



CELEBRATING 10 YEARS

FARMERS ASSURING

FARM™

RESPONSIBLE MANAGEMENT



IN 2019

2018

NATIONAL DAIRY
FARM PROGRAM™
YEAR IN REVIEW

WHY FARM?

Consumers today are more interested in their food than ever before: its safety and nutritional value, how it's produced, who's producing it, the care of animals and the management of employees.

By participating in the National Dairy Farmers Assuring Responsible Management (FARM) Program, farmers demonstrate a commitment to quality farm practices and safe, wholesome dairy products. We are earning the trust of consumers across the country by establishing the highest standards for the dairy industry when it comes to our four program areas: Animal Care, Antibiotic Stewardship, Environmental Stewardship and Workforce Development.

Created by the National Milk Producers Federation, with support from Dairy Management, Inc., FARM began in 2009 and has participation from dedicated dairy farmers, cooperatives and processors from across the United States.

We hold our participants to rigorous guidelines that ensure the utmost quality in care and welfare on our nation's dairy farms. We understand there is always the opportunity for improvement. That's why FARM creates a culture that inspires the dairy community to work every day toward positive change.

Uniting around sound farm management practices and making smart decisions for our dairy businesses are not only ethical obligations, but vitally important to ensuring the long-term success of the dairy industry.



FARM Farmer Advisory Council

In late 2018, FARM introduced the founding members of its inaugural Farmer Advisory Council.

These dedicated dairy producers, who represent diversity in farm management style, age, gender, geographic location and cooperative/processor membership, provide guidance and input for consideration into FARM's ongoing and future development.

With their council appointment, members are also considered ambassadors and liaisons for the FARM Program and will champion the program within other organizations and their regional communities. Each council member will serve one, three-year term. Members were selected by a committee comprised of members from the FARM Technical Writing Group and FARM Program staff based on their ability to meet the outlined expectations.



CELEBRATING 10 YEARS IN 2019

1990

NMPF began publishing the Milk and Dairy Beef Residue Avoidance manual each year, first with the Dairy Quality Assurance Center, and then assuming sole management of the publication. This work evolved to become FARM Antibiotic Stewardship.

2002

NMPF publishes the Dairy Environmental Handbook Best Management Practices for Dairy Producers.

2010

Greenhouse Gas (GHG) Life Cycle Assessment (LCA) for fluid milk completed.

Work begins by the Innovation Center for U.S. Dairy to develop the Farm Smart tool to assist in estimating farm-level GHG emissions and energy intensity.

2016

Transition of Farm Smart to the FARM program begins via analysis, replication, system testing and piloting.

2018

FARM **introduces the Workforce Development** program area with a human resources and worker safety focus.

FARM Animal Care becomes the 1st animal care program to reach ISO standards.

1995, 2002, 2004, 2008

NMPF jointly develops and updates “Caring for Dairy Animals Technical Reference Guide” with the Dairy Quality Assurance Center.

2009

NMPF with support from DMI introduces the National Dairy FARM Animal Care Program. U.S. dairy industry sets goal to reduce greenhouse gas emission intensity by 25% by 2020.

2012

Comprehensive LCA for fluid milk completed.

2013 and 2014

The Farm Smart tool undergoes pilot testing and is released.

2017

FARM uses Farm Smart science to establish GHG calculator and **introduces FARM Environmental Stewardship.**

FARM Animal Care Program participation totals 98% of U.S. Milk Supply.

2019

FARM will enhance the **Environmental Stewardship** program area, fully launch the **Workforce Development** program area, and finalize **Animal Care 4.0** in June, conducting evaluator and evaluator trainer courses throughout the summer and fall.

