



ANNUAL REPORT 2012

The PRO-DAIRY Mission:

Increase the profitability and competitiveness of New York's dairy businesses through industry-applied research and educational programs that enhance farm profitability while advancing dairy professionals' knowledge, skills and enthusiasm.

For information on the PRO-DAIRY program, contact:

PRO-DAIRY

272 Morrison Hall
Cornell University
Ithaca, NY 14853

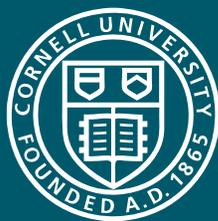


Dr. Thomas Overton

Director
tro2@cornell.edu

Tel: 607.255.4478
Fax: 607.255.1335

www.ansci.cornell.edu/prodairy



Cornell University
College of Agriculture
and Life Sciences

MAKING A DIFFERENCE IN
PEOPLE'S LIVES AND BUSINESSES



THE ANNUAL REPORT 2012 PRO-DAIRY STORY



MAKING A DIFFERENCE IN PEOPLE'S LIVES
AND BUSINESSES

PRO-DAIRY Mission

Increase the competitiveness of New York's dairy business through industry-applied research and educational programs that enhance farm profitability while advancing dairy professionals' knowledge, skills and enthusiasm.

2012 was a fiscally challenging year for the dairy industry but substantial growth in the dairy processing sector along with key commitments by New York State and Cornell to enhanced research and outreach capacity gives significant optimism as we move forward. Highlighted by the recent Yogurt Summit in Albany, it is clear that the dairy production and processing industry will continue to be a major economic engine for Upstate NY. Our challenge for 2013 will be to continue to build on this momentum and translate this into increased opportunity at the farm level.

PRO-DAIRY programs provide the major link for New York's dairy farmers and agribusiness professionals to critical research and resources, giving them the information needed to build and manage robust businesses. PRO-DAIRY's contributions to educational programming and applied research have helped New York to continue to grow its milk production and remain among the top dairy states in the United States. PRO-DAIRY understands that today's dairy farmers, regardless of size, seek information on how to improve profitability while continually managing their farms for responsible growth. This means managing for the well-being of their people, their animals, and their land.

PRO-DAIRY is committed to excellence in educational programming and applied research for the New York dairy industry in: farm business management, profit focused discussion groups, field crops and nutrient management, manure handling and integrated waste management systems including renewable energy, cattle housing, animal health, well-being and productivity, agricultural environmental management, dairy youth and extension educator programs. This year's annual report also profiles people who have benefited from PRO-DAIRY's programs, research and activities.

In 2011-2012, PRO-DAIRY:

- Involved more than 500 dairy producers and more than 200,000 cows, representing one-third of the state's cows, in its Discussion Group program that was created as a funding partnership with the New York Center for Dairy Excellence and the New York Farm Viability Institute. Groups are located in 31 counties with several multi-county and statewide groups. Participants and group focus areas represent the diversity of the New York dairy industry.
- Grew participation in the Cornell Dairy Farm Business Summary and Analysis program. PRO-DAIRY specialists worked directly with more than 100 New York dairy farms, representing more than 78,000 cows both individually and through group comparison, in business-focused discussion groups and other forums.
- Launched the Business Enterprise Activity Analysis Project to help dairy producers identify opportunities for financial improvement in specific areas of their businesses. 63 dairy farms representing nearly 52,000 cows participated in projects designed to determine the cost of harvesting milk and to harvest first cutting of haylage.
- Graduated the largest class to date of the Cornell Dairy Executive Program (CDEP). Participants found value in the program and 100% of participants attended all sessions. The 31 CDEP participants included 26 producers representing more than 22,000 cows. The newly recruited class includes 23 participants and represents more than 23,000 cows.
- Developed the Academy for Dairy Executives designed to meet local and regional needs of small- to medium-size producers, piloted the first program with nearly 20 participants in northern New York, and launched the second program in eastern NY with 21 participants.
- Provided leadership, in collaboration with US-EPA AgSTAR, USDA-NRCS, and NYSERDA, to develop and host the "Got Manure? Enhancing Environmental and Economic Sustainability" Conference in Syracuse, NY during March 2012. This conference had national visibility because of its integrated and innovative approach to address issues related to manure handling, treatment and management, and was attended by more than 300 participants.
- Partnered with Northeast Ag and Feed Alliance to develop and deliver the Herd Health and Nutrition Conference that was attended by the target audience of 113 agri-service professionals, plus 27 dairy farmers.
- Continued to partner with Eastern DairyBusiness on PRO-DAIRY's "The Man-



Dr. Thomas Overton - Director PRO-DAIRY

ager" section that is delivered to 17,250 dairy producers and agri-service professionals in the eastern U.S. The Manager also was delivered as a separate mailing to about 4,000 additional farms in New York. PRO-DAIRY specialists developed four sections focused on "Generation Next", "Environmental Hot Topics", "Profit Management", and "Forage Management Strategies".

- Continued the DairyFAST program focused on providing continuing education and networking opportunities for agri-service professionals in various regions of the state. This program was conceived in 2010 as a partnership between the New York Center for Dairy Excellence and PRO-DAIRY and continues as a partnership with the New York Farm Viability Institute.

- Partnered with NYSERDA on the Anaerobic Digestion

Work Force Development Project to train a workforce of supporting engineers, technicians, operators, and service personnel needed to grow the anaerobic digestion industry in New York and enhance renewable energy production from dairy biomass.

- Developed and conducted continuing education workshops for professional engineers who provide environmental and CAFO engineering services to New York State dairy farmers. Engineers earned credits through the Cornell School of Continuing Education who collaborated in the workshops.
- Worked with NY Department of Environmental Conservation and the Department of Agriculture and Markets on environmental/CAFO issues. PRO-DAIRY specialists partnered with other stakeholder agencies to work with NRCS to update the New York 590 nutrient management standard.
- Worked with NYS Department of Environmental Conservation on outreach related to recent changes in New York's water use reporting law. This integrated effort related to reporting tool use and outreach resulted in an increase from about 30 farms reporting water use in 2011 to more than 200 farms reporting water use in 2012.
- Developed and conducted the 2012 PRO-DAIRY Winter Management Series roadshow focused on "Group-Housed Management Systems for Calves". This program was attended by 368 participants at 8 sites and there are now more than 60 of these systems in New York State.
- Partnered with the Northeast Dairy Producers Association to develop and host the 2012 NEDPA Conference focused on key issues and opportunities for the New York dairy industry, along with cutting edge information on various aspects of dairy herd, business, and environmental management. The conference had a total attendance of 410 and included 152 dairy producers representing 154,799 cows, 162 agri-service professionals, along with students and educators.
- Had 22 youth in the statewide Junior DAIRY LEADER program, many of whom will go on to college to pursue agriculturally-related careers, nearly 100 youth in the Dairy Discovery statewide program, and more than 300 youth in 4-H and NY State Fair-related dairy youth activities.

Extensive collaboration helps PRO-DAIRY accomplish its mission. PRO-DAIRY's many collaborators are listed on the inside back cover. PRO-DAIRY especially appreciates the continued strong support of the New York State Department of Agriculture and Markets, the New York State Legislature, and the Cornell College of Agriculture and Life Sciences. New York Farm Viability Institute provides key additional financial support for PRO-DAIRY programs.

Since 1988 PRO-DAIRY specialists have committed themselves to provide top-notch programs, research and leadership to the New York State dairy industry. The results of this effort are clear: New York's dairy farms are among the leaders in U.S. milk production, dairy farm management and environmental stewardship.

Dr. Thomas Overton
Director, PRO-DAIRY

PRO-DAIRY Collaborators



PRO-DAIRY thanks the State of New York and the New York State Department of Agriculture and Markets for their financial support and years of commitment. Significant additional funding for PRO-DAIRY programs is provided by the New York Farm Viability Institute. Through collaboration with these partners and the 133 listed here, PRO-DAIRY will continue to provide expertise and leadership within New York's dairy industry.

