrated below, the observer would add up the total score for each calf and use the score as a tool to assist with decision making. One of the great features of this specific system is that it is available as an [application](#) for a smartphone (with a one time cost of $2.99), and records on each calf can easily be stored for future use. Using a calf health scoring system can also be a great way for beginner calf raisers to gain confidence and familiarity with common calfhood diseases. It’s important to note that there are several other versions of calf health scoring systems that may incorporate different categories than the Wisconsin example, it is recommended to pick the system that works best for your farm, facilities and resources.

On the other hand, behavioral indicators of disease often present well ahead of physiological ones and can be valuable for early intervention. Some of these behavioral indicators include: grooming, feed and water intake, isolation, posture, play, lying time, overall behavior and attitude, and interaction with humans. Feed and water intake can be particularly helpful behavioral indicators when calves are fed with systems that record feeding behaviors. Visual assessments, however, are just as valuable if done consistently.
For example, according to researchers Lowe et al. (2019), calves will decrease the quantity of milk consumed, their drinking speed, the number of visits to the feeder, and the length of feeder visits 3 days prior to the onset of clinical signs of disease. Calves will also increase the number of visits to the water trough before clinical signs of disease are observed, which emphasizes the importance for calves to always have access to fresh, clean water. As a reminder, water access is now a requirement for calves starting at 3 days of age according to the FARM 4.0 program requirements. Lowe et al. (2019) also concluded that the number of lying bouts decreased and the duration of time spent lying increased before and following clinical signs of disease. These results suggest that calves become less active in the days prior to expressing clinical signs of disease, and this may be the result of calves having decreased appetite and attempting to conserve energy in response to disease onset (Lowe et al., 2019).

In summary, monitoring behavioral and physiological indicators of disease can help you identify issues early on, which will ultimately improve the outcome of treatment and likely decrease costs. Observing calves is a very cost-effective strategy that can improve calf success throughout the vulnerable pre-weaning period. Lastly, implementing a scoring system and keeping detailed behavior records as part of your daily routine can be very beneficial in early disease intervention. If you have questions, or would like to implement a scoring system on your farm, reach out to Alycia at amd453@cornell.edu or Casey at cdh238@cornell.edu.

Reference:
Practical soil health (1/4): Cover crop management and termination
Tuesday, February 9, 2021, 12:30 PM - 2:15 PM
John Wallace, Penn State weed specialist, and Mike Hunter, NNY CCE team agronomist, will discuss residual herbicides used in corn and soybean production and their impact on fall seeded cover crops as well as herbicide selection to terminate spring cover crops.
NYSDEC credits 1.0 CCA credits 1.5 PM
Registration is REQUIRED to be eligible for credits!
Register https://reg.cce.cornell.edu/cover_230

Practical soil health (2/4): Compaction management
Tuesday, February 16, 2021, 12:30 PM - 1:45 PM
Warren Schneckenberger, crop farmer from Ontario, Canada will discuss sources of compaction in field crop production, technologies and practices that can reduce compaction.
CCA credits available - you MUST register to be eligible for credits!
Fee $10
Register https://ncrat.cce.cornell.edu/event_preregistration_new.php?id=1440

Practical soil health (3/4): No-till planter and discussion of its components
Tuesday, February 23, 2021, 12:30 PM - 1:45 PM
The components of a no till planter are discussed in this video. To be followed by a Q/A session including CCE staff and no-till farmers.
CCA credits available - you MUST register to be eligible for credits!
Register https://reg.cce.cornell.edu/notill_230

Tuesday, March 2, 2021, 12:30 PM - 1:45 PM
This video seminar features a farmer panel who share their experiences adopting reduced and no-till cover crops. Changes in practices and adaptations for improvement are described. Panelists share the detail of practices used such as interseeding, seeding mixes, and tillage. Benefits include reduction is soil compaction and improved infiltration. Panelists include Forrest Watson of Mulligan Farm in Livingston County, Ryan Akin of Hemdale Farms in Ontario County and Jason Burroughs of Aurora Ridge Dairy in Cayuga County. The panel is moderated by Janice Degni, Cornell Cooperative Extension Field Crops Specialist from the South-Central NY Dairy and Field Crops Program.
CCA credits available - you MUST register to be eligible for credits!
Fee $10
Register https://cornell.zoom.us/meeting/register/tJ0pc-itqjwvHdBUWcplSaTc5WFj9UH6Gqj
At this writing in mid-December 2020, community spread of COVID-19 is gaining momentum in rural areas of New York. As employers, farmers have certain responsibilities when one of their workforce tests positive for COVID-19. Because farmworkers are essential workers, there is sometimes confusion about what quarantine means for those who have come in close contact with the person who has received a positive diagnosis. In this article, you will find resources to help you sort out your responsibilities as an employer and know what steps to take should someone associated with your business test positive.

Once someone tests positive, the local health department (LHD) will work closely with that individual to isolate and trace contacts who may have been exposed during the incubation period for COVID-19. Businesses will be asked to assist the LHD with identifying close contacts of any worker who tests positive. This is where your Forward NY Safety Plan will come in handy. All businesses, including farms, are required to have one. The LHD will likely ask to review your plan to help you strengthen the processes you have in place to help stop the spread of COVID-19. Now is a good time to review the plan, update it if needed and be certain you are doing a good job of tracking contacts at your place of business. For assistance, your first and most knowledgeable resource is your LHD. Please reach out to them. They are striving to connect with people who test positive and complete contact tracing within forty-eight hours of the report of a positive test.