ANIMAL CARE

The FARM Animal Care Program demonstrates that dairy farmers share consumers' values when it comes to quality animal care and safe, wholesome milk. Available to all dairy farmers, the FARM Animal Care Program:



Details animal care guidelines that farmers follow for every cow and calf on the farm



Provides on-farm evaluations and second-party feedback



Ensures the integrity of the program through third-party verification

Development of Animal Care 4.0

TO BEGIN
**JANUARY 1,
2020**

TIMELINE:

June 2018 | Revision of Animal Care Manual Begins

November 2018 | Innovation Center Animal Care Committee Meeting

January 2019 | Animal Health and Well-Being Committee Meeting

February 26 – March 30, 2019 | Public Comment Period

June 2019 | NMPF Board Approval

July 2019 | Version 4.0 Outreach and Trainings

January 2020 | Evaluations on Version 4.0 Begin

AREAS OF FOCUS:

- Veterinarian - Client - Patient Relationship
- Training
- Euthanasia
- Tail Docking
- Feed
- Water
- Non-Ambulatory Animals
- Pain Mitigation
- Calf Care

98% of the U.S. milk supply comes from farms participating in the FARM Animal Care Program

Willful Mistreatment PROTOCOL

In a situation where credible evidence or allegations of willful mistreatment of animals is reported to the FARM Program, the Willful Mistreatment Protocol allows for a thorough investigation of the evidence presented.

The hope, in any willful mistreatment investigation, is that the allegations or evidence are proven to be untrue. To determine the validity of the evidence or allegations, a third-party audit of the alleged animal care issues occurs. In the case where the evidence or allegations are confirmed, the protocol requires the farm to take mandatory corrective action steps before FARM will remove the farm from probationary status.

The corrective action steps are verified through a follow-up evaluation. Only after successful completion of the corrective actions is the farm reinstated to good standing with the FARM Program.



ISO Certification

In mid-February 2018, the National Dairy FARM Animal Care Program became the first livestock program in the world to be recognized internationally for its industry-leading animal welfare standards, after the USDA affirmed that FARM complies with the animal welfare requirements within the International Organization for Standardization (ISO).

ISO, an independent, international standards-setting body, works with the World Organization for Animal Health (OIE) to help farmers and animal welfare programs determine how to implement species-specific animal welfare standards.

ISO compliance means that dairy customers both domestic and abroad can safely trust that their products meet the stringent, internationally recognized animal welfare standards set by the OIE. Dairy farmers can rest assured they only need to comply with one program and not a multitude of other guidelines. This recognition becomes even more critical as nearly 16 percent of U.S. milk production is exported to foreign customers.

ANTIBIOTIC STEWARDSHIP



Responsible Use

In December 2018, Pew Charitable Trusts and the Farm Foundation launched a comprehensive **Antibiotic Stewardship Framework**, which FARM endorses.

The framework is the product of a two-year dialogue among stakeholders to ensure that antibiotics are used responsibly throughout production to protect animal and public health. It defines effective stewardship, lays out its core components and describes essential characteristics of effective stewardship programs, including key performance measures.

The U.S. dairy industry's commitment to the framework and to responsible antibiotic use align with the Animal Care and Antibiotic Stewardship program areas of the FARM Program through the establishment of a Veterinarian-Client-Patient Relationship (VCPR) and the development of a comprehensive Herd Health Plan, which emphasizes prevention, rapid diagnosis and quick decision-making for treating all sick or injured dairy cattle with the consultation and strong relationship with a veterinarian.

AMR Challenge

The National Milk Producers Federation, which represents producers of the majority of the U.S. milk supply and commits to increased veterinary oversight of antibiotic use through the National Dairy Farmers Assuring Responsible Management (FARM) Program, joined more than 100 organizations, the U.S. Department of Health and Human Services (HHS) and the Centers for Disease Control and Prevention (CDC) as part of the Antimicrobial Resistance (AMR) Challenge. The AMR Challenge is a yearlong educational effort with a focus on reducing antibiotics and resistance in the environment, improving antibiotic use, developing new vaccines, drugs and diagnostic tests, improving infection prevention and control, and enhancing data sharing and data collection. The FARM Program's guidelines for antibiotic use rely on the cornerstone of the establishment of a Veterinarian-Client-Patient Relationship where the dairy farmer consults with a veterinarian on development of treatment and recordkeeping protocols that address the proper use of antibiotics.