Agricultural Engineering Services
Advanced Ag Systems
Advanced Dairy Services
AgModels, LLC
Agricultural Consulting Services
Agricultural Waste Solutions
Agrinetix
Agro-One Cooperative
Alta Genetics
American Dairy Association & Dairy Council
American Farmland Trust
American Protein Corporation
Arm & Hammer Animal Nutrition
Attica Veterinary Clinic
Balchem Corporation
Bank of Castle
Barton & Loguidice P.C.
Battenkill Veterinary Clinic
Bayer Animal Health
Blue Seal Richer Dairy Nutrition
BoehringerIngelheim Vet Medical
Bourdeau and Bushey Inc.
Brown's Feed
Capital Area Ag Consulting
Cayuga County Economic Development
Cargill Animal Nutrition
Cayuga Marketing LLC
Cayuga Renewable Energy LLC
Central New York Dairy, Livestock & Field Crops Program
Champlain Valley Agronomics
Community Bank NA
ConsulAgr
Cook's Consulting
Cooperative Feed Dealers
Cornell Cooperative Extension
Agriculture & Natural Resource Educators
Countryside Veterinary Clinic
County-based Soil and Water Conservation
District Programs
Cows Come First
Cuff Farm Services
Dairy One Cooperative Inc.
DairyJea/DFA
Dairy Support Services
Dehn Associates
Diamond-V
EASTERN DairyBusiness Magazine
Eastview Veterinary Clinic
Elanco Animal Health

Farm and Country Insurance
Farm Credit East
Feed Commodities International
Genex/CRI
Granville Veterinary Services
Growmark FS
Harry Austin Milling
Hewitt Brothers
Holtz-Nelson Consulting
Intervet/Schering-Plough Animal Health
Jefferson County Industrial Development Agency
JEFO, USA
Jess Engineering
Jim Henion
Dr. John Ferry
Keseca Veterinary Clinic
Lallemand Animal Nutrition
Land O'Lakes/Purina Feed
Land O'Lakes Animal Milk
Linwood Management
Lowville Farmers Cooperative
Lowville Digester Work Group
Lutz Feed
McDowell & Walker
McLanahan Corporation
Mercer Milling
Merck Animal Health
Miconutrients, Inc.
Midland Bioproducts
Midstate Veterinary Clinic
New York Animal Agriculture Coalition
New York Farm Bureau
New York Organic Dairy Initiative
New York State Agriculture
Mediation Program
New York State Cattle Health
Assurance Program
New York State Certified
Agricultural-Environmental
Planners
New York State Department of Conservation, Division of Water
New York State Energy Research
Development Authority
New York State Soil & Water
Conservation Committee
Norbc
Northeast Agricultural Education
Foundation
Northeast Agriculture
Technology Corp.
Northeast Ag and Feed Alliance

Northeast Certified Crop Advisor
Program
Northeast Dairy Producers Association
Northeast Farm Credit
AgEnhancement Program
Northern NY Dairy Regional
Extension Team
Northwest New York Dairy, Livestock
& Field Crops Program
Novartis Animal Health
Novus International
Palmer Veterinary Clinic
Papillon Agricultural Corp
Pennfield Corp.
Perry Veterinary Clinic
Pfizer Animal Health
Pioneer Hi-Bred
Poulin Grain Inc.
Progressive Dairy Solutions, Inc.
Quality Milk Production Services
Rapp Dairy Nutrition
Reisdorf Brothers
Renaissance Nutrition Inc.
Rupert Veterinary Clinic
Shur-Gain USA Inc.
Springville Veterinary Services
Spruce Haven Farm
& Research Center
Starland Veterinary Services
Synergy Biogas, LLC
The Old Mill-Troy Inc.
Twin Birch Farm
U.S. Geological Survey
Upstate Niagara Cooperative
USDA Farm Service Agency
USDA Natural Resource
Conservation Service
Venture Milling
Ward and Van Scoy
Watertown Animal Hospital
West Central
Western New York Crop
Management Association
Western New York Energy LLC
Whitman's Feed Store
Wight and Patterson
William H. Miner Agricultural
Research Institute
Wyoming County Dairy Institute
Wyoming County Industrial
Development Corporation
Zinpro Corp.

Dairy Industry Communications and Outreach

PRO-DAIRY specialist: Julie Berry

PRO-DAIRY pursues several paths to reach New York dairy producers and agribusiness professionals. In addition to its popular and well-attended meetings, workshops and discussion groups, which attracted thousands of participants, PRO-DAIRY achieves its mission to advance dairy professionals' knowledge, skills and enthusiasm through agricultural press, an e-newsletter and on the Web.

Programs

- The Manager in Eastern DairyBusiness
- Dairy Profit Seminars
- e-Leader
- PRO-DAIRY on the Web

The Manager in Eastern DairyBusiness Magazine

Since 1999 DairyBusiness Communications has worked with PRO-DAIRY to provide educational materials to the dairy industry in a popular and well-read dairy publication. Starting in January 2009, the magazine was reformatted to serve the eastern U.S. dairy industry with the magazine re-named *Eastern DairyBusiness*.

PRO-DAIRY's *The Manager* is an educational section composed of 15 pages of professionally-prepared magazine articles published quarterly in February, May, August, and November. In addition, this PRO-DAIRY section is now mailed independently of the magazine to more than 4,000 New York dairy producers who do not regularly receive the magazine. The articles also appear on the PRO-DAIRY Web site to coincide with their publication in print.

During the 2011-12 program year, PRO-DAIRY specialists organized and developed the May 2011 section of *The Manager* with focus on "Generation Next" and including articles focused on career development of a variety of early career dairy industry professionals in dairy production, agribusiness or veterinary school. The August 2011 issue focused on "Environmental Hot Topics" and included articles on nutrient management in the Chesapeake Bay watershed, air emissions and greenhouse gas, manure spill response, anaerobic digestion, and manure options for small farms. The November 2011 issue focused on "Profit Management" and included articles on how to use profits to manage future milk price variability, five keys to profit, farm budgeting for better decision making, how to build and use working capital, debt management, and tax planning. The February 2012 issue focused on "Forage Management" and included articles on managing through the highly variable 2011 forage growing season, feeding strategies for 2012, identifying and dealing with molds and mycotoxins in feeds, reducing drought stress, what to do about forage shortage, and early maturing corn silage hybrids for consideration in 2012 among others.

► Impact

- Eastern DairyBusiness reaches approximately 17,250 dairy producers and agriservice professionals in 31 states east of the Mississippi. These dairies produce more than half of the nation's milk.

Dairy Profit Seminars

In addition to the magazine, PRO-DAIRY also partnered with DairyBusiness Communications to develop and deliver the annual Dairy Profit Seminars at Empire Farm Days. The 2011 seminars featured panel discussion on "Intensive Grazing", "Generation Next", and "Cow Comfort and Heat Stress Management" and were delivered to audiences of more than 100 participants daily. In addition, PRO-DAIRY coordinated a post-Empire Farm Days tour focused on cow comfort, heat stress management, and use of anaerobic digestion in bedding production on a New York dairy that was attended by more than 50 dairy producers and agri-business professionals.

► Impact

- Audiences at the Dairy Profit Seminars typically approach 200 attendees daily.

PRO-DAIRY e-Leader monthly electronic newsletter

In 2011, PRO-DAIRY initiated the PRO-DAIRY e-Leader monthly newsletter with an email circulation that has grown to more than 7,000 recipients, including farmers, agriservice professionals and legislators. The e-Leader features upcoming PRO-DAIRY events and conferences, specialist programs and recaps recent events. In addition, e-Leader provides timely information specific to the New York dairy industry that recipients are unlikely to receive from media-based newsletters that focus more on broad-based, national issues.

► Impact

- e-Leader provides timely meeting and issue news to over 7,000 farmers, agribusiness professionals and legislators each month.

PRO-DAIRY on the Web

PRO-DAIRY's popular Web site provides access to PRO-DAIRY materials and programs.

The major PRO-DAIRY Web sites:
<http://ansci.cornell.edu/prodairy>
<http://prodairyfacilities.net>
<http://dairyprofit.cornell.edu>
<http://manuremanagement.cornell.edu>

In addition, PRO-DAIRY specialists work closely with the following Web-sites that represent Cornell dairy industry-related programs:

<http://nmsp.cals.cornell.edu>
<http://dfbs.aem.cornell.edu>

New York Farm Bureau is proud to partner with PRO-DAIRY. The focus on dairy farm profitability, environmental management and stewardship, as well as human resource management and the latest technology is critical in order to keep dairy farmers in New York. As a member of the Norton family farm, I've seen first-hand what a difference a strong linkage with PRO-DAIRY makes for the farm's success. New York Farm Bureau is pleased that our grassroots member advocacy can help the PRO-DAIRY program have a positive impact on the viability of dairy farming.

Dean Norton
 President
 New York Farm Bureau



2011 – 2012 PRO-DAIRY Programs and Cow-Number Impact

Program	Approximate Number of Cows Represented (if available) and Attendance
Cornell Dairy Farm Business Summary and Analysis Program	78,936 (direct PRO-DAIRY contribution)
Dairy Profit Discussion Group Program	More than 200,000 cows (500 farms)
Eastern DairyBusiness Magazine (quarterly)	2.5 million (20 states)
Cornell Dairy Executive Program (2 classes)	55,000 (44 dairy producers)
Dairy Profit Monitor (monthly benchmarking tool)	57,826 (72 dairy farms)
Academy for Dairy Executives (northern and eastern NY)	17,030 (34 dairy farms)
Business Enterprise Activity Analysis Project	51,594 (63 dairy farms)
Winter Dairy Management Series	368 attendees (mostly producers) across 8 sites
Group-Housed Calf Symposium	280 attendees in-person (including 139 producers representing 5,767 cows and 47,696 heifers and 101 agri-service professionals) and 48 attendees by live webcast
Group-Housed Calf System Tours (in collaboration with Northeast Dairy Producers Association)	397 attendees (mostly producers) across 11 locations
"Got Manure? Enhancing Environmental and Economic Sustainability" Conference	Over 300 attendees
Herd Health and Nutrition Conference (with Northeast Ag and Feed Alliance)	19,020 cows (27 producers) and 132 agri-service professionals
NEDPA Conference (with Northeast Dairy Producers Association)	410 total attendees; 152 producers representing 154,799 cows and 162 agri-service professionals
Environmental/Nutrient Management/Professional Engineer Training	275,000 (all farms with nutrient management plans)

New York Dairy Industry

- 5,400 dairies, 610,000 cows
- 4th nationally in milk production
- 12.8 billion pounds of milk annually
- \$2.7 billion (est.) in farm-gate milk revenue annually

New York State has one of the largest dairy industries in the entire country and Governor Cuomo is leading the way with new initiatives to assure that New York's dairy industry continues to grow and thrive. The first-ever New York State Yogurt Summit is proof positive that dairy is big business here in New York. PRO-DAIRY is a major partner in these efforts. 2012 was a great year for dairy and we look forward to working with our partners at PRO-DAIRY to strengthen this industry even further in 2013.

