The 2016 Steuben County Crop Symposium will be held Tuesday, February 23 from 10:00 a.m. to 2:00 p.m. at the Civil Defense Center, in Bath. Program Topics include:

10:00 -10:30 a.m. – Registration

10:30-11:00 a.m. – Western Bean Cutworm Project Update, Carol MacNeil, Extension Vegetable Specialist, CCE Ontario County. Carol will provide an update on the Western Bean Cutworm Project that is occurring throughout western NY. She will provide a summary of the Steuben County trap network and surrounding areas, as well as provide information about how to control the pest, related pests that you’ll find in the fields, damage recognition, and management timing.

11:00 a.m. – NOON – Herbicide Resistance and mode of action, Nicole Carutis, Field & Forage Crops Educator, Penn State Extension. A number of weed species that once were susceptible to and easily managed by certain herbicides have developed resistance. These weeds no longer are controlled by applications of previously effective herbicides. We will review weed identification of these species and discuss control options for each one, as well as general resistance management.

NOON – 12:30 p.m. – Lunch

12:30 -1:30 p.m. – Update on Field Crops, Bill Cox, Soil and Crop Sciences Extension and Research Professor, Cornell University. Professor Cox will provide an update on corn, soybean, and small grain production research. He will discuss important pests of these crops and their management techniques. Professor Cox will also discuss organic cropping systems in field crops.

1:30-2:00 p.m. – Soybean seed Treatments, Bill Cox Soil and Crop Sciences Extension and Research Professor, Cornell University. Professor Cox will provide a short update on the effectiveness of various soybean seed treatments. He will review his research on this subject.

DEC Pesticide Applicator Recertification Credits for the event include 3 credits in approved Categories 1a, 10, 21, and 23 and .5 credits in Category 4. You must be present at 10:00 a.m. and have your applicator ID with you to receive this credit. RSVP’s appreciated; contact CCE-Steuben at 607-664-2300 or email ksb29@cornell.edu. $15.00 per person, lunch provided.
Steuben County Soil & Water Conservation District
2016 Annual Tree & Shrub Program

Last day to order trees is March 18. Make checks payable to Steuben SWCD. Trees will be available for pick up on Friday, April 22 from 8:30 to 4:30 and Saturday, April 23 from 9 -12. Pick up will be at the District Maintenance Building at 6981 Co Rte 113, Bath. Since we cannot check where the planting is done nor guard against improper handling, the District will not be responsible for the success or failure of your plantings. No Refunds. will be made for trees that are not picked up on time and neglected orders will be sold.

Call 607-776-7398, ext. 3 for an order form or more information.

Locally Grown Food Festival

Friday, February 12, 2016, from 5-8pm at Union Hall, 100 Center Way, Corning, NY 14830.. Each spring, hundreds of visitors come out for the Corning Locally Grown Foods Festival, a fun and educational event that celebrates and presents the rich variety of foods produced in our region. Farmers from across the Finger Lakes region participate, and bring information about their farms as well products to buy or sample. Farms represented have included producers of livestock, fruit, vegetables, maple, honey, preserves, CSA’s and other local products. The event features food dishes made with various local meats, vegetables, fruits, preserves, and herbs. If you would like to be part of the Locally Grown Food Festival, contact CCE-Steuben, 3 E. Pulteney Sq., Bath, NY for an application. Vendors will be provided with (1) 6-foot table to promote their farm and farm products. This event allows you to educate consumers, meet new customers, promote your farm and sell your product. The event also will be designated as a farmers’ market allowing for onsite sales! Space is limited, so please register as soon as possible. Checks should be made out to CCE-Steuben. The fee is $25.00 for a 6-foot table (sorry only 1 table per farm). If you have any questions please contact Kerri Bartlett at 607-583-3170 or ksb29@cornell.edu, or Kelley Elliott at 607-583-3358 or kje36@cornell.edu.

Winter Green-Up Grazing Conference

The Northeast’s premier Winter Green-up Grazing Conference is February 12-13th, 2016 at the Century House in Latham, NY. The outstanding speaker line-up includes Canadian mob-grazing pioneer, Neil Dennis, as well as ranching profitability guru, Chip Hines. For conference details and registration information, please visit: (insert link). Don’t delay as this conference is sure to sell out. To register: https://reg.cce.cornell.edu/WGU2016_201. Sponsored by Cornell Cooperative Extension of Albany County and Black Queen Angus Farm, LLC.
Penn/York Ag-stravaganza
Date: Saturday, February 20th, 2016
Time: 8:00 AM—2:30 PM
Genesee Environmental Center
682 Ellisburg Road (Route 244) Genesee, PA

The Penn/York Ag-stravaganza is a partnership project between Pennsylvania and New York Agricultural Agencies to help reduce agricultural impact of our natural resources and introduce new markets that may increase farm profitability.