The Secure Milk Supply Plan for Continuity of Business in the event of an FMD Outbreak in the United States

Jamie Jonker¹, Danelle Bickett-Weddle², James Roth³, Timothy Goldsmith¹

¹National Milk Producers Federation, United States, Arlington, Virginia, United States
²Iowa State University, United States, Ames, Iowa, United States
³University of Minnesota, United States, St. Paul, Minnesota, United States

Introduction

The United States' response to a foot and mouth disease (FMD) outbreak will involve movement restrictions, enhanced biosecurity, surveillance, depopulation, and vaccination. FMD was eradicated from the U.S. in 1929; an introduction could devastate livestock producers and the U.S. economy, necessitating preparedness planning. The Secure Milk Supply (SMS) Plan provides continuity of business guidance for dairy premises that are under movement restrictions during an FMD outbreak, but whose cattle have no evidence of infection. FMD is not a public health or food safety concern.

The SMS Plan includes:

- Procedures to collect and transport raw milk from farms with no evidence of FMD infection in regulatory control areas;
- Movement permit guidance; and
- Training materials for enhanced biosecurity and surveillance to decrease transmission risk while supporting business continuity.

Biosecurity Training

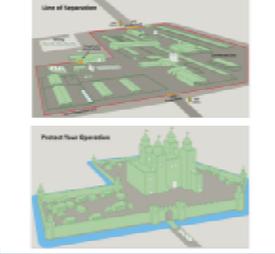
Implementing enhanced biosecurity plans will help prevent exposing cattle to Foot and Mouth Disease (FMD) during an outbreak. Dairy farmers may be asked to share their biosecurity plans with State Animal Health Official prior to an outbreak. The SMS has manuals and templates to assist dairy farmers in developing enhanced biosecurity plans.

Disease Monitoring of Farms

Disease monitoring of farms is also known as surveillance. This is also known as surveillance. This is also known as surveillance. This is also known as surveillance.

Methods

Funding by the U.S. Department of Agriculture (USDA) from 2009-2017 allowed academic partners to draft guidance documents, two proactive risk assessments, and outreach and training videos. These were reviewed and suggestions for improvement made by dairy industry representatives, state and federal officials. Enhanced biosecurity resources (checklists, templates, line of separation examples) were pilot tested throughout the U.S. on dairy operations.



Results

The multi-year collaborative effort resulted in the 10-page SMS Plan and associated resources available at www.securemilk.org. Producers can use the SMS resources to prepare to meet movement requirements while preventing FMD exposure. The SMS Plan provides guidance only. Regulatory Officials will make decisions in an actual outbreak based on the unique characteristics of each outbreak.

World Dairy Summit HONORS

The FARM Program was represented on an international platform at the International Dairy Federation (IDF) World Dairy Summit with seven scientific posters:

Tracking On-Farm Greenhouse Gas Emissions in the United States

Recognized as "Outstanding Poster Presentation"

The Secure Milk Supply Plan for Continuity of Business in the Event of an FMD Outbreak in the United States

Recognized as "Best Poster Presentation"

The United States National Dairy FARM (Farmers Assuring Responsible Management) Animal Care Program

The Impact of Tie Stall Facilities on Dairy Cattle Welfare and the Broader United States Dairy Industry

National Dairy Farm Program Accredited to International Standards Organization Animal Welfare Technical Standard

Antibiotic Stewardship in the United States Dairy Industry

Development of Educational Materials to Advance Human Resources and Safety Outcomes on U.S. Dairy Farms

Tracking On-Farm Greenhouse Gas Emissions in the United States

Jamie Jonker¹, Nicole Ayache¹
¹National Milk Producers Federation, United States, Arlington, Virginia

Introduction

In 2017, the National Milk Producers Federation (NMPF) initiated a new component of the Farmers Assuring Responsible Management (FARM) Program: FARM Environmental Stewardship (ES). FARM ES provides a comprehensive estimate of the greenhouse gas (GHG) emissions and energy use per pound of milk produced on U.S. dairy farms using a science-based, parsimonious greenhouse gas model.

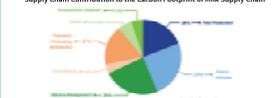
Aim

The aim of FARM ES is two-fold: (1) for a dairy market chain to report greenhouse gas emissions intensity per unit of milk production through a statistically valid method and (2) provide dairy farms with educational materials to reduce their GHG and energy footprint.