Darrel J. Aubertine
 Commissioner
 New York State Department of Agriculture and Markets



As NEDPA Chair I appreciate the partnership developed with PRO-DAIRY over the years, which multiplies our efforts and delivers value to our membership, as we work together on various initiatives. As a dairy farmer I see first-hand the PRO-DAIRY programs in action, and from my travels in the industry, I know that the PRO-DAIRY program is unique in its capacity to deliver expertise, skill and applied research in an impactful way to our farms.

Neil Rejman
 Chairman
 Northeast Dairy Producers Association



Dairy Farm Business Management

PRO-DAIRY specialists: Jason Karszes and Betsey Howland

PRO-DAIRY Farm Business Management programs are designed to positively influence dairy business management skills through financial data collection and analysis, educational programs, group discussions, management training and network building. These efforts help to ensure dairy business' financial success.

Programs

- Dairy Farm Business Summary & Analysis Program
- Dairy Profit Discussion Groups
- Cornell Dairy Executive Program
- Dairy Profit Monitor
- Enterprise Analysis Project
- Academy for Dairy Executives

Dairy Farm Business Summary (DFBS) and Analysis Program

PRO-DAIRY specialists are directly involved with the statewide DFBS program, and collaborate with program director Dr. Wayne Knoblauch, Extension educators and producers across the state to improve business success and increase participation in the program. The 55-year-old DFBS, a partnership with the Cornell Dyson School of Applied Economics and Management and Cornell Cooperative Extension, provides producers with business analysis reports based on their annual production and financial data. With PRO-DAIRY involvement in the DFBS program, DFBS has compiled business analysis summaries for small herds, large herds, grazing herds, and organic herds, so they are able to compare their businesses within similar types of farms.

► Impact

- PRO-DAIRY specialists either worked directly with dairy producers or with Extension and agriservice

professionals to conduct the DFBS with 104 New York dairy farms, representing 78,936 cows. That's an increase of 6.1 percent from the prior year. 97% of the farms that participated in the program in 2010 completed the DFBS for 2011.

- Reports and presentations were developed and presented at 12 meetings, with 100 farms in attendance, focused around the DFBS and use of the information in managing the business. Case studies developed from the DFBS summary were used to help train farm management consultants to use the DFBS with dairy businesses.

Dairy Profit Discussion Groups – Business Focused

Through the Dairy Profit Discussion Group Program, nine discussion groups around the State focus on and share business performance data at their meetings, and use the Dairy Farm Business Summary and the Dairy Profit Monitor data for these discussions. PRO-DAIRY specialists directly facilitate five of these business-focused groups, and prepare reports and interact with four additional groups that are facilitated by local extension, interacting with 77 farms representing 49,998 cows.

► Impact

Because of their participation in a Dairy Profit Discussion Group – Business Focused:

- 95% of participants made changes to some aspect of their business
- 93% of participants felt that they had improved their business
- 52% positively changed income and/or expenses
- 95% stay in contact with other members of their groups outside of formal meeting

Dairy Focus for New York State

4-H Career Exploration Program is held annually across the Cornell campus. Participants, between the ages of 15 to 19, during three-days learn about the dairy industry and its careers, build personal and professional skills, and develop a positive attitude about the dairy industry. Youth are involved in hands-on learning of skills and knowledge in the areas of veterinary science, dairy nutrition and production management. Participants meet with faculty in the Department of Animal Science at Cornell and industry professionals. They participate in farm-level analysis and research practices used by veterinarians, nutritionists and herd managers.

► Impact

- In 2011, 21 youth participated.

Animal Crackers

This is an annual event for youth age 9 to 13 years. Participants meet Cornell faculty and students, learn about different aspects of animal care, interact and exchange information with professional producers and industry experts. Hands-on workshops are planned for each species group, and dairy is now featured on even years.

► Impact

- 140 youth and parents participated in the dairy track of the Animal Crackers program in May 2012. On a 1 to 5 scale, with 5 being the highest score, the evaluation rated the overall program as a 4.63, and their knowledge and understanding of dairy cattle in program specific areas increased to a score of 4.87, and the rating for whether they would recommend the program to other youth was 4.65.

Traditional 4-H Dairy Youth Programs

These programs provide opportunities for young people ages 9 to 19 with activities such as dairy judging and showing, dairy quiz bowl, and give youth the opportunities participate and experience positive dairy cattle and dairy related activities in the industry.

► Impact

- Dairy cattle quiz bowl, a Jeopardy-like activity of knowledge, understanding and current issues in the dairy industry attracts 400-plus participants yearly.
- 300 youth participate in the dairy cattle judging segment, focused on teaching youth skills and knowledge to select good, functional, dairy cattle and heifers and decision making skills.
- Dairy Challenge attracts approximately 150 young people annually to test their skills on many aspects of the dairy field.



"Junior DAIRY LEADER helps develop passion for what we do," said Mary Clark. The 2006 graduate of the program is not from a farm,

but pursued a BS in agriculture from SUNY Cobleskill, in part because of the program. Exposure to different farms and the challenges they face helped prepare her to creatively address challenges while working as a legislative assistant to assemblyman Bill Magee, agriculture committee chair, after graduation and now as a dairy nutritionist for Shur Gain.



"Junior DAIRY LEADER workshops helped me develop teamwork and I networked with friends I still have

today," said Stephen Gould, who is a senior animal science major at Cornell University. He plans to return to his family's farm HaR-Go Farm in Pavilion after graduation, and credits the program with exposing him to other industry professionals who supported his choice to attend college.



Dairy Youth Programs

PRO-DAIRY specialist: Deborah Grusenmeyer

The future of New York State dairy farms and agribusiness rests with young people who have the enthusiasm, knowledge, skills and commitment to create successful careers in the field. How can young people learn about dairy career options? How can they get hands-on experiences in these careers and build skills? How can they meet people with a passion for dairying? Youth dairy programs are the answer.

Programs

- Junior DAIRY LEADER
- Dairy Discovery
- 4-H Career Exploration/Dairy Focus
- Animal Crackers
- 4-H Dairy Youth Programs

Junior DAIRY LEADER Program

In 2011 to 2012 the Junior DAIRY LEADER Program had 22 youth between the ages of 16 and 19 years participate in the program. During the year-long program, the youth:

- prepare for successful careers in the dairy industry
- gain an in-depth understanding of the dairy industry's scope and opportunities
- are exposed to progressive and profitable agricultural businesses
- learn communication and teamwork skills that aid in problem solving
- explore and enhance their career planning through discussions with dairy industry leaders
- develop personal, professional and leadership skills necessary to make positive contributions to the dairy industry
- obtain work experience in the dairy field
- develop technical skills through training workshops

Through visits to Wisconsin, National 4-H Dairy Conference, and agri-businesses in New York, the young people interacted with professionals who have positive and enthusiastic attitudes about the dairy industry and learned about opportunities that the dairy industry offers.

► Impact

- Summarizing the program over the past twelve years, 98% of the 261 Junior DAIRY LEADER graduates continued their education beyond high school.
- More notable is that 96% of these youth have attended or are attending college to study agriculture; 50% of these youth indicated that they were not planning to pursue agricultural careers or were undecided prior to participating in the Junior DAIRY LEADER Program.

Dairy Discovery

Dairy Discovery, a statewide program for 15 to 19 year olds, is a hands-on workshop held annually at Cornell University. Young people spend a day and a half on campus learning about dairy careers and probing into specifics of dairy cattle production. For example, during the milk quality and management focus of Dairy Discovery, young people rotate through a series of hands-on stations observing and participating in technical skill training related to such topics as mastitis management at the cow level, regulatory aspects of SCC, the biology of the mammary system, marketing dairy products, and the economics in milk quality. Participants rotated through a series of hands-on stations learning about keys areas, including dairy nutrition, herd health, milk quality, housing/cow comfort, and financial analysis and then worked as a team to analyze a real farm. The participants then reported back to the group about the strengths, weaknesses, and areas of opportunity for their case farm.

► Impact

- In March of 2012, 90 young people and adults participated in this program, which focused on whole-farm management and analysis.
- Participants in this program represented 41 farms from New York, Ohio and Pennsylvania, 14,835 cows and 11,424 heifers.
- On a 1 to 5 scale evaluation, with 5 being the highest score; overall program was rated a 4.48; increased knowledge and understanding of what to look for and task to use to analyze the dairy business was 4.14; and participants rated their interest in recommending this program to other participants a 4.71.

Comments from the business-focused discussion group participants.

"The group discussions coupled with individual farm visits to me are the most valuable. There are many ways to produce milk and ultimately money and this process makes you question your decisions. It challenges you to think about it differently."

"It has been a wonderful experience. It is always nice to get away from the farm and day to day operations and to have an opportunity to step back and re-evaluate the business. We always feel refreshed and usually have a very productive conversation on our way home. The experience is extremely valuable."