Some essential farmworkers may continue to work on farms during quarantine. Guidance from New York State Department of Agriculture and Markets (NYS DAM) addresses quarantine for essential workers who have been exposed to someone who has tested positive for COVID, as well as isolation and requirements for going back to work for people with positive tests. The Centers for Disease Control and Prevention (CDC) provides information on quarantine and explains the difference between that and isolation: https://www.cdc.gov/coronavirus/2019-ncov/if-you-are-sick/quarantine.html.

The United States Department of Labor details the responsibilities of employers under the Families First Coronavirus Response Act (FFCRA) to provide paid leave for employees affected by COVID-19 or who are caring for family members affected. Employers with fewer than 500 employees are able to receive a tax credit for paid leave provided under FFCRA. The tax credit reimburses the employer for qualified sick or family leave wages, qualified health plan expenses and Medicare tax credit. To claim the credits, employer can (1) assess federal employment taxes that would otherwise be deposited, (2) claim the tax credit on their Form 943, Employers’ Annual Federal Tax Return for Agricultural Employees, or (3) request an advance of the credits not covered by assessing federal employment tax deposit by filing Form 7200 Advance Payment of Employer Credit Due to COVID-19.

Local health officials confirm that most of the spread of COVID-19 in our rural communities can be traced back to small gatherings of people without adequate precautionary measures. Now is a good time to remind your workforce about the importance of wearing a face covering, hand washing or sanitizing, social distancing and staying home to stay healthy. Many people are craving social interaction after many months of limiting our interactions to prevent the spread of COVID-19. With cases on the rise and our health care system once again being tested for its capacity to take care of those seriously ill with COVID-19, everyone must continue to adhere to prevention practices until vaccinations and warmer seasons have slowed the spread of the virus.

In summary, if someone from your farm tests positive for COVID-19, follow your Forward NY Safety Plan, and be sure you are doing a good job of tracking contacts. Work with your LHD to quarantine or isolate individuals as required. Understand when your essential workers may still be able to work during quarantine, and when they may not. Be aware of your employees’ rights and your employer responsibilities under FFCRA for paid time off if employees are sick with COVID-19 or caring for a family member who is. Know you can apply for tax credits for qualified wages, health care plan expenses and Medicare tax paid under FFCRA. And most importantly, continue to do the very best you can to provide a safe and healthy work environment where people have adequate time for rest, so they are ready and able to come to work as needed.
CCE Broome County Presents:
Annie’s Project: Risk Management for Farm Women
February 1st-March 11th
7-8:30pm EST
Zoom

Are you a woman engaged in farming in NYS? Would you like to learn and network with other farm women, and learn how to strengthen your farming operation? Join Cornell Cooperative Extensions of Allegany, Broome, Oneida, Steuben, and Seneca counties, along with the Central NY Dairy, Livestock & Field Crops team, for our first virtual Annie’s Project this winter!

Annie’s Project is a six-week online experience designed especially for farm women to help them develop their management and decision-making skills for their farms. Annie’s Project is designed for farm women who have been in farming, or agri-business, or part of the food system for three to five years, and want to develop their understanding, interpretation, and opportunities in sustainable agriculture. Annie’s Project gives farm women the opportunity to learn from female agricultural professionals and network with other women in similar situations.

- Annie’s Project provides education in production, price or market, financial, institutional and legal, and human and personal risk. At the end of six weeks, participants will —Understand personality types to communicate better with business partners
- Put family living expenses together with other costs of doing business on the farm
- Identify production risks on-farm and prioritize risk management strategies to minimize losses
- Design & Interpret balance sheets, income statements, and cash flow projections to make business decisions
- Review labor laws, requirements, and their implications
- Develop an inventory of current Human Capitol & make a plan to address any weaknesses and contingency plan if a ‘position’ becomes open
- Understand farm family labor vs off farm labor. how to offer benefits & when it’s time to hire outside help
- Communicating and expectations of family vs hired labor
- Insurances to cover HR
- Payroll taxes
- Understand how assets are titled and learn about estate planning tools
- Consider available marketing opportunities
- Understand tools and resources for stress management & farm equipment needs specific to farm women

The cost is $45 for the series and includes a portfolio, access to an online learning platform and access to all presentations and worksheets, access to financial and legal advice, and support from a variety of community partners. The series will take place on Mondays & Thursdays, February 1st-March 12th, 7-8:15pm via Zoom. This year we are waiving the fee for women veterans interested in getting into agriculture. For more information on this, please contact Nina Saeli at ns963@cornell.edu.

To register, click here: https://reg.cce.cornell.edu/winter2021anniesproject_203. For more information on the curriculum and program logistics, please contact Laura Biasillo at lw257@cornell.edu.
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- Crop Growers
- Dairy Health & Management Services
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Silver Sponsor Level:
Due to COVID-19 social distance restrictions, all in-person CCE NCRAT programs have been postponed until further notice. Several virtual programs will be offered through the Fall and Winter. Also, check out our CCE NCRAT Blog and YouTube channel for up to date information and content.

Annie’s Project, see page 12 for more information.

Critical Calf Care, see page 7 for more information

Practical Soil Health Management, a 4-part Zoom series, see page 10 for information.

25th Annual Crop Congress, February 24 & 25, see page 6 for more information.

Beginner Hay & Pasture School, March 11th, see page 4 for more information.

Advanced Hay & Pasture School, March 18th, see page 9 for more information.

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