Speakers & Topics
• Rodale Institute: Organic No-Till/Reduced Till Corn and Soybeans.
• Russ Wilson: Grazing Season Extension
• Joel Myers: Conventional No-Till Management/Talk About His New Soil Health Publication Written With Sjoerd Duiker and Lisa Blazer

Call the Potter County Conservation District to register or request a pamphlet at (814) 274-8411 Ext. #4

Cost: $10.00 per person (includes lunch)

The following course has been APPROVED for Pennsylvania Pesticide & Nutrient Management recertification training credits.
Pesticide: 3-PC, 3-Cat1, 3-Cat18
Nutrient Management: 2.50 CEC

Managing Your Woods for Fun and Profit

Wednesday, February 24th from 6:00 to 8:00 pm at the Bath Civil Defense Center; State Route 54; Bath.

Join Foresters Greg Muller of the DEC and Brett Chedzoy of Cornell Cooperative Extension for an informative evening program on how to care for your woods, while achieving your objectives and keeping ownership affordable! Topics include: financial, educational and technical assistance programs; the benefits of active woodland management and stewardship; forest tax law information and guidance; updates on invasive pests and timber markets; and an overview of agroforestry opportunities. This program is free and open to the public. For more information contact CCE-Steuben 607-664-2300 or email Kerri at ksb29@cornell.edu. Light refreshments will be provided. Registration is not required.

For additional information on caring for your woods or harvesting timber, please visit CCE’s forestry extension website: www.forestconnect.info and the DEC’s private woodlot management page: http://www.dec.ny.gov/lands/4972.html

Applications sought for 2016 Dairy of Distinction Award

The New York Dairy of Distinction Program invites interested farms to apply for this year’s Dairy of Distinction award from the Northeast Dairy Farm Beautification Program. Applications must be postmarked by April 15th.

The award is based on the idea that attractive farmsteads enhance consumer confidence in the wholesomeness of milk and stimulate milk sales and public support for the dairy industry. Roadside judging will take place in May. Winning farms will be notified in June, and will

Springwater Agricultural Products
8663 Strutt Street, Springwater, NY
Cell: 585-315-1094
Pesticide, Foliar Nutrition & Adjuvant Sales
SeedWay, NK, WL & Dairy Banquet Seed Sales
Certified Corn, Soybeans, Small Grains, Forage & Pasture Grasses

Open Everyday – Dave Votypka-Owner
Quality products with farmer friendly prices.

Schuyler and Steuben – February 2016
receive a Dairy of Distinction sign to display in front of their farm.

To download an application or to apply online visit the Dairy of Distinction website at www.dairyofdistinction.com or contact your local Cornell Cooperative Extension office.

**Lambing and Kidding Workshop**

Wednesday, February 24, 2016  
6:30 pm – 9:00 pm  
Cornell Cooperative Extension Center  
480 North Main Street,  
Canandaigua, NY 14424

Canandaigua, NY – The workshop is designed for new and experienced farmers, and for youth and adults. Cornell Small Ruminant Extension Specialist, tatiana Stanton, will start out covering the basics of lambing and kidding. She’ll discuss birthing supplies, stages of lambing / kidding, basic care of dam and offspring, and when and how to intervene, if needed. There will be some hands-on activities and a discussion on coping with birth related problems. Experienced farmers will be encouraged to have input on these topics.

After that, the topic will switch to methods to manage birthing efficiently without sacrificing animal wellbeing. Dr. Stanton will share examples of practices that experienced farmers throughout New York have developed to reduce labor and expenses during the birthing season. Successful methods to foster kids and lambs and also labor saving practices for artificially rearing will be discussed. Management considerations when lambing or kidding on pasture will be discussed.

Class fee: $15.00 per person

To register or for more information call Cornell Cooperative Extension at 585-394-3977 x 427 or email nea8@cornell.edu with your name, address, and phone number.
Measuring your woodlot - Peter J. Smallidge, NYS Extension Forester Cornell University. Effective management of any resources starts by knowing what and how much of the resource you control. In your woodlot, effective management and utilization requires that you know how many trees, their size, and the species. This session will teach woodlot owners basic and simple principles of woodlot inventory, and an example of how to use that information to assess the potential for personal firewood harvesting. Woodland measurements allow informed management decisions for thinning, herbicide treatments, firewood cutting, habitat manipulation and more. Participants will receive a free angle gauge and paper tally sheets to collect woodland data. Participants should bring a calculator and pencil to the session.

Conservation and Management of Woodland Pools - Kristi Sullivan, Cornell University, Dept. of Natural Resources, Conservation Program Coordinator. Highlights what landowners can expect to see and learn about their lands from these highly spec.

Forest Mushroom Cultivation - Don Gasiewicz, Owner/Operator Toad Song Mushrooms, CCE Wyoming County. Utilize low value and cull trees to grow gourmet mushrooms. Whether for home consumption or profit, small diameter trees can be used as a low cost substrate, while producing high value mushrooms. Learn the types of mushrooms you can grow, which tree species you can use for mushrooms, inoculation techniques, site considerations, fruiting your logs, and some simple marketing strategies.