Cornell Dairy Executive Program

This multi-session executive level management training program offers dairy producers the opportunity to increase their leadership skills and management acumen. Working with world-class instructors, members of CDEP perform comprehensive evaluation of their businesses and develop strategic business plans. The program consisted of three one-week programs during the year, along with an alumni session. Five alumni attended parts of the last two sessions. The program continues to adapt to meet the needs of the participating dairies and supports their interests to grow and expand with the dairy business. All of 2010 to 2011 participants completed their program. A new class of 23 participants was recruited for the 2011-2012 class. Of these 23 participants, 18 are dairy producers, representing over 23,000 cows. For these 18 farms, they estimated that over the next few years they will more than double their herd size.

► Impact

As a result of their participation in CDEP Class 2010-2011:

- 93% of participants felt that they improved some aspect of their business.
- 97% made a change in their business as a result of attending the program.
- 52% saw a positive impact to revenue and expenses within 12 months of attending.
- 69% felt that 50% or more of the information and ideas presented during the program were new and useful.
- 100% felt that the contacts developed during the program were important.
- 97% would recommend the program to other dairy producers.



Blake Gendebien
Twin Mills Farm, LLC
Lisbon, NY

Programs:
Dairy Farm Business Summary
Dairy Profit Monitor
Cornell Dairy Executive Program

The Cornell Dairy Executive Program is the best professional course Blake Gendebien, owner of Twin Mills Farm LLC, said he has ever participated in.

Gendebien, a graduate of Penn State University, worked in agriculture sales and marketing positions for six years, serves on a number of community and agriculture boards of directors, and co-founded a foundation to support families whose children have pediatric cancer. With his wife Carmen, Gendebien purchased a farm neighboring to his father Peter's in 2003. They merged the equipment and machinery into a LLC, but kept the land separate. Twin Mills has grown from 56 to 150 cows and expansion plans are developed. The farm family has also grown with the addition of children Miles, age 8, Truman, age 7 and Noah, age 5.

"I don't often get off the farm and it's helpful to know that we share successes with other farmers and that we share challenges with other farmers, both from both larger and smaller farms," Gendebien said. "The executive program was helpful in learning about my own risk tolerance and comfort with growth. It helped me to manage my employees better. It helped me understand how my business partner, my father, was feeling about growth. And it helped me to develop confidence because of the interaction with other farmers in the program."

Also helpful, said Gendebien is his four-year participation in the annual Dairy Farm Business Summary and Analysis Program. He also recently began monitoring the farm's performance with the monthly Dairy Profit Monitor.

"We enjoy it when Jason Karszes and Betsy Howland come. Jason and Betsy have really helped me get more serious and consistent," Gendebien said. "It's an introspective process." Karszes leads regional group discussions around the Dairy Farm Business Summary.

"We chose to participate in order to keep better track of my own farm information and to make better management decisions," Gendebien said. "It has also allowed me to have healthy business conversation with my neighbors who also participate."

Through participation in PRO-DAIRY programs Gendebien said he has developed the confidence to make expansion and improvement plans that are at his "comfort level." Through business analysis Gendebien has determined it currently makes more sense to sell corn off the farm's 800 acres than to add more cows. He is poised for growth when conditions are right; he has met with an engineer, has an expansion site-work plan and has already purchased parlor equipment.

"Our pace of growth," he said, "will follow market conditions."



Dairy Profit Monitor

This is an online business analysis tool that provides producers and their consultants a monthly snapshot of key operating parameters and efficiencies at the farm level continues to be updated. With this program producers can track progress and trends over time, assess impacts of management changes, and highlight potential areas of opportunity. They can also create a customized benchmark report for a particular month based on selected characteristics. The ability to compare with farms of similar size, in a certain area, using similar management practices allows farm business owners and managers the opportunity to create a more meaningful comparison report for their farm. Information from the DPM program is used in a variety of venues, including business-focused discussion groups, on-farm Dairy Profit Teams, management meetings set up by the farm to assess progress and goal setting, and case farm projects for college students.

► Impact

- DPM was used by 72 New York dairies representing 57,826 cows.
- PRO-DAIRY staff presented educational programs centered on the Dairy Profit Monitor and decision making to nine different groups during the year.
- A three-year comparison of the same 48 farms that used the Dairy Profit Monitor as a management tool on their farms was presented in the 2012 NEDPA Conference proceedings.
- Dairy Farmers of America used the Dairy Profit Monitor as the basis for a discussion group they formed this year and hope to replicate this to other regions of the country in 2012.



PRO-DAIRY collaborated with Farm Credit East in early 2009 to develop a tool dairy managers and their consultants could use to analyze the cost of different dairy enterprises. In 2012 funding for Enterprise Activity Analysis Projects was restored by New York Farm Viability Institute and two main target areas were analyzed: milk harvest costs and first cutting haylage costs.

► Impact

- 63 farms participated in these projects representing 51,594 cows.
- Projects are being completed and a Milk Harvest Cost Calculator is anticipated in late 2012.
- Analysis of the Cost of Manure Hauling was also initiated with data collection in 2012.
- An earlier project, cost of the reproduction program, was finalized with a report published in the 2012 NEDPA Proceedings. A cost calculator is now available on the PRO-DAIRY website.
- Data from these projects was used in Fall 2011 for two Dairy Profit Discussion Groups.

Academy for Dairy Executives

PRO-DAIRY specialists Jason Karszes, Betsey Howland, Kathy Barrett, John Conway, Karl Czymbek, and Lee Telega worked with the Northern New York Extension Team and the Northern NY Dairy Institute, covering the counties of Lewis, Jefferson, St. Lawrence, Franklin, Clinton, and Essex, to develop educational programs targeted specifically on management topics needed to successfully run modern dairy businesses. An in-depth program focused specifically on management has not been offered for more than 10 years, and this program targets the new generation returning to farms and the many existing farms that changed over that time.

Starting in the summer of 2010, PRO-DAIRY staff and the Northern New York Extension team developed a pilot program for the academy, including meeting formats, topics to be covered, and material preparation. A program consisting of three two-day sessions focused on various business, financial, and human resource management topics was developed. 10 agri-businesses across Northern New York provided partial financial and marketing support for the program. The first two sessions were held in January and March of 2011, with the third session held in November 2011.

► Impact

- A total of 18 participants including 13 dairy producers representing nearly 9,000 cows participated in the program, with 15 completing all three sessions.
- With the success of the program, the program is being offered for a second year in Eastern New York, with 21 participants for the first session in January 2012 representing 8,030 cows.

PROGRAM: PRO-DAIRY Group-Housed Calf Symposium



Converting calf housing from individual pens to group housing is becoming a practice of the future, and PRO-DAIRY is leading the way by bringing together thought leaders and the farmers who are implementing the practice on the farm.

A sold-out crowd of over 275 dairy farmers from across the country and their advisors gathered in East Syracuse in December 2011 to learn about group-housing and feeding systems at a PRO-DAIRY "Group-Housed Dairy Calf Systems" symposium. Others joined online for a webinar.

"We have an ancient contract to give calves what they need for life, growth, health and comfort. Group feeding and housing move closer to nature's way," said Dr. Neil Anderson, Ontario Ministry of Agriculture, who spoke at the symposium.

Participants at the symposium heard late-breaking research and learned about auto-feeders, acidified self-feeders and positive pressure direct ventilation.

The symposium was followed by farm tours in Central, Eastern, Western and Northern NY. Group-housed dairy calves were also featured at PRO-DAIRY's Winter Dairy Management series in February and the Northeast Dairy Producers Conference in March.

"We know of over forty producers in NY and VT who are implementing group housing and feeding. Within that group of producers and advisors is a significant body of knowledge. The symposium was a first attempt to bring this emerging knowledge base together with those we consider experts



in this field, and to identify the key questions that remain about how to fully capitalize on this approach to raising dairy calves," said Frans Vokey, dairy extension educator for Cornell Cooperative Extension of Lewis County, NY, who was part of the organizing team.

"There has been a steady increase in interest since we started planning in April," he said. "Word has spread in this region that group-housed calf systems may afford dairy producers the opportunity to make calf rearing more enjoyable and rewarding and at the same time better for the business. Research is making it very clear that giving the young dairy calf a high plane of nutrition has major implications for lifetime milk production; group housing and free-choice feeding systems are a nice fit as a way to make that happen."

Success of the program resulted from an ad hoc partnership of PRO-DAIRY, Countryside Vets, Rupert Vet Clinic, Poulin Grain and Cornell Cooperative Extension. And from the farmers who served on the panels, served as moderators, and hosted tours.

"I love calves but this system put the joy back into raising calves," said Mary Kelly, Kelly Farms, who participated on a producer/veterinarian panel at the program.

The second annual group-housed calf program has drawn international interest and is scheduled for December 2012. PRO-DAIRY is already working with farmers who have implemented changes since the program. Demko Farms in Martinsburg, NY has built the first fully-enclosed, insulated and ventilated group-housed calf barn. The barn was engineered by PRO-DAIRY and is featured in a separate profile.

"One year later number of farms with this system has more than doubled and new start-ups are being planned all over. Among farms with new systems there may be a slight tendency toward larger dairies, so calf numbers in group-housed systems are proportionally up," said PRO-DAIRY's John Conway.

