

FY 2017

DAIRY DEVELOPMENT AND PROFITABILITY ENHANCEMENT LEGISLATIVE REPORT



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mn DEPARTMENT OF
AGRICULTURE



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Pursuant to Minn. Stat. § 3.197, the cost of preparing this report was approximately \$1,000

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EXECUTIVE SUMMARY

1. Dairy Profit Teams worked with 341 producers across the state, helping them reduce costs, adjust herd size, improve safety by building or redesigning milking facilities, and make other improvements. The teams also helped producers increase their profitability by improving milk production and quality, enhancing animal health and comfort, and pursuing value added dairy opportunities. According to farm financial records, DDPEP efforts generated \$40.5 million in fiscal year (FY) 17, with an \$88 return on every dollar invested. The program also generated in-kind contributions worth at least \$966,587.
2. Dairy Business Planning Grants helped 10 Minnesota producers hire professional advisors to aid them in developing business plans and strategies in FY 2017. Some producers were thinking about expanding their herds, others investigated ways to transfer operation to a new generation, manage debt, or invest in improvements to protect water, soil, and other natural resources.

Most dairy farms experienced severe financial challenges in 2017, due in large part to low milk prices. Experts believe these stresses will continue in 2018, making this program as relevant and helpful to the dairy community as it has ever been. The continuation of this critical program essential.

INTRODUCTION

Since 1996, the Dairy Development and Profitability Enhancement Program (DDPEP) has helped Minnesota dairy farms lower costs and improve quality and profits.

The Minnesota Department of Agriculture (MDA) prepared this report to meet its statutory obligation in Laws 2017 Chapter 88 Subd.3c.

The Minnesota Legislature appropriated \$634,000 per year for the 2016/17 biennium to continue *the Dairy Development and Profitability Enhancement and dairy business planning grant programs established under Laws 1997, chapter 216, section 7, subdivision 2, and Laws 2001, First Special Session chapter 2, section 9, subdivision 2.*

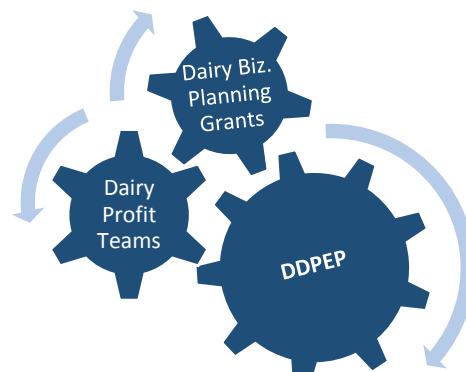
The Legislature specified that *The Commissioner may allocate the available sums among permissible activities, including efforts to improve the quality of milk produced in the state, in the proportions that The Commissioner deems most beneficial to Minnesota's dairy farmers.*

BACKGROUND

The Dairy Development and Profitability Enhancement Program (DDPEP) funds two primary components to serve dairy farmers in Minnesota: 1) dairy profit advisory teams and; 2) dairy business planning grants.

The DDPEP is administered by the Minnesota Department of Agriculture, with input from the Minnesota Dairy Initiative (MDI). MDI partner organizations coordinate dairy profit advisory teams on a regional or, in one case, statewide basis. The partners include the Sustainable Farming Association (SFA), Minnesota Milk Producers Association (MMPA), the University of Minnesota, University of Minnesota Extension, Minnesota State Colleges and Universities (MnSCU) Farm Business Management (FBM), and other industry groups.

The DDPEP began as a pilot program with a single team in 1996; the Minnesota Legislature funded the program at \$1M for the biennium. In 1997, the program expanded to support five regionally-based teams and one statewide team, which specialize in management practices such as organic production and grazing, and with alternative dairy species like sheep and goats. The legislature appropriated \$2 million for the 2004/05 biennium to expand advisory team activity and began a grant program to encourage individual farmers to invest in dairy business planning.