LUNCH 11:30 a.m. – 12:45 p.m.

12:45 p.m. - 1:45 p.m. CONCURRENT SESSION II (PICK ONE)

Bats of New York - Kristi Sullivan, Cornell University, Dept. of Natural Resources, Conservation Program Coordinator.

Including white nose syndrome and wind power project considerations as well as overview of the 9 species we have and their habits/habitats.

Mode and method of vegetation control - Peter J. Smallidge, NYS Extension Forester Cornell University. A variety of physical (organic) and chemical (herbicide) techniques are available to woodland owners to who need to manage undesired vegetation. This presentation will discuss the concepts of mode (target specificity) and method (target selectivity) for common practices in northeastern woodlands. The description of each technique will include PPE, appropriate circumstances for the application, and impact on target and associated vegetation. A template for developing a profile to guide treatment will be provided and discussed. 1 DEC recertification credit requested.

Water Quality on Your Property- Why it matters for wildlife and for you - David VanEarden High School Biology Teacher. Learn how you as a property owner can monitor and improve water sources on your acreage. Workshop will cover ways to improve the health of your property enhancing wildlife through aquatic habitat improvement.

Present & Potential Forest Pests in NYS - Mark Whitmore, Dept. of Natural Resources, Cornell University. This workshop will focus on the current status of EAB and what landowners should be considering when planning management of their forests. Discussion of infestations, issues and latest research on EAB management techniques in New York State. As well as highlighting other invasives landowners should be scouting for. 1 DEC recertification credit requested.

1:55 p.m. - 2:55 p.m. CONCURRENT SESSION III (PICK ONE)

Overview of Personal Protective Equipment for Pesticides and Changes to the Worker Protection Standard Regulations - James Carrabba, Agricultural Safety Specialist.
This presentation will give a general overview of the types of Personal protective Equipment (PPE) that may be required to safely apply pesticides and the changes to the Worker Protection Standard will also be presented. Including information on: Routes of exposure; Acute vs. chronic exposures, signs & symptoms; Hierarchy of controls will be covered, explaining why it is most effective to start with engineering controls first, next implement administrative controls, and finally relying on PPE for protection; Label requirements and signal words. Students will be made familiar with the different types of pesticide PPE available and when it may be required including types of gloves, protective clothes, and respiratory protection. How to proper decontamination procedures and prevent take-home exposures along with proper laundering of pesticide contaminated work clothes. 1 DEC recertification credit requested.

**Tech Tools for Land Stewardship - Michael Jabot, Ph.D. Professor, Science Education US Partner - GLOBE Program Director, Institute for Research in Science Teaching State University of New York at Fredonia.**

This session will share ways that landowners can easily access data to inform their stewardship decisions. Our focus will be how we can use freely available GIS data sources as well as how we can generate our data.

**Hemlock Woolly Adelgid update for NYS - Mark Whitmore, Dept. of Natural Resources, Cornell University.**

This workshop will address the basic biology, detection, and ecology of population behavior for the Hemlock Woolly Adelgid. Discussion of infestations, issues and latest research on management techniques in New York State. 1 DEC recertification credit requested.

**Identifying and Keeping Track of Your Backyard Birds - Buffalo Audubon Naturalist Tom Kerr** will help landowners learn how to identify common species found in our area. We will also learn to use citizen science programs like eBird and Hummingbirds at Home to record and track our sightings.

**3:00 PM - NYFOA Membership Drawing – Cafeteria**

**2015 On-Farm Shredlage® Project Results**

Sally Flis, Ph.D. - Feed and Crop Support Specialist - Dairy One

From March to June 2015, the Dairy One Forage Lab collaborated with Allenwaite Farm in Schaghticoke, NY to run a 12 week study feeding shredlage. The Shredlage® processor rips the forage longitudinally, opens up the rind of the plant, and smashes the corn kernels, resulting in higher corn silage processing scores (CSPS) than conventionally processed corn silage. In recent years, studies have found varying responses to feeding
In order to help the farm make a decision on how to proceed in the future with corn silage processing, we worked with the farm to design a project to compare the corn silage harvested on the farm as shredlage versus a conventional corn silage processing unit. Working with Russ Saville and Sue Greth from Cargill Animal Nutrition, diets were formulated to have 22.4 lbs (38 % of diet DM) of dry matter from either conventionally processed corn silage (CCS) or shredlage (SCS). All other ingredients were the same. Diets were fed to two pens of 2+ lactation cows with 152 cows per pen. The cows in the conventional (C) pen averaged 120 DIM, and the cows in the shredlage (S) pen averaged 115 DIM at the start of the project.

Table 1. Forage analysis results for Conventionally Processed Corn Silage (CCS) and Shredlage (SCS).