Methods

Model
 The FARM ES model is a peer-reviewed method generated out of the life cycle assessment (LCA) published in April 2013 titled, "Greenhouse gas emissions from milk production and consumption in the United States: A cradle-to-grave life cycle assessment circa 2008." The life cycle assessment was one of the largest of its kind ever conducted; collecting data from 536 farms covering a wide range of management practices. The authors of the study also published a peer-reviewed article titled, "Dairy farm greenhouse gas impacts: A parsimonious model for a farmer's decision support tool", which stated that the life cycle assessment results could be narrowed down to a few inputs in a simplified model that would create an accurate and representative tool for farmers to determine and potentially reduce their cradle to farm gate carbon footprint.

Supply Chain Contribution to the Carbon Footprint of Milk Supply Chain



The coefficients outlined in that article are embedded in the FARM ES model. The simplified model strongly reduces the farm specific data requirement from 162 animal-rations in the detailed LCA survey to 32 feed rations for lactating cows, while explaining 91% of the variability in feed print and 98% of the variability in total footprint. Feed efficiency and manure management are key determinants of the footprint per pound of milk.

The FARM Program is looking to update the existing FARM ES model in 2018 using the latest publicly available data with help from the Innovation Center for U.S. Dairy and a team of researchers. The Sustainable Dairy Project is one of several United States Department of Agriculture (USDA) - National Institute for Food and Agriculture (NIFA), Coordinated Agricultural Projects (CAP).

Sampling Protocol

The NMPF FARM Environmental Stewardship Sampling Protocol is a sample selection protocol to assist dairy industry personnel in selecting a statistically valid set of representative farms for FARM ES evaluations. The protocol is based on a stratified random sampling method. The stratifying factors used in this protocol are: 1) quartile of Fat & Protein Corrected Milk (FPCM) produced on a dairy in a day, and 2) geographic region defined as the first 3 digits of the dairy zip code. The three advantages of stratified random sampling are that: 1) it ensures all strata are represented in the sample, 2) the precision of the overall estimates are more likely to be greater than a simple random sample as the differences between strata are explicitly removed from the estimates, and 3) it produces stratum-specific estimates of the outcome of interest. In order to streamline the selection process for dairy cooperatives and milk marketing organizations, a Microsoft Excel spreadsheet has been created that performs the necessary calculations to select farms according to the protocol.

Stakeholder Input

The FARM ES program benefits from stakeholder input through two groups. The FARM Environmental Stewardship Task Force is comprised of cooperative staff that manage field staff who interact directly with farmers, corporate sustainability professionals, and customer outreach. The goal of this panel is to review, recommend, and provide counsel on the governance of the FARM Program. Updates and official recommendations from the panel are sent to the NMPF Environmental Committee. The NMPF Environmental Committee provides overall governance.



For more information, visit www.nationaldairyfarm.com

Results

Program Participation and Output
 The FARM ES assessment has been completed on over 600 farms by 20 different cooperatives and processors.

The United States measures their carbon footprint in terms of carbon intensity and energy through the Stewardship and Sustainability Framework created by the Innovation Center for U.S. Dairy which is housed at Dairy Management Inc. Intensity measures are those predicated on a unit of production, so in the case of carbon, dairy is measured in terms of carbon dioxide equivalent (CO₂e) per pound of fat-and-protein corrected milk (FPCM). Energy and fuel production is measured in terms of mega joules (MJ) per pound of FPCM.



The results are divided into areas of production: feed production, on-site enteric, on-site manure and on-site fuel use. "On-site" refers to dairy activities on the farm. If the operation purchases feed and does not engage in crop production activities, the output will still generate an estimate for the impacts of the purchased feed. The table provides greater insight into how the operation's results compare to similarly-sized farms, by showing regional and national averages for farms of similar cow numbers.

Resources

Several resources have been developed and released as part of the FARM ES program.