Symposium proceedings are online at: http://www.ansci.cornell.edu/dm/CalfSymposium_OrderForm.pdf.

Field Crops/Nutrient Management

PRO-DAIRY Specialists: Karl Czymmek and Lee Telega

among those experienced with group-housed calf systems in advance of the symposium.

- A full-day, comprehensive symposium for farmers with systems, farmers wanting to learn more and agri-service professionals who support farms with group-housed calf systems.
- Follow-up tours in 11 locations across NYS.
- A slightly truncated version of the symposium with in-state speakers at the 2012 "Winter Dairy Management" series.

► Impact

- 76 people attended the facilitated discussion for farms with group-housed calf systems. 280 people attended the sold-out symposium and 48 participated via a Webinar. 397 people attended the 11 tour sites. Over 368 people attended the eight NY Winter Dairy Management locations.
- Many new start-up group-housed calf systems in NYS and VT were directly related to these programs. The number of systems in existence prior to the symposium was estimated at 56 and has grown since to over 75.

■ A large percentage of those with systems were polled. All express productivity and/or labor savings gain over previous management systems. Digestive problems are "nearly non-existent". Respiratory problems vary by farm and individual barn environment. Ventilation improvements are being made and evaluated incrementally. To our knowledge, no new start-up has reverted to their prior system.

- An initial economic evaluation of four farms with group-housed calf systems was conducted in Fall 2011. Performance was compared among the systems, with varied feeding systems, and a group of 11 top-performing farms with conventional systems. Two of the systems had higher costs of raising calves and two had lower costs. A more robust economic analysis is slated for Fall 2012.

Continuing Education and Program Planning for Dairy Educators

CCE Dairy Educators help plan and implement phases of PRO-DAIRY production programs. A side-benefit is that we stay plugged in to educational needs of our field staff. We coordinate three days of dairy-related training for 15 to 35 educators, depending on the topic.

COLLABORATORS

Steering group

Dr. Mark Thomas, Countryside Vets
Dr. Bob Ceglowski, Rupert Vet Clinic
Dr. Jerry Bertoldo, NWNYS Dairy Team
Frans Vokey, Lewis Co CCE
John Conway, PRO-DAIRY
Heather Darrow, Cornell Dairy Mgt

Tour Host Farms

Southtown Dairy, South New Berlin
Poverty Hill Farms, Albion
True Farms, Perry
Woody Hill Farms, Salem
Kelly Farms, Rensselaer Falls
Allenwaite Farms, Schaghticoke
Murcrest Farms, Copenhagen
Beller Farms, Carthage
Woods Hill Farm, Turin
Lawnhurst Farms, Stanley
Cornell T&R Center Dairy, Harford

Winter Dairy Management Case Farms

Southtown Dairy, South New Berlin
Poverty Hill Farms, Albion
True Farms, Perry
Woody Hill Farms, Salem
Kelly Farms, Rensselaer Falls

Group-housed Calf Symposium Presenters

Dr. Mark Thomas, Countryside Vets
Dr. Bob Ceglowski, Rupert Vet Clinic

Dr. Neil Anderson, OMAFRA
Dr. Ken Nordlund, University of Wisconsin
John Hanchar, NWNYS Dairy Team
Dr. Mike Van Amburgh, Cornell Dairy Mgt
Dr. Rodrigo Bicaхло, Cornell Vet School

Winter Dairy Management Presenters

Dr. Mark Thomas, Countryside Vets
Dr. Bob Ceglowski, Rupert Vet Clinic
Dr. Jerry Bertoldo, NWNYS Dairy Team
Jackson Wright, NWNYS Dairy Team
Curt Gooch, PRO-DAIRY
John Hanchar, NWNYS Dairy Team
John Conway, PRO-DAIRY
Dr. Kim Morrill, NENYS Dairy Team
Dr. Larry Chase, Cornell Dairy Mgt
Dr. Mike Van Amburgh, Cornell Dairy Mgt
Dr. Paul Virkler, Cornell Vet School
Kerri Bartlett, Steuben Co CCE

Winter Dairy Management Site Managers

Dr. Jerry Bertoldo, NWNYS Dairy Team
Jackson Wright, NWNYS Dairy Team
Dr. Kim Morrill, NENYS Dairy Team
Meghan Filbert, Delaware Co CCE
Dave Balbian, CNY Dairy Team
Kerri Bartlett, Steuben Co CCE
Frans Vokey, Lewis Co CCE
Ron Kuck, Jefferson Co CCE
Lisa Kempisty, Chautauqua Co CCE
John Conway, PRO-DAIRY

The PRO-DAIRY Field Crops/Nutrient Management Program continues to focus on providing nutrient management educational programs with particular emphasis on reducing fertilizer costs, accounting for manure nutrients, identifying related environmental benefits, Concentrated Animal Feeding Operations (CAFO) and nutrient management compliance, CAFO Permit and training for farm staff to increase awareness of regulations and requirements and to reduce the risk of causing water quality problems. As part of this focus, PRO-DAIRY develops and delivers basic nutrient management training for the public and private sectors. In addition, it expends significant effort to work with the staffs of the Departments of Agriculture and Markets and Environmental Conservation on CAFO and environmental related issues.

Overall, more than 1,150 people attended nutrient management programs that involved PRO-DAIRY efforts, mostly farm managers and staff, CAFO planners and support staff, Natural Resources Conservation Department (NRCS), Soil and Water Conservation Districts (SWCD), and farm neighbors.

Programs

- CAFO Off-Road Show
- NRCS 590 Nutrient Management Standard
- Soil Fertility Research and Education
- NY Water Use Reporting Law
- AEM Program Support
- Policy Issue and Education

CAFO Off-Road Show

PRO-DAIRY continued for the fourth year to develop and deliver basic nutrient management training, this year reaching 48 participants, consisting mostly of new public and private sector conservation planning staff through basic CCA and CNMP training sessions. The program was originally designed to meet DEC training credit requirements required in the ECL CAFO Permit. It focused on helping farm staff appreciate the regulatory environment faced by dairy managers and on becoming better prepared for field applications and related emergencies. However, many farmers who participate in the Off-Road Show are not eligible for the credit, as most Large CAFOs continue to operate under the administratively extended GP 04-02 CWA Permit, yet they continue to schedule trainings. This response from the farm community represents how proactive dairy producers continuously improve environmental management. The program is now designed to reach all farm staff and emphasizes issues of safety, regulations and the importance of following application rates, spreading setbacks, keeping records and knowing what to do in case of a spill or related emergency.

► Impact

- In 2011-12, the program was delivered at five locations to 140 persons representing 25 dairies, about 20,000 cows, and five custom manure haulers/applifiers.

NRCS 590 Nutrient Management Standard

PRO-DAIRY continues to devote significant effort to work with the Departments of Agriculture and Markets and Environmental Conservation staff on CAFO/environmental related issues. PRO-DAIRY staff partner with other stakeholder agencies to work with NRCS to update the NY 590 nutrient management standard. The federal template for this document contemplates eliminating manure spreading on frozen, snow covered or saturated ground, but in the end defers to states to make the final decision and identify conditions where manure can be applied. The committee is addressing this issue in a way that will protect the environment and allow farmers to farm.



Soil Fertility Research and Education

PRO-DAIRY continues to work with the Nutrient Management Spear Program (<http://nmsp.cals.cornell.edu/guidelines/nutrientguide.html>) in a strong and productive partnership to develop and interpret soil fertility research data from commercial and research farms alike for the benefit of all NY's dairy industry.

► Impact

- In partnership with the Spear Program, PRO-DAIRY has secured funding for three-year, multi-location replicated on-farm trials to test potential for a corn silage yield increase from direct injection of manure over plow-down of manure. Though injection is slower and requires more power, preliminary plot data shows a significant yield response to direct injection. If proven, the yield increase would be substantial enough to override extra costs of the practice.
- An ongoing joint PRO-DAIRY and Spear project relates to the Chesapeake Bay Program. PRO-DAIRY recently summarized a study showing the EPA-preferred method of using soil P saturation to limit P applications does not bring any advantages to NY over our current P index and these results are currently in-press.
- PRO-DAIRY efforts also continue to support DAM staff (Greg Albrecht), DEC staff (Jacqueline Lendrum) and USC staff (Aaron Ristow) to address nutrient management related issues relating to implementation of NY's upper Susquehanna TMDL work plan. This effort continues to strengthen the case that NY's broad AEM partnership does an excellent job of protecting our natural resources.

NY Water Use Reporting Law

Another joint project involved colleagues Lee Telega and Curt Gooch to work with DEC's Richard Kruzansky to reach out to NYS dairy producers about recent changes to NY's water use reporting law and related requirements. This effort required significant communication with DEC, evaluation of the legal requirements and DEC's reporting tools. PRO-DAIRY then created an outreach document specifically for dairy producers, along with instructions for completing the DEC reporting form.

► Impact

- This effort contributed to an increase of about 30 farms reporting in 2011 to over 200 farms reporting in 2012.

"The water withdrawal law is an effective way to manage our state's water resources," said DEC Commissioner Joe Martens.

"PRO-DAIRY has been a key partner in implementing the law by getting the word out and providing assistance to New York farmers in meeting the requirements."