While DMI bounced back and forth between the two groups (Table 2), cows in the S Pen produced between 2.2 and 3.2 lbs/day more milk (Figure 1). The milk production response to shredlage was greater in this project than has been reported in earlier studies. In the UW 1 trial, a 1.76 lbs/day increase in milk production was reported when shredlage was fed versus conventional corn silage (Ferraretto and Shaver, 2012). Milk production response to shredlage varied by week in the UW 2 study (Shaver, 2014). A recent Cornell study found no difference in milk production when shredlage replaced conventionally processed corn silage (Chase, 2015).

Milk production was recorded daily for all cows. Feed delivered and refused by each pen was recorded daily using FeedWatch. Milk quality measures (Fat %, Protein %, SCC, and MUN) were measured at week 6 and week 12. During week 6 and week 12, TMR and ORTS (refusal) samples were taken for analysis with the Penn State Shaker and nutrient composition. The CCS and SCS were sampled and tested weekly.

Results
In the C pen, 136 of the cows were in the pen for all 12 weeks of the study, and in the S pen, 143 cows were in the pen for all 12 weeks of the study.

Forage analysis was very similar between weeks three and nine (Table 1), therefore dry matter intake and milk production in the two pens is focused on these weeks. Dry matter intake was similar between weeks three and nine, averaging 56.0 ± 1.2 lbs/cow/day on the SCS diet and 55.8 ± 1.2 lbs/cow/day on the CCS diet (Table 2). The similarity of chemical analysis for SCS and CCS with different milk production responses leads to the second objective of the project: to examine other methods for evaluating corn silage.
± 0.33, SCC x 1,000 averaged 81.9 ± 214, and MUN mg/dL averaged 13.0 ± 2.0. Previous shredlage studies have reported any difference in milk quality measures when shredlage was fed (Ferraretto and Shaver, 2012; Shaver, 2014).

Fecal starch was 2% or less, indicating very good starch digestion in both diets and no difference between treatments. In week 6, fecal starch averaged 2.18 ± 1.16 % DM and 1.95 ± 0.78 % DM for the S Pen and the C pen, respectively. In week 12, fecal starch was 1.46 ± 0.64 % DM and 1.66 ± 0.86 % DM for the S Pen and the C pen, respectively.

The percentage of material on the top screen of the Penn State Shaker Box was higher for shredlage (36.8 %) than conventional corn silage (13.9 %). The CSPS averaged 62.2 ± 2.8 for shredlage and 56.2 ± 4.0 for the conventional corn silage. However, milk production in the study was not correlated with the CSPS results. We found better relationships to milk production when we measured the starch and NDF concentrations in the fractions of the CSPS and plan to further explore these measures in 2016.

Overall results of this project were similar to what has been reported in other studies. Milk quality measures were not different, cows did not sort diets, and fecal starch was not different. Milk production response in this study was greater than reported other studies (Shaver, 2014; Ferraretto and Shaver, 2012; and Chase, 2015).

For a complete report, contact Sally Flis at sally.flis@dairyone.com or 607-229-5337.

Acknowledgements
Thank you to the Allenwaite Farm and Staff, Sue Greth and Russ Saville from Cargill Animal Nutrition, the Dairy One Forage Lab Staff, Dairy One DHIA technicians, and Heather Dann, Ph.D. of the William H. Miner Agricultural Research Institute.

References


Governor Cuomo Announces $25 Million Southern Tier Agricultural Industry Enhancement Program to Grow Farms and Agribusiness

Program Supports Projects that Increase Agricultural Production and Environmental Enhancements. Eligibility Criteria and Applications are Available Now. Governor Cuomo announced the release of program criteria for the $25 million Southern Tier Agricultural Industry Enhancement Program. The eligibility requirements are now available online at www.agriculture.ny.gov. The program will provide crucial funding for projects designed to help farms and agribusinesses expand and grow their operations, as well as increase environmental enhancements in Allegany, Broome, Cattaraugus, Chautauqua, Chemung, Chenango, Delaware, Schuyler, Steuben, Tompkins and Tioga counties. Applications are available at the Steuben County Soil and Water office.

Applications are due March 7, 2016

Even TMRs Need Audited

Virginia A. Ishler,
Penn State Extension Dairy Specialist
Posted: January 14, 2016

The definition of audit is an official inspection of an individual's or organization's accounts, typically by an independent body. Audit is usually associated with financials however it applies very well to a total mixed ration (TMR). The premise of precision feeding is that the same ration is consistently mixed and fed to animals every day. In the real world there are elements influencing how well this practice is implemented. A TMR audit is something every producer should consider.

Production Perspective

Having a third party evaluate feed storage and preparation, ration mixing and delivery, ingredient variation and shrink, and labor and resources utilization can provide a fresh perspective where gaps may be in the system. The benefit to the producer is not only improved consistency and efficiency, but improved animal performance and income.

There are combinations of factors that can cause variation in TMRs and they can be both human and mechanical. Mixing times, overfilling, liquid feed distribution, worn mixers, auger speed, hay processing, loading sequence, un-level mixer and others can impact how consistently a ration is mixed and delivered. A major critical control point is silage management and the storage structure used, especially for horizontal structures. The goal is to extract a consistent source of feed while minimizing spoilage and shrink.