The FARM ES Continuous Improvement Reference Manual is a comprehensive resource of on-farm management practices to reduce a farm's environmental footprint and improve its profitability. Specifically, the manual contains a detailed explanation of the FARM Environmental Stewardship (ES) module, as well as strategies to reduce on-farm greenhouse gas (GHG) emissions in various areas of farm management, including feed, manure, energy, forage, and animal health. The World Wildlife Fund (WWF) led an independent review of the manual using a panel of subject matter experts. The Technical Review Panel. The panel's goal is to ensure FARM Environmental Stewardship provides a best in class guide to support farmers in understanding the FARM ES results and to identify opportunities for improvement. The panel is comprised of farmers, academics, processors, and conservationists.

The FARM ES User Guide helps on-farm field staff, FARM evaluators and individual farmers input their data into the FARM ES tool. It explains which resources may contain the data on their farm, as well as answers common questions about how to interpret each measure.

Conclusion

Retailers, processors and other purchasers of farm products are increasingly interested in the environmental footprint of agricultural production. Dairy buyers and stakeholders are asking farmers to share more information about the industry's environmental outcomes. FARM ES allows the U.S. dairy industry to track and communicate progress for on-farm GHG emissions generated per unit of milk. The model being used comes from peer reviewed science and is based on data generated from the U.S. dairy life cycle assessment. This voluntary tool is helping the dairy industry demonstrate its continuous improvement progress and communicate valuable information to supply chain partners.

References

National Dairy Farm Program (FARM Program). Environmental Stewardship Continuous Improvement Reference Manual. 2017.
 National Dairy Farm Program (FARM Program). Environmental Stewardship User Guide. 2017.
 Greenhouse gas emissions from milk production and consumption in the United States: A cradle-to-grave life cycle assessment. Clark FOGEL, 2013.
 Thoma, Greg, et al. <http://www.sciencedirect.com/science/article/pii/S095964612001975>

Acknowledgements

Travel to the World Dairy Summit was made possible by the U.S. Dairy Export Council. Special thanks to Beverly Hampter Pfeifer for assisting in the design of this poster. The National Dairy Farm Program is a joint effort by the National Milk Producers Federation and Dairy Management Inc. (DMI Inc.).

FARM Environmental Stewardship entered its second year in 2018. Since the launch of the program area, more than

750

evaluations have been conducted by

20

participating organizations.

Customers continue to set ambitious greenhouse gas targets for their supply chain.

FARM Environmental Stewardship is a tool participants can use to communicate progress towards

**REDUCING THEIR
CARBON
FOOTPRINT.**

ENVIRONMENTAL STEWARDSHIP

U.S. dairy farmers have a long-standing history of caring for the environment and adopting innovations to reduce their footprint. In its effort to build on this momentum and share the impressive story of continuous improvement, the FARM Program established the Environmental Stewardship program area. It provides a comprehensive estimate of greenhouse gas (GHG) emissions and energy use associated with dairy farming.

Compared to 70 years ago, producing a gallon of milk uses 65 percent less water, requires 90 percent less land and has a 63 percent smaller carbon footprint.

FARM Environmental Stewardship asks a set of questions to assess a farm's carbon and energy footprint and then provides farmers with reliable, statistically robust estimates. This tool is based on a life-cycle assessment (LCA) of fluid milk conducted by the Applied Sustainability Center at the University of Arkansas, incorporating data from more than 500 dairy farms across the United States.

By tracking advances in dairy production efficiency, farmers can use FARM Environmental Stewardship to assure dairy customers and consumers of their commitment to ongoing environmental progress. Producers can also use the results to identify opportunities for changes that could increase their farm's sustainability and reduce their cost of production.



** THE NEWEST FARM PROGRAM AREA **

WORKFORCE DEVELOPMENT

Workforce Development launched in 2018. The initiative provides U.S. dairy farm owners and managers with educational tools that offer best management practices around human resources including hiring, training, supervision, and worker health and safety.

Multi-stakeholder

FARM Workforce Development benefits from the expert and stakeholder input gathered through its Task Force and Working Groups. Farmers, cooperative staff, food service and retail customers, academics and other subject matter experts have reviewed, recommended and provided counsel on the program area's resources. This reliance on stakeholder input ensures the Workforce Development materials are technically robust and relevant to today's dairy industry.