Dairy Profit Teams

Figure 1 shows an example of a Dairy Profit Team. Each team is comprised of people who bring varying backgrounds and expertise tailored to an individual farm’s needs. The team works with the farmer and partners and/or family members to evaluate how the current farm operation is performing and discuss objectives for the future. The team makes recommendations, not decisions. It identifies priorities and suggests changes that could help the farmer/family meet those objectives. No two teams’ recommendations are exactly the same – just as no two farms are exactly the same. The issues may be similar, but the means for resolving them are often very different. Farmers don’t receive this service for free, they pay \$200/farm and then are eligible for up to \$600 of funds to address issues on their farms. Farmers can work with “their” dairy profit team for three years. They can reapply for the program if they want to continue working with the team. The average team will cost between \$2000 - \$2500 per farm to facilitate and provide services.

In FY 2017, 341 dairy farms milking a total of 75,109 cows participated in the program (Appendix A). These figures represent eleven percent of the dairy farms and seventeen percent of the dairy cows in the state. Of the 341 farms involved, 327 worked with one of six regional teams; the other 14 worked with the “alternatives” team coordinated by the Sustainable Farming Association.

In addition to the farms that were directly served by Dairy Profit Teams, 11,249 people attended other educational programs offered at MDI-sponsored events. These programs included organic transition workshops, milker trainings, barn tours, and more.

In FY 2017 the DDPEP awarded a total of \$460,000 to support advisory teams fielded by the six MDI programs across the state (Figure 2).

Figure 2.
Award Distribution by Region/Program.

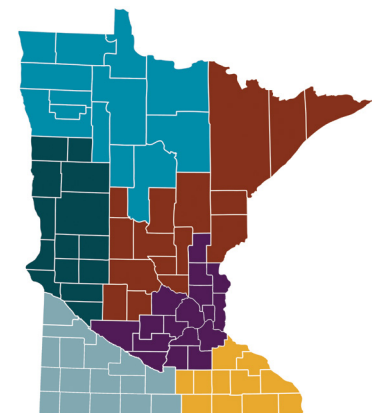
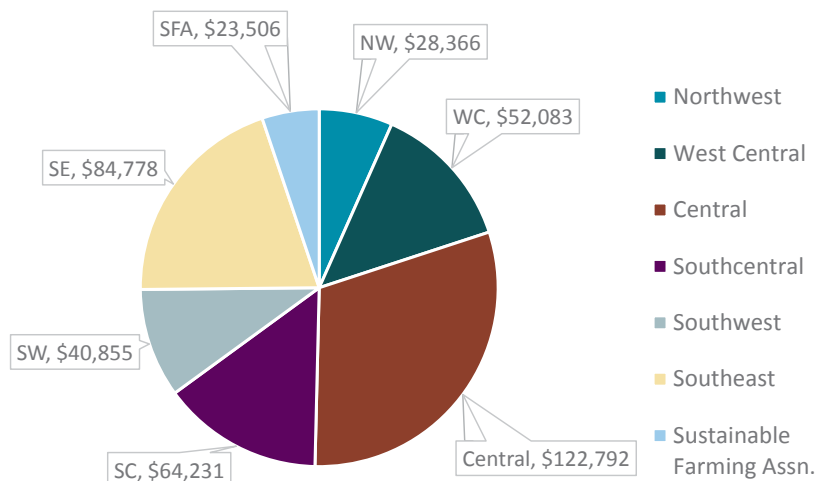
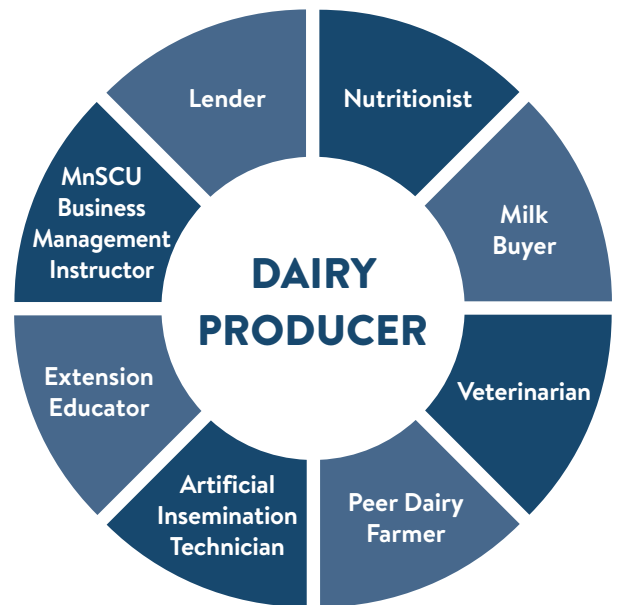


Figure 1.
Members on a Typical Dairy Profit Team.