A general recommendation when filling the mixer for ingredient order is grains and low inclusion items early in the mixing sequence followed by higher volume ingredients (i.e. forages) and then liquid feeds as the last item. An independent person conducting a TMR audit provides unbiased assessments on where improvements are needed, especially related to the workings of the mixer.

Managing feed bunks for consistent intakes by all cows in the pen is the ultimate goal of implementing precision feeding. The questions to ask are: is the TMR delivered to the pen the same time every day, is the correct amount delivered, is the TMR evenly distributed, how many times during the day is the TMR pushed up, and how often is silage dry matter monitored? Cows have certain behaviors when it comes to eating. They will go to the bunk when fresh feed is delivered. When cows are returning from the parlor feed should be pushed up or delivered, otherwise they will lie down in their stalls. Over-crowded cows spend more time waiting to eat and thus get less time to eat. Cows tend to be territorial and will eat in certain areas along the bunk. The tendency is not to move to an area where there is feed even if their area is empty. Cows will eat at night if there is feed available. If the bunk is empty in the morning a question to ask is how long has it been empty?
Once an audit is completed there are on farm tools and practices to ensure good feeding management practices are being maintained. Utilizing the Penn State particle size separator is a simple and inexpensive way to check that loads are being mixed properly. This tool can be used to check particle size of the mix from the beginning to end of feed out within the same pen. Checking particle size over a course of several days is useful to confirm that protocols and equipment are functioning properly. Screening the refusals determines if cows are sorting the ration. In a well-developed and delivered TMR, the particle size distribution should be similar for the fresh feed versus the refusals.

Dorothy Pastor from Diamond V presented a wealth of information on TMR audits at the December 16, 2015 Penn State program “Feed Management by the Numbers”. It illustrated the benefits to the cows and to the producer. Anyone interested in having an audit performed can contact Dorothy at dpastor@diamondv.com

Action plan for conducting a TMR audit

**Goal:** Contact a third party to conduct a TMR audit within the next three months.

**Steps**

- **Step 1:** After the audit is completed review the results and priorities with that person.
- **Step 2:** Meet with the farm employees to review the audit results and the recommended changes to protocols.
- **Step 3:** Use the Penn State particle size separator monthly to monitor the first and last feed out from a pen of cows and at least 2 non-consecutive days on at least 3 different rations.
- **Step 4:** Record information and investigate human or mechanical issues if discrepancies occur.

**Economic perspective**

Monitoring must include an economic component to determine if a management strategy is working or not. For the lactating cows income over feed costs is a good way to check that feed costs are in line for the level of milk production. Starting with July's milk price, income over feed costs was calculated using average intake and production for the last six years from the Penn State dairy herd. The ration contained 63% forage consisting of corn silage, haylage and hay. The concentrate portion included corn grain, candy meal, sugar, canola meal, roasted soybeans, Optigen (Alltech product) and a mineral vitamin mix. All market prices were used. Also included are the feed costs for dry cows, springing heifers, pregnant heifers and growing heifers. The rations reflect what has been fed to these animal groups at the Penn State dairy herd. All market prices were used.

**Income over feed cost using standardized rations and production data from the Penn State dairy herd.**

**Note:** December's PSU milk price: $18.55/cwt; feed cost/cow: $6.47; average milk production: 84 lbs.

**Feed cost/non-lactating animal/day.**
Is A Fresh Group Needed?
Heather Dann
dann@whminer.com

The use of a fresh pen continues to grow in popularity, especially for dairies that are expanding herd size and/or building new facilities. A fresh pen allows a dairy to house fresh cows separately from other cows in the lactating herd to facilitate monitoring of health problems, minimize social stress, and provide a diet specifically formulated for fresh cows.

The optimal duration for cows to remain in a fresh pen is unknown but likely is unique for each dairy and possibly each cow given differences in rate of increase in dry matter intake and milk production. An informal survey of dairies suggested that cows remain in a fresh pen anywhere from 10 to 42 days in milk (DIM) with 14 to 21 DIM the most common. Fresh cows that transition successfully are typically ready for a move to a high group pen with a more fermentable carbohydrate diet between 10 and 14 DIM. Extended stays in a fresh pen can limit dry matter intake because of gut fill and increase the risk of health problems, such as primary ketosis. An example of this occurred at Miner Institute where the primary forage in the fresh diet, corn silage, had a lower fiber digestibility than expected based on initial laboratory analysis. Cows increased intake rapidly until 10 to 14 DIM when intake plateaued with milk continuing to increase. The cows were eating as much fiber as a percentage of their body weight as possible. Blood beta-hydroxybutyrate (BHBA) started to rise at a time when it would normally decrease resulting in some cows having subclinical ketosis or showing clinical signs of ketosis. At 22 DIM, cows were switched to a more digestible high group diet that allowed greater intake and the primary ketosis problem resolved.