Agricultural Environmental Management (AEM) Program Support

The NYS Department of Agriculture & Markets' Agricultural Environmental Management (AEM) program assists dairy and other producers to identify and address environmental issues on their farms. Directed by a Governor-appointed State Committee and working through local Soil & Water Districts and Cornell Cooperative Extension, AEM offers educational, technical and cost-sharing support directly to producers. PRO-DAIRY provides direct support and coordinates other Cornell University expertise to support the research, scientific and educational needs of AEM.

► Impact

- Assisted in all stages of Round 18 of the Agricultural Non-Point Source Abatement & Control Grants Program, including evaluation of various practices being funded, technical adjustments to the Request For Proposals, and reviewing and scoring grant proposals. Since its inception, the grants program has provided over \$110 million for the planning and implementation of conservation practices on NY farms. Over half the farms that receive grants are dairy operations.
- Provided perspective, comments and edits for the revision of the AEM Tier II Farm Assessment Worksheets, including pasture management, soil management, management of dairy feed nutrients, forest management and stream bank and flood plain management.
- Planned and executed an educational tour of pasture-based dairy operations for members of the Technical Advisory Committee (TAC). The TAC is comprised of staff from several state agencies, Cornell and the District Employees Association. Several members of the TAC have limited experiences with farming operations. For the past several years, one of the TAC meetings has included an educational event that PRO-DAIRY assists in arranging. This year, however, due to the extensive workload caused by summer flooding, the educational event was postponed.
- Participated in the Soil & Water Conservation Water Quality Symposium as a panelist on preparing grants for the Agricultural Non-Point Source Abatement & Control Grants Program.

Like New York State's dairy industry, PRO-DAIRY also has a multiplier effect. For every dollar of output on a dairy 81 cents of additional money goes into the economy. It's safe to say that every dairy producer and agribusiness professional who participates in PRO-DAIRY programs is a multiplier, carrying the knowledge and skills learned to clients, friends and neighbors.

Here's a summary of PRO-DAIRY educational programs that reach beyond the meetings to enhance the knowledge base of many others.

Programs

- DairyFAST
- 2012 NEDPA Conference
- Group-Housed Calves Programs, Tours and Education
- Continuing Education and Program Planning for Dairy Educators

DairyFAST: A collaborative program with the New York Farm Viability Institute

Agri-service professionals play a key role in disseminating information to dairy producers. As farmers implement management practices and appropriate technology they turn to agri-service professionals for information and advice. Conceived in 2010 as a partnership between PRO-DAIRY and the New York Center for Dairy Excellence, the DairyFAST (Farm Advisor Skills Training) program provides professional development and networking opportunities for agri-service professionals and enable them to have a positive impact on their farm clientele.

Key program features:

- In collaboration with the New York Farm Viability Institute a series of educational opportunities are offered quarterly in Central New York.
- Topics for the quarterly programs are determined by input from an advisory board of agri-service professionals and producers. In addition, surveys are completed by the agri-service professionals who attend the programs. Topics cover a broad range of subjects, cutting across most aspects of the dairy farm business.
- A variety of educational methods has been employed, including presentations, tours, and facilitated discussion.

► Impact

- The DairyFAST program has addressed four critical topics for the dairy industry: risk management, forage quality, animal welfare and cow comfort, and using income over feed cost as a key metric.
- Over 30 agri-service professionals participated at

each site and feedback has been very positive, with consensus for solid impact in this audience.

2012 NEDPA Conference

The biennial Northeast Dairy Producers Association (NEDPA) conference has always been a premier event for dairy producers and other professionals from New York and beyond. The conference has a reputation for presenting cutting-edge information on dairy production, management and current issues.

The conference's success rests in large part on the collaboration between PRO-DAIRY and NEDPA. Program development, led by PRO-DAIRY director Tom Overton, targeted major dairy themes, including:

- "The World in Chaos – Impact on US Agriculture and the Dairy Industry"
- "The UK Perspective – Dairy Farm Growth and Capturing Value from the Marketplace"
- "Industry Growth in Wisconsin – Role of the Producer in Public Education and Industry Leadership"
- Panel Discussion on "Challenges and Opportunities in the New York Dairy Industry"
- "Technology in the 21st Century: Making Safe, Affordable, and Abundant Food a Global Reality"
- "Impact of New Genomic Technologies on Herd Improvement and the Dynamics of Replacement Programs"
- "Managing Multiple Sites – Use of Activity-Based Accounting Systems in Management"
- Cornell Research and Program Updates focused on whole-farm nutrient balance, transition cow diagnostics, and transition cow management strategies
- Mini-panel: "Group-Housed Feeding Systems for Calves – The Facts on Performance and Health and How to Get it Right"
- "Milk Fat and Human Health – Separating Facts from Fiction"

► Impact

- The conference was attended by 410 dairy producers, agri-service-professionals, Cornell faculty, staff, and CCE educators, and students from Cornell and SUNY Morrisville.

Group-Housed Calves Programs, Tours and Education

A working group of PRO-DAIRY staff, CCE Extension Specialists and practicing veterinarians planned a campaign to create awareness for and provide technical know-how to start up a successful group-housed, ad libitum-fed calf system. Campaign components included:

- Newsletter and four trade magazine articles exploring why and how this system is used and performance/financial benefits.
- An evening, facilitated discussion session



Joe Martens
DEC Commissioner



**Bret Bossard
Barbland Farm
Fabius, NY**

**Programs:
Dairy Profit Discussion Group
Cornell Dairy Executive Program
Dairy Farm Business Summary
Dairy Profit Monitor**

Barbland Dairy went from the highest to the lowest feed costs in their PRO-DAIRY profit discussion group from 2008 when the group started to their most recent meeting in October 2012.

"It helps us see areas of improvement. It has gotten a lot of us out to see different farms and what has worked," said Bret Bossard. Bossard became partner in 2008 and manages cows at Barbland Dairy with Luke Huysman, who manages crops, and Chip Engst, who manages financials. The farm was established in the 1950's by Engst's father.

The discussion group meets twice a year with owners and partners of 14 farms, and focuses on business performance, benchmarking and discussions around decision making and management practices.

"At the time the group started we were among the smallest in the group and at the lower end of production, but Jason believed in us," Bossard said. "It gives Luke and I time to stop and look at the numbers with some of the best dairymen in the Northeast and beyond. We're starting off young and growing and changing as we go."

Especially beneficial are the contacts and experience of the other participants. "It allows us as young, new owners and partners to compare financials with established dairymen," Bossard said. And, he said, the farmers use data from PRO-DAIRY's dairy farm business summary and dairy profit monitor as a starting point for these discussion.

Together with the encouragement of Jason Karszes and Huysman's recommendation as a previous graduate, Bossard participated in the Cornell Dairy Executive Program.

"It's definitely a time commitment," Bossard said, "but it's worth it because of the caliber of speakers and classmates."

Most useful, he said, was developing personnel management skills as the farm has 32 full-time employees, and the networking with classmates and speakers.

"It helps to get away to see the broader picture."

Bossard has benefited personally and professionally from PRO-DAIRY programs, but he said PRO-DAIRY's greatest resource is its people.

"PRO-DAIRY staff," he said, "know and are able to talk to some of the best people in the country and bring us the information we need when we need it."



Policy Issues and Education

Dairy Processing Growth

With announcements of new and expanding dairy processing plants, PRO-DAIRY has actively highlighted the importance of milk production and processing as an economic engine for the State's rural communities.

► Impact

- At the bequest of the Governor's office, PRO-DAIRY coordinated the development and distribution of a brainstorming document of 26 policy ideas to grow aggregate milk production in the state. A group of Cornell faculty who developed the document are also ready to provide assistance to policy makers on dairy pricing, marketing, supply/demand and other industry issues.

Regional Economic Development Council

Initiation of Regional Economic Development Councils in the summer of 2011 offered an opportunity for on-the-ground engagement of Cornell Cooperative Extension's local agricultural expertise.

► Impact

- With support and encouragement of PRO-DAIRY, 11 Extension professionals participated in seven of the regional agricultural/natural resources workgroups.

Farm Bill

Discussion of a new federal Farm Bill allowed for several forums for PRO-DAIRY and other Cornell expertise to share their knowledge and perspective on federal agricultural and food policy. PRO-DAIRY coordinated the expertise to participate in the NYS Agriculture & Markets' Commissioner's forums for input into New York's farm bill priorities.

► Impact

- Including PRO-DAIRY, nine Cornell faculty and staff presented at listening sessions held during the summer.
- PRO-DAIRY also participated in two faculty forums on federal farm policy and one forum hosted by a campus student organization. Over 50 faculty members and 40 students attended these forums.

Anaerobic Digester Adoption

Broad adoption of technology that generates biogas from the anaerobic digestion of the dairy manure and other organic food wastes has the potential to significantly reduce greenhouse gas emissions and the carbon footprint of milk.

► Impact

- PRO-DAIRY staff arranged for two tours of on-farm anaerobic digesters for legislative, agency staff and interested interest groups. 48 people attended the two events and learned about the challenges dairy producers face as they consider how this technology can fit into their operation and business plan.