FISCAL YEAR 2017 ACTIVITIES AND ACCOMPLISHMENTS

This section summarizes the activities and accomplishments reported by the MDI Dairy Profitability Teams. They all worked directly with farmers and farm families. They also coordinated or co-sponsored other dairy education events during the year.



MDI—West Central

West Central teams worked with 90 herds (8,776 cows) in FY 2017. In addition, 1,298 individuals besides those working with a Dairy Profit team attended workshops and seminars offered by this team and other MDI partners in the area.

The MDI West Central worked with many farm teams that benefitted from expansion/ low cost expansion/low cost parlors, new farm startups and improving record keeping skills. Many other farms wanted to increase milk production, improve milk quality as well as refinance and stray voltage. Some farms are developing a Farm Transfer plan while others are improving cow comfort and adding new technology (Robots and Calf Feeders). Still other farms are addressing soil health and water quality issues or working with Minnesota Pollution Control to help farmers become compliant with their feedlots.

“I would like to offer my support for the West Central MDI. It helps me figure my cost of production and that helps with my marketing plan.”

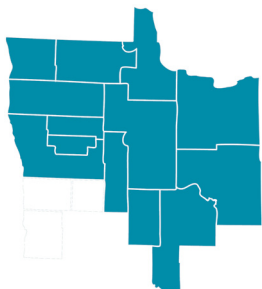
– Bruce Asfelds

“I am very supportive of the MN Dairy Initiatives program. I have worked with various profit teams as a Farm Business Management Instructor and greatly appreciate the opportunity to have the dairy team resources available to help my students become more successful. The resources provided from the teams are vital in the effort to make the farm successful.”

–Robert Stommes, FBM Ridgewater College

“My team provided help with restructuring my loans which kept me in farming. Without the dairy profit teams help, I would not have been able to develop a successful cash flow for myself and my lender.”

– Richard Buermann



MDI—Northwest

Dairy Profit Teams in this region worked with eighteen farms (1,694 cows) in FY 2017. The MDI-Northwest estimates \$22,900 of in-kind contributions (typically from Dairy Profit Team members who provide their services at no charge).

When this region reviewed farm financial data for dairy farms, they saw a net worth increase of \$381,150, compared to dairy farms statewide.

In addition to the teams' work with eighteen individual farms, the Northwest region sponsored several educational events including multiple workshops focusing on forage quality, annual pasture mixes, robotic dairy financial profitability, a Board of Animal Health presentation on dead animal carcass disposal, and FBM preliminary Dairy enterprise numbers. Other meetings dealt with financial management, and touring a recently constructed robotic milking barn. An additional 212 farms participated in these educational events.

“Without the help of the MDI program team, we would not have been able to develop a farm transition plan.”

Debbie Olson, Polk County Producer

“The Dairy Initiative program helps us to understand our farms financial position and to know our cost of production for milk. Our lender really appreciates getting this information. Also, getting ideas on farm transition planning has also been very beneficial.”

–David Schafer, Roseau County Producer

“We expanded the herd to include three new robotic milkers, we have been looking for ways to improve efficiency and ultimately produce more milk per cow per day.”

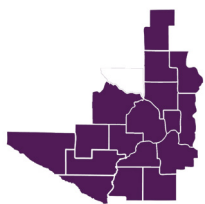
–Steinmetz (Parents), Mahnomen County Producer

“I saw the success that my parents have received as they expanded their dairy herd with robotic technology.”

–Steinmetz (Daughter) Mahnomen County Producer

“With the help of the diagnostic teams we have been able to transition the dairy operation to the next generation.”