For the safety portion of the initiative, FARM is collaborating with the Idaho Dairymen's Association (IDA) to develop a best-in-class safety resource for dairy farm owners and managers. IDA's Dairy Workforce Training & Safety Program Oversight Board includes representation from dairy farm employees to provide the worker perspective into the development of resources.

Throughout the year, the FARM Workforce Development Task Force and Working Group members worked together to develop outstanding resources.

2018 Resources Released

Legal Fact Sheets summarize laws and regulations on a variety of human resource issues for dairy farms, including wages, paystubs, wage deductions, youth employment and more. Each fact sheet provides an overview of select issues with a high-level explanation of key requirements for each one. Links to more information and resources are provided throughout the document.

The Guide for Managing Employee Housing covers legal considerations and management recommendations to promote safe, clean and comfortable living spaces for dairy farm workers. Properly managed housing gives dairy farm workers and their families a place to rest, relax and make memories. The guide provides templates that can be tailored for an individual farm, such as an orientation checklist, an emergency contact poster and a maintenance request form.

Coming in 2019

Human Resource Reference Manual: Covers best practices and recommendations around hiring, communication, training and management, wages and payroll, performance management and more. The HR Manual will also have a set of templates that can be customized for the individual dairy farm.

Safety Reference Manual: Introduces dairy owners and managers to components of safety management, legal considerations, addressing on-farm hazards and how to implement a training program.

Self-Assessments: Both manuals will include a self-assessment checklist that dairies can use to gauge their strengths and identify areas for improvement.

CUSTOMER OUTREACH

Throughout 2018, the FARM Program and the Innovation Center for U.S. Dairy continued to work one-on-one with customers to ensure leading food chain customers were aware of, connected with and supportive of the dairy industry-wide social responsibility plan.

The National Dairy FARM Program continues to be one of the building blocks of the social responsibility plan, with strong customer adoption and support of the Animal Care Program. In 2018, customer engagement opportunities ranged from on-farm visits, hot topic webinars, meeting program staff at national food chain events, headquarter meetings and participation in dairy and national sustainability conferences.

Customers continue to have a strong and growing interest in supporting the Environmental Stewardship program area. As many customers look to find ways to meet their corporate social responsibility goals, FARM ES has been approved by several major customers as one of the reporting methods for greenhouse gas emissions for their dairy supply chain.

Additionally, with the introduction of the new Workforce Development program area, many customers have given early support in the development of this program and are working with FARM to ensure they can adopt it, as appropriate, in the future.

Save the DATE

Looking to 2019, there will be four major opportunities for customers to engage with the National Dairy FARM Program.

March 19-20

Antibiotic Customer Seminar

May 8-9

Dairy Sustainability Forum
Chicago, IL

August 13-14

Customer Seminar

November 19-21

Dairy Sustainability Alliance &
Sustainable Agriculture Summit
Indianapolis



“ McDonald’s USA is proud to work with the US dairy industry. By 2020, nearly all dairy products served in McDonald’s restaurants in the U.S. will come from farms that participate in the Farmers Assuring Responsible Management (FARM) Program, which strives to hold its members to high standards of animal care, and environmental and antibiotic stewardship. ”

THE FARM MISSION

To aid dairy farmers and cooperatives/processors in assuring consumers and customers that dairy farmers manage their animals, workforce and land in a responsible manner through science-driven methods and a commitment to continuous improvement.

MEET THE TEAM



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LEARN MORE

Dairy producers with questions about the National Dairy FARM Program are encouraged to contact their participating FARM Program organization or FARM Program staff at dairyfarm@nmpf.org.

JOIN US!

Dairy cooperatives, processors, marketers and individual farms interested in participating in any National Dairy FARM program area can connect with us at dairyfarm@nmpf.org.

RESOURCES

Visit nationaldairyfarm.com to find on-farm templates, Animal Care Program evaluation preparation materials, Environmental Stewardship user guides and human resources and worker safety documents, along with additional resources.

PARTICIPATING ORGANIZATIONS AND BRANDS

Thanks to the many cooperatives and processors that participate in the FARM Animal Care Program and the brands that market FARM Proud Milk!

FARM PROUD ORGANIZATIONS



FARM PROUD BRANDS