A fresh pen and its management can greatly influence fresh cow behavior. A fresh pen typically houses a smaller group of cows together than the other lactating groups which reduces the social activity and possibly leads to less social stress and more resting. This concept was demonstrated in a European study where the addition of fresh cows to small groups of cows compared to large groups of cows housed at 1 stall per cow resulted in fewer agonistic and nonagonistic interactions within the 3 hours after mixing. Introducing fresh heifers as pairs rather than individuals to a group containing older cows promoted lying behavior after mixing in the UK. In a Danish study, cows housed as a separate group for one month after calving with ≥1 stall per cow resulted in improved production and health in primiparous but not multiparous cows. Interestingly, a fresh cow diet was not used in the separate group. An additional benefit of separate grouping may be observed if an appropriate fresh cow diet is used.

The feed bunk of a fresh pen should be understocked and provide at least 76 cm of space or ≥1 headlock per cow. Limited feed bunk space increased the number of displacements and feeding rates of cows before and after calving in a University of British Columbia study. Fresh cows that were overcrowded at the feed bunk altered their feeding behavior (e.g. increased feeding rate) and increased the risk for health problems associated with slug-feeding in a collaborative study between Miner Institute and the University of British Columbia.

Based on field observations and limited research, fresh cows should be housed in small, separate groups to minimize social stress, maximize comfort of the physical resting space, minimize slug feeding and other undesirable feeding behaviors, and provide a diet that promotes intake and prevents health problems.
Study Uses Farm Data to Aid in Slowing Evolution of Herbicide-Resistant Weeds

Stephanie Henry, University of Illinois

The widespread evolution of herbicide-resistant weeds is costing farmers, especially through decreases in productivity and profitability. Although researchers and industry personnel have made recommendations to slow this evolution, an understanding of the patterns and causes of the resistance has been limited.

Diversifying the herbicide mechanisms of action (MOAs) has been recommended to stop the spread of herbicide-resistant weeds. MOAs refer to the biochemical interaction that affects or disrupts the target site in the weed. Two common methods of diversifying MOAs involve rotating herbicides—from season to season or within the same season—or by using a mix of herbicides in the same tank. The question has been which of these methods is the most effective.

A recently published study by weed scientists at the University of Illinois and USDA-ARS, looking at glyphosate-resistant waterhemp, is providing valuable evidence that points to management practices as the driving force behind herbicide resistance, and that herbicide mixing, as opposed to herbicide rotation, is the most effective tool in managing resistance.

Pat Tranel, a U of I weed scientist and a co-author on the study, said this is not the first time researchers have presented evidence that herbicide rotation is not the best resistance management strategy. “This paper is valuable because these conclusions were obtained doing our experiment in a more ‘real-life’ fashion,” Tranel said. “This study confirmed previous conclusions that farmers should use herbicide mixing rather than rotation.”

During the study, the researchers evaluated glyphosate-resistance incidences, as well as landscape, soil, weed, and farm-management data from 105 central Illinois grain farms, including almost 500 site-years of herbicide application records. Having this data, collected between 2004 and 2010, helped the researchers identify relationships between past herbicide use and current glyphosate-resistance occurrences.

Tranel said when glyphosate-resistant waterhemp was first reported in Illinois in 2006, researchers working at the site saw some fields that were infested with waterhemp, but adjacent fields that were free of the weed.

“We asked, ‘what is different between these two fields? Is it what the farmers are doing?’ We asked a retail applicator to let us review all the management practices data from 100 fields—50 that have resistant waterhemp and 50 that don’t,” Tranel said.

“We took the results of what farmers have already done, and asked what is different in the fields that have resistance versus the ones that don’t,” he added.

After collecting the management data, sampling waterhemp from the fields, and screening seeds from the field for resistance back in their greenhouses, the researchers analyzed that data for management factors most associated with resistance. Overall the researchers examined 66 variables related to environment, soil, landscape, weed community, and weed management.

“We looked at every factor we could think of in terms of management and landscape,” Tranel said. “We found that it was management factors that are the most important. It doesn’t matter whether you’re next to a water course that might bring in new seed, what the waterhemp density of your field is, etc. It’s what you did in your field that matters.”

Aaron Hager, a U of I weed scientist and co-author on the study, explained that the occurrence of glyphosate-resistant waterhemp was greatest in fields where glyphosate had been used in over 75 percent of the seasons included in the analysis, where fewer MOAs
were used each year, and where herbicide rotation occurred annually. “Simply rotating herbicide MOAs actually increased the frequency of resistance,” he said.

On the other hand, Tranel said that the farmers who were using multiple herbicides per application were least likely to have resistance. “When using an average of 2.5 MOAs per application, you are 83 times less likely to have resistance compared to if you used only 1.5 MOAs per application,” he explained.

Hager pointed out that this strategy will work only if each component of the tank mixture is effective against the target species. “Effective, long-term weed management will require even more diverse management practices,” he added.