Michael Haycock
Vice President
and Branch Manager

Michael Haycock, Vice President and Branch Manager
James Putnam, II Executive Vice President
Farm Credit East

Program:
Model created by
Farm Credit East and Cornell PRO-DAIRY
demonstrates the financial impact of meeting
environmental regulations for farms under 300 cows



James Putnam, II
Executive Vice President

PRO-DAIRY collaborated with Farm Credit East to develop a Knowledge Exchange Report focused on the financial implications of dairy farm expansion for farms under 300 cows.

"Farm Credit East greatly appreciates the opportunity to have partnered with PRO-DAIRY's Karl Czymmek to produce Financial Implications of a Dairy Farm Expansion, which compared the financial implications of dairy farm expansion in relation to costs associated with New York environmental regulatory compliance. With PRO-DAIRY's deep knowledge of CAFO in combination with our farm financial database, the team was able to put together a realistic example of the financial impact of CAFO compliance on small dairy farms that are trying to grow," said Michael Haycock, Vice President and Branch Manager and James Putnam, II Executive Vice President. "We feel this is an important issue for policymakers to understand as we all search for ways to grow the New York dairy industry. This report has been well accepted by policymakers and our industry as having provided practical information about a complicated public policy issue. We look forward to future opportunities to collaborate with PRO-DAIRY on behalf of the New York dairy industry."

The yogurt boom in New York has created a demand for milk to be used in processing, and to fill that demand locally, New York must grow its milk supply. Various factors, both economic and regulatory, affect the capacity of a farm to expand. This report focused on dairies in the 190 to 290 cow

range and helps illustrate the potential financial implications and challenges of growing a dairy while stepping into a CAFO permit for this size farm.

New York is one of the top milk producing states in the nation. As a result, it has attracted a number of value-added dairy processing businesses that have brought jobs and economic development to the Empire State. Governor Cuomo has shown unprecedented interest in supporting both dairy processing and milk production in NYS and a great deal of discussion has centered around how more milk can be supplied by NY producers. Understanding the financial and managerial realities of farms under 200 cows that want to grow is one important element for shaping policy and regulations going forward. For farms that wish to grow beyond 200 cows, meeting all elements of a CAFO Permit requires significant management and capital investment. Most farms of this size grow incrementally and face a steep learning curve as management roles change significantly in terms of dealing with labor and groups of cattle. Farmers in the 200 cow size range tend to have the challenges of both smaller and larger farms at the same time, but without the economies of scale.

To illustrate this issue, Farm Credit East and PRO-DAIRY developed a typical financial scenario for a dairy in this situation based on recent average annual milk prices and found that CAFO compliance cost the farm to lose a significant amount of money during the forecast period.

While environmental protection is an important public policy goal, how this goal is achieved could be better aligned with reality on the ground. This report illustrated the real costs of environmental compliance and will contribute to the development of policies that balance the obligation of environmental protection with improving the sustainability of NY dairy for many years to come.

The full study report is available online at: <https://www.farmcrediteast.com/en/News-and-Events/News/20120618CAFOstudy.aspx>.



Dairy Profit Discussion Groups

PRO-DAIRY specialist:
Kathy Barrett

Dairy Profit Discussion Groups continue to be an effective method for increasing farm profitability and quality of life for farm families and rural communities. The Dairy Profit Discussion Group program was established by the PRO-DAIRY program, New York Farm Viability Institute, and the New York Center for Dairy Excellence in 2007. The program brings farmers together to share ideas, experiences, and learn new ways to impact the profitability of their farms. The groups represent the diversity of the industry both in geography and production management systems. Each group has a targeted membership so that there is a shared commonality, including young farmers, large or small herd and grazing. This ensures that the group discussions are meaningful and valuable for the group members. Extension educators and agribusiness professionals facilitate and coordinate the groups.

Farmers and facilitators report many benefits to participating in a discussion group. Dairy Profit Discussion groups provide farmers with the opportunity to: discuss and exchange ideas with farmers they respect, draw on the strong knowledge-base of their peers, progress toward individual farm goals for profitability, learn from the substantial real-world experience of the other farmers, interact with industry professionals and other invited resource people in a manner directed by the farmers, and build professional relationships and networks with other farmers.

Farmers were surveyed and interviewed by group facilitators to determine changes in farm practices and adoption of production and management tools. All group facilitators reported that their discussion groups made progress towards the group's goals of improving profitability and implementing appropriate technology. The groups are self-directed with goals and topics addressed varying depending on the interest and needs of the groups. Consequently, a broad spectrum of impacts were reported including most aspects of dairy farm management. Topics addressed included: reproduction technology, forage quality, income over feed costs, nutrition, transition cow management, facilities-design, ventilation, barn renovation, parlor considerations, expansion considerations, employee management, calf and heifer raising, automated calf feeding systems, financial recordkeeping, neighbor relations, risk management strategies, cow comfort, stocking density impacts, quality milk production, bedding systems, cull cow handling and marketing, managing feed shrink, milk marketing, farm transfer, Cornell Dairy Profit Monitor, and the Cornell Dairy Farm Business Summary.



Farmers report that discussion groups have impacted not only profitability, but also human resource management, nutrient management, cow and crop production, and financial management. This increase in farm viability and vitality supports healthy rural NY communities.

► Impact

- Across New York State, 31 Dairy Profit Discussion Groups currently operate with over 500 farmers participating, collectively milking over 200,000 cows. These groups meet on a regular basis to discuss the issues that impact their farms and profitability. The group participants self-select the topics for discussion to maximize the benefits to the members.

The groups are located in 31 counties, with several multi-county and statewide groups. Some of the commonalities the groups have formed around include: Young Farmer, Dairy Women, Organic, Middle Managers, Cow Comfort, Grazing, Large Herd, Mid-Size Herd, Small Herd, Milk Quality, Dairy Managers in Transition, Herd Managers and Young Farmers.

Examples of reported changes and impacts include: increased herd size to efficiently use facilities and labor, changes to forage and pasture management to increase forage quality in ration and reduce feed costs, evaluation of farm businesses through the Cornell Dairy Profit Monitor and Cornell Dairy Farm Business Summary, increased production efficiency via improved reproduction, nutrition, milk quality, cow health and comfort, Animal Welfare Certification process implemented, improved calf performance-weight gains, digestive upsets nearly eliminated, virtually all calves doubling birth weight in 56 days and less slowdown in gain experienced in the transition pen. The bunker silo management-ongoing campaign for bunker silo management did bear fruit. Many either added packing tractor weight or slowed down harvest rate to enhance DM density, stem losses and hold on to increasingly valuable tonnage.



Jean and Jerome Demko
Demko Farms, Inc
Martinsburg, NY

Program:
Engineered Group-Housed Calf Barn

Dairy Environmental Systems and Renewable Energy

PRO-DAIRY specialist: Curt Gooch

The Dairy Environmental Systems and Renewable Energy program focuses on the technical, economical, practical, and managerial aspects of systems and system components needed to provide quality environments to house dairy cattle, manage, treat and store farmstead by-products in ways that promote environmental friendliness and sustainability with a focus on air quality, water quality, and renewable energy opportunities, specifically anaerobic digestion with energy conversion.

service personnel, regulators, governmental officials, and professional counterparts based on the monitoring project findings. Developed materials were also posted on the Cornell Dairy Environmental Systems Program's Web site at www.manuremanagement.cornell.edu.

Small Farm Anaerobic Digestion White Paper

To help inform funding agencies and others about small farm digesters, USDA-NRCS commissioned Cornell PRO-DAIRY to prepare a white paper analyzing specific challenges facing small farm digesters. The main purpose of this paper is to provide information that can be used by granting agencies to develop direction and decisions about small farm digester systems. Technical, regulatory, practical, and financial hurdles are analyzed. Further, an economic analysis of varying funding sources and costs on digester feasibility are conducted.

Anaerobic Digestion Work Force Development Project

The Anaerobic Digester Workforce Development Project is a NYSERDA-funded project aimed at developing and delivering high quality educational programs targeted to a range of workforces within the dairy farm-based anaerobic digestion sector of the clean energy field. Minimal technical support is currently available for farm-based anaerobic digesters in New York, and this project aims to train a workforce of supporting engineers, technicians, operators, and service personnel, all needed to grow the digestion industry. It is hoped that the addition of technicians to the industry will solve one main barrier to expanding on-farm anaerobic digestion, namely, that farm-based systems will operate more effectively with some level of dedicated support. The project team is also

Programs

- Dairy Biomass-Based Renewable Energy
- National Got Manure? Management Conference, Conference Tour and Trade Show
- Dairy Facilities - Regulated Air Emissions
- CAFO Engineer Training Program
- Ammonia Recovery Process

Dairy Biomass-Based Renewable Energy

This continues to be a major program area, and includes a multi-faceted approach:

Educational Material Development

PRO-DAIRY continued with the development of written, oral and visual educational materials and with the delivery of these materials to dairy producers, their advisors, agri-

PRO-DAIRY's Curt Gooch, a registered professional engineer, designed the first fully-enclosed, year-round mechanically-ventilated group-housed calf barn in the Northeast for Demko Farms Inc. in Martinsburg, NY.

A key feature of this barn is ventilation during transition and winter weather conditions that is draft-free but provides a continuous supply of fresh air at calf nose level using a novel approach developed by Gooch.

"It's the best thing we ever did," said Jean Demko, who owns the 1,200 milking-cow herd with her husband John and their son Jerome.

About five years ago the Demkos decided they wanted to move calves out of a tie stall barn that was converted to calf housing. Loss was only 2 percent, but calves weren't as healthy and didn't grow as fast as the Demkos knew was possible.

"We started to realize that we were starving the calf if we were feeding them only twice a day," said Jean. "We didn't lose them, but they didn't make it to their full potential."

The building project was delayed for various reasons, but that time allowed for construction of a new freshening area, where calves receive a gallon of colostrum from their mother after birth.

"We knew we had to have the basics of raising calves in place for a new barn to be successful," Jean said.

The time also allowed the Demkos to travel to Iowa and South Dakota to view other calf facilities. And they participated in PRO-DAIRY's 2011 sold-out program on group-housed calves.

"We were in the beginning planning stages. We wanted to see what other people were doing," Jerome said. "It's cheaper to go to a program and learn from the experiences of other farmers than to have a remodel."

While it was "scary" to be one of the first in the country to build such a facility for calves, Jerome said that agriculture has other models, such as pork, that are already doing this.

The Demkos are now full of praise for the new system and the engineer who designed it. They began engineering with Gooch in January 2012 and by July were in the new building, which can house up to 200 calves. Barn temperature remains around 60° F and temperature and seasonal changes trigger adaptations in the four-stage mechanical ventilation system.

"As temperature drops, the top fans stop completely," Jerome said, while others continue to operate as needed during cooler and cold conditions.

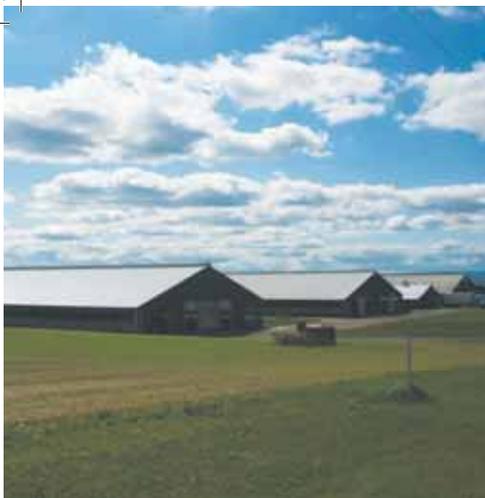
Calves have continuous access to pasteurized waste milk through a robotic feeder. The barn has a separate milk room, pasteurizer and milk tank.

"We have big, humongous calves," Jean said. "John Conway brought PRO-DAIRY's scales and they have tripled their growth."

The Demkos see very little respiratory problems, which is a typical challenge in calves in group housing. While calves raised in the new barn haven't entered the milking herd yet, the Demkos anticipate that they will also realize increases in production that other farms with group-housed, free-choice milk calves have.

Not only are farm owners and calf managers more excited about raising calves this way because of the labor savings, but the early life nutrition and management decisions they're making affects lifetime productivity. Increases in nutrition can lead to growth and to production increases equivalent to rbST, said Dr. Mike Van Amburgh, Cornell University at the PRO-DAIRY symposium the Demkos attended.





creating and expanding an on-line resource library (see: www.manuremanagement.cornell.edu) to provide current information, targeted towards multiple audiences and knowledge levels, related to biogas systems. This is the only place where concise, unbiased information for these systems in New York exists.

Included in the project are five technical short-courses that will provide educational training to persons who are involved in the planning and implementation of dairy farm-based anaerobic digestion systems and to those currently or who will soon be managing existing operating systems. These short-courses are:

- *Technical Feasibility of on-farm Anaerobic Digestion* short-course. Curriculum completed; 1 of 2 workshops delivered.
- *Economic Feasibility of on-farm Anaerobic Digestion and Economic Assessment Model Instruction Guide* short-course. Curriculum completed; 3 of 3 workshops delivered.
- *Practical Considerations and Implementation of Anaerobic Digestion System from Planning and Design to Construction* short-course. Curriculum in draft stages; 0 of 2 workshops delivered.
- *Technician's Start-Up and Operation* short-course. Curriculum not completed; 0 of 2 workshops delivered.
- *Biogas Clean-up and Utilization Systems Selection, Operation and Maintenance* short-course. Curriculum not completed; 0 of 2 workshops delivered.
- *Public relations* short-course. Curriculum completed; 3 of 5 workshops delivered.

Also included are the development and implementation of on-farm laboratories for the diagnostic and performance evaluation of anaerobic digesters. Although anaerobic digestion is a rather well-understood technology at the technical level, system failures on-farm are still somewhat frequent. Recent applied studies PRO-DAIRY conducted in New York State revealed that some anaerobic digester systems generated less than 60% of their electric energy potential due to poor anaerobic digester performance and system failure. Since most of these problems occur as a result

of inadequate operational management and lack of process control, PRO-DAIRY implemented a program to educate and support a workforce of anaerobic digester operators and technicians across New York State.

► Impact

- As a part of the project, analytical laboratories were conceived, developed and installed on five selected farm-based anaerobic digester systems with the purpose of diagnosing digester problems and evaluating their performance over the long run.
- Preliminary results of the program implementation revealed that periodic monitoring is essential to detect system upsets more efficiently, and to identify and correct the source of the problem before system failure occurs. The project demonstrated that with adequate training, existing farm personnel are capable to monitor their systems autonomously and with efficacy. Based on our results, it is expected that more AD systems in NYS and throughout the U.S. will implement operator training programs and monitor their process periodically. This would positively impact the waste treatment and bioenergy production performance of AD systems in the country.

National Manure Management Conference

Cornell PRO-DAIRY, in collaboration with USEPA AgSTAR, USDA-NRCS, and NYSERDA, planned, organized, and hosted a national integrated manure handling/treatment/management conference entitled "Got Manure? Enhancing Environmental and Economic Sustainability". Held in Syracuse NY, on March 28 and 29, 2012, this conference featured 30 speakers in 10 sessions and 11 posters. In addition, the conference had a digester operator panel consisting of digester owner/operators from New York, Pennsylvania, Vermont and Wisconsin. The conference was attended by over 300 registered people with a good representation of local, national and international backgrounds. A conference proceeding, developed by PRO-DAIRY from submitted papers, is available on the Cornell Dairy Environmental Systems website in electronic or hard copy. Four of the 30 papers presented were written and presented by Cornell PRO-DAIRY team members and many others were reviewed and improved by PRO-DAIRY.

In conjunction with the Got Manure Conference, Cornell PRO-DAIRY organized both a half-day and full-day pre-conference tour for interested conference attendees. The half-day tour consisted of visits to the Cayuga County Soil and Water Conservation District Community Digester, and Patterson Dairy Farm (both located in Auburn, NY). The full-day tour visited the same sites as the half-day tour, but also included a visit to Synergy Dairy, in Covington, NY. On March 27th, 2012 104 people attended the full-day tour, and 44 people attended the half-day tour.

In conjunction with the "Got Manure?" conference, Cornell PRO-DAIRY organized an industry trade show with 38

booths. The 34 companies (and 4 conference sponsors) represented national and international industry and government.

► Impact

- Over 300 people attended the national conference, 104 people attended the full-day tour, 44 people attended the half-day tour and 34 companies participated in the industry trade show.

Dairy Facilities - Regulated Air Emissions

PRO-DAIRY continued work on regulated air emissions by staying abreast of the National Air Emissions Monitoring Study (NAEMS) data analysis being performed by the US EPA. The EPA is in the process of analyzing data presented to them via reports PRO-DAIRY and others filed last year. The outcome of EPA's analysis is the development of a standardized method for all US dairy farms to estimate their regulated air emissions (ammonia-N, hydrogen sulfide, dust, and volatile organic compounds). The final standardized method is scheduled to be released in 2012.

CAFO Engineer Training Program

Fifty-nine Continuing Education Unit certificates were earned by NYS professional engineers who attended one or both of the PRO-DAIRY training sessions specifically developed to educate engineers on specific topics within the dairy industry. The first session focused on wood system structural engineering. The second session's training focused on engineering ethics and the new Chesapeake Bay TMDL requirements.

► Impact

- The New York State Education Department, Office of Professionals, implemented a requirement in 2011 that New York State licensed engineers must obtain ethics training as part of the CEU requirements, and PRO-DAIRY responded to this requirement by providing this training.

Ammonia Recovery Process

In collaboration with industry, pilot-scale testing and economic analysis of a scaled system of an on-farm ammonia recovery process (ARP) started in 2010, was continued again. The on-farm ARP system is designed to remove and capture ammoniacal nitrogen in post-digested dairy manure as liquid ammonium sulfate, or liquid ammonium nitrate, both utilizable as a fertilizer-grade product for sale or use. Work performed to date suggest that the ARP process reduces the ammonia content of digestate (up to 80%) and significantly impacts the nutrient management options at the farm scale. This year's work included continued testing and focused on estimating the capital and operating costs for a typical dairy operation in NY, and further investigated the potential benefits on nutrient management and value of salable fertilizers.

► Impact

- PRO-DAIRY estimates that the ARP system may produce liquid ammonium sulfate at a cost range of \$0.54-\$0.86 per lb. N from digested dairy manure. A paper was presented on ARP by our industry collaborator at the national "Got Manure?" conference held in March, 2012 in Syracuse, NY.