Another piece of good news for farmers is that the researchers did not find an association of proximity between neighboring fields and resistance. “The good thing is not only does management matter, it’s what you do in your own field that matters. Even if a neighbor’s resistance moves, it’s at a small frequency. If you’re doing the right thing it will stay at a small frequency,” Tranel said.

Although there may be some concerns with herbicide mixing, Tranel said it is still the best tool to manage resistance. “We don’t say that mixing is the end-all solution. What we saw from this study, if success for farmers is measured by lack of resistance or lower frequency, then successful farmers use multiple herbicides per application.”

However, there may be limitations if the cover crop can grazed or used as a forage source due to what previous herbicides have been applied to the field. It is important for producers to look at and follow the rotation restrictions listed on the herbicide label.

Additionally, just because a specific cover crop species is not listed on the herbicide label does not mean the cover crop can legally be grazed or fed. In these instances most herbicide labels usually have an “all other crops” or “all others” that producers should use and follow those restriction intervals, which are typically 12 to 18 months after the herbicide as been applied. Please refer to the specific herbicide label.

It can be frustrating looking up all these herbicide labels just to find out they have a restriction on them for grazing or feeding cover crops. To help provide some guidance for farmers, ISU Extension and Outreach worked on putting together a bulletin, “Herbicide use may restrict grazing options for cover crops,” that lists herbicides that have acceptable restriction intervals where cover crops can be grazed or used as a forage source. The list is not all comprehensive, but is meant to help provide producers with a starting point.

The bulletin can be found at: http://store.extension.iastate.edu/Product/Herbicide-use-may-restrict-grazing-options-for-cover-crops.

So as you are making decisions for the 2016 growing season on what herbicides you plan to use, remember to take into account if you plan to either graze or feed the cover crop that will get planted next fall. If you are planning to feed or graze a cover crop you’ve planted this fall, please go back and check herbicide labels to make sure it is legal to do so. If you have any questions, please contact your local Extension Field Agronomist.
Dairy Market Watch

### Milk Component Prices

<table>
<thead>
<tr>
<th>Month</th>
<th>Butterfat</th>
<th>Protein</th>
<th>I (Boston)</th>
<th>II</th>
<th>III</th>
<th>IV</th>
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<tbody>
<tr>
<td>Dec 14</td>
<td>$2.10</td>
<td>$0.74</td>
<td>$25.78</td>
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### Milk Class Prices

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### Statistical Uniform Price & PPD

- Jamestown, NY $19.87, $2.05, $20.47, $2.65, $1.76
- Albany, NY $15.51, $0.05, $16.11, $0.65, $1.39

<table>
<thead>
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<th>Butterfat</th>
<th>Protein</th>
<th>I (Boston)</th>
<th>II</th>
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<td>$7.83</td>
<td>$7.48</td>
<td></td>
</tr>
</tbody>
</table>

### MPP

- Class I = fluid milk; Class II = soft products, cream, and yogurt; Class III = cheese (American, Italian), evaporated and condensed products; Class IV = butter and milk powder.
- *At a milk margin minus feed costs of $8 or less, payments are possible depending on the level of coverage chosen by the dairy producer.

### Cheese

- **Cheese**: Cheese production is steady in the West and Midwest, but lower in the Northeast due to the impact of last weekend’s massive snow storm, which hindered milk movements. Some milk from the East moved into Midwest cheese plants. Overall awareness of future challenges in moving higher volumes of cheese production into markets, domestic and export, has become more pronounced.

### Butter

- **Butter**: Butter churning is strong across the nation as cream supplies are readily available. Bulk butter output is clearing into cold storage. Prices for bulk butter are ranging from 4 cents under to 8 cents over the market, based on CME Group prices and various indices. In the East, the emergency of winter storm Jonas caused a slight drop in butter sales. At this point, the market undertone is uncertain. The NASS Cold Storage report noted U.S. butter stocks on December 31 were 152.9 million pounds, 15% higher than last month and 46% higher a year ago.

### Friday CME Cash Prices

<table>
<thead>
<tr>
<th>Dates</th>
<th>Butter</th>
<th>Cheese (40# Blocks)</th>
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</thead>
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<tr>
<td>1/8</td>
<td>$2.04</td>
<td>$1.46</td>
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<td>1/15</td>
<td>$2.25</td>
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<tr>
<td>1/22</td>
<td>$2.17</td>
<td>$1.46</td>
</tr>
<tr>
<td>1/29</td>
<td>$2.20</td>
<td>$1.46</td>
</tr>
</tbody>
</table>

### Dairy Market Watch

- **Fluid Milk**: In the Northeast and Mid-Atlantic regions, farm level milk production is slightly up. Bottling orders are mixed following the heavy demand prior to the winter storm Jonas. Milk hauling has been negatively impacted by the storm. Cream volumes are heavy throughout the country and are mostly clearing into butter churns.

- **Dry Products**: The market undertone is mixed for nonfat dry milk products. Interest is sluggish for some, but others are optimistic about future prices. Dry buttermilk production is active, in line with the butter output. However, in the East, drying schedules are steady to somewhat lighter, as the snow storm disrupted butter production. Dry whole milk spot sales have been light throughout the week. Dry whey production is stable and inventories are balanced. Spot load availability is light to moderate. The interest for lactose is generally good and steady this week.

- **Production**: Milk production in the 23 major States during December totaled 16.4 billion pounds, up 0.7 percent from December 2014. Production per cow averaged 1,894 pounds for December, 6 pounds above December 2014. This is the highest production per cow for the month of December since the 23 State series began in 2003. The number of milk cows was 8.64 million head, 29,000 head more than December 2014, and 1,000 more than November 2015.
Comments: 2015 was a transition year for our nation’s dairy farmers as the industry struggled with declining prices after the record high year of 2014. But now, as we look into 2016, low dairy prices will be the theme – at least for the first two quarters. Following the fulfillment of holiday orders in the last quarter of 2015, prices fell significantly. Butter, which started out in December 2015 at $2.90 a pound, dropped as low as $2.01 at the end of the month, but has since rallied to $2.20 at the end of January. 40-pound block cheddar was $1.71/lb at the end of November 2015, falling to a mostly stagnant $1.46 throughout the first month of 2016. Product prices for January 2016 for Class III will likely settle near $13.75 compared to $14.44 last December and $16.18 a year ago. The last time Class III was this low was in January of 2011. Class III will remain below $14 throughout the first quarter (Cropp, Bob. Memo to Dairy-L. January 23, 2016).

The USDA is forecasting milk cows to average 0.2% lower and milk per cow to average 1.8% higher netting a 1.6% increase in total milk production. Lower feed prices should help to offset lower milk prices, but many dairy producers will increase their cull rates. This may make the overall milk production increase for 2016 compared to 2015 lower than 1.6%, which will help prices rally later this year. The first half of the year will continue to bring lower exports as the still lingering buildup of world dairy stocks doesn’t help with market competition from the EU and New Zealand. Early estimates, however, show that New Zealand could be down on milk production as much as 10% for the July 2015 to June 2016 production year due to drought conditions, and lowered cow numbers (Cropp, Bob. Memo to Dairy-L. January 23, 2016).

As 2016 rolls along, milk prices will show improvement. Class III prices could be back into the $16’s by the end of the year, averaging $0.50 lower than 2015. Butter prices will play a key role in keeping milk checks stable, and the Average All Milk Price for 2016 could average $15.35 to $16.15, according to the latest USDA milk price forecast. However, a lot can change as the year moves along, and we will be watching closely the export market, domestic production, and 2016 will be a year of low dairy product prices - how low they will go is the question of the hour… and how long it will take for them to recover is on everyone’s mind.

Penn State’s December value of Income Over Feed Cost is $6.88, a 10.5% decrease from November, and the lowest value since summer, and is lower than any other December values from the past 5 years.

January’s Class III price will likely end up at $13.75, and will continue to stay below $14 for the first quarter of 2016.

In related news, 3 servings of dairy continued to remain a staple product in the newly updated USDA Dietary Guidelines for Americans, as an effort to provide excellent nutrition and nutrients to help combat our nation’s poor bone health (low bone mass) which afflicts 51% of women and 35% of men.
**COMING EVENTS:**

**February 12, 2016-Locally Grown Food Festival**
Union Hall, Corning, NY 5:00-8:00 p.m.  See page 2 for more details.

**February 12-13, 2016-Winter Green-Up Grazing Conference**
Century House in Latham, NY.  See page 2 for more details.

**February 17, 2016-Advanced Beekeeping**
Human Service Complex, 323 Owego St., Montour Falls, NY, 6:00-8:00 p.m. $20.00/person
Phone: 607-535-7161

**February 20, 2016-Penn/York Ag-stravaganza**
Genesee Environmental Center, Genesee, PA, 8:00 a.m.-5:00 p.m.  See page 3 for more details.

**February 23, 2016-Winter Crop Symposium**
Civil Defense Center, Bath, NY 10:00 a.m.-2:00 p.m.  DEC Pesticide Recertification Credits available.  Cost is $15.00/person with lunch provided.  See front cover for more details

**February 24, 2016-Managing Your Woods for Fun and Profit**
Civil Defense Center, Bath, NY, 6:00-8:00 p.m., See page 3 for more details.

**February 24, 2016-Lambing & Kidding Workshop**
Cornell Cooperative Extension Center, Canandaigua, NY, 6:30-9:00 p.m.  See page 4 for more details.

**March 5, 2016-24th Annual Rural Landowner Workshop**
Pioneer Central School, County Line Rd., Yorkshire, NY, 8:30 a.m.  See page 4 for more details.

**TRADING POST:**

**For Sale:**  4 x 4 round bales of mixed hay and wheat straw bound with twine. Hay has been tested. Large quantities available.  Please call: 607-535-4903