–Weidenborner, Beltrami County Producer



MDI—South Central

South Central teams worked with 36 farms (21,100 cows) in FY 2017. A total of 124 industry professionals who served on Dairy Profit Teams donated time equivalent to \$133,875. The majority of these advisors serve on multiple teams and average 3.4 meetings per farm per year.

This region focused on helping dairy farm families sustain their farms during 2017, a year of low milk prices. In addition to the Dairy Profit Teams' work with 36 farms, the MDI South sponsored a number of educational opportunities for dairy producers and reached more than 600 farms (59,700 cows).

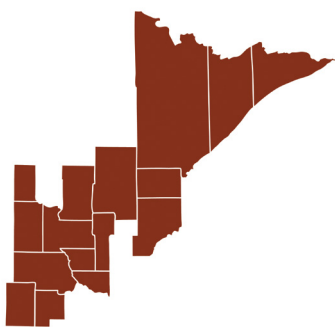
The South Central program estimates the economic impact of the MDI effort in their region was approximately \$4 million in FY 2017.

"We like the chance to pull our team together to effectively discuss innovative ideas, goals, progression and problem solving. We have worked through the general struggles of farming through MDI better than we would have otherwise. With the challenging state of dairy, our team has effectively found ways to balance it all and keep the budget."

Angela Tauer, Brown County

MDI-South Central Region's program provides a place to talk to all partners in the operation in order to receive feedback to make improvements. It has generated helpful ideas that have then been implemented and improved our business.

Kuball Dairy, Rice County



MDI—Central

Dairy Profit Teams in this region worked with 104 farms (12,659 cows) in FY 2017. 554 total new cows were added during the program year and twelve of the participants were first time enrollees to the program. Sixteen farms also graduated from our program.

The MDI Central region estimates the time donated by Dairy Profit Team advisor members was \$374,400 or 6,240 hours of volunteer time.

Teams focused on expansion/low cost expansion/low cost parlors, advising new farm start-ups, improving recordkeeping skills, increasing milk production, farm transfers and estate planning, partnership agreements, cow comfort, robots, automated calf feeders, water issues, Minnesota Pollution Control and labor issues.

MDI Central estimates the changes participating farms made as a result of working with Dairy Profit Teams had an economic impact of \$15,814,170. This amount includes added cows, reduced feed costs, and increases in net returns per cow.

"I am writing in support of Central Minnesota Dairy Profit Teams. I have used the program heavily over the past 8 years as a key tool to help producers evaluate and gain professional and relevant input on a wide variety of concerns from financial distress, to dairy expansion, to farm transitions. The strength of the program is that it allows us to build a team of professionals who work together help the producer identify their goals and develop reasonable solutions. These teams often continue even after the immediate problems were addressed as the producers have found the team approach to problem solving and idea gathering to be so effective. The program is highly beneficial to the dairy industry! From conversations with other Farm Business Management Instructors, I know that we all recognize the value of the Dairy Profit Team approach and appreciate the support it receives from the Minnesota Department of Agriculture!"

Nate Converse

Farm Business Management Instructor

The MDI Central region also teamed up with University of Minnesota Extension and agri-business professionals to offer field days on current topics of interest. We had 1,303 producers attend our co-sponsored educational events and we also co-sponsored educational events for 5,158 people with non-farm backgrounds through the Breakfast on the Farms held throughout our region.

MDI—Sustainable Farming Association

Sustainable Farming Association (SFA) teams worked with fourteen producers (1,113 cattle) throughout Minnesota in FY 2017. The SFA MDI coordinator role continues to serve as a support and resource tool for other MDI regions on issues like strategic/holistic planning, grazing management, integrated crop and livestock systems, low-cost parlor design, new farm start-ups, outdoor housing during the winter, alternative forages and cover crops.

Interest in cover crops as alternative forages is rapidly growing. Once producers begin to see results in two to four years, they become very enthusiastic and share information with other producers in their area. In turn, these producers become interested and want to begin incorporating cover crops and grazing those crops with their livestock. The two most common comments I hear from producers who begin to integrate cover crops and livestock into their operation is, “If you have livestock, this is a no-brainer,” and, “I wish I would have started this sooner.”

Interest in new dairy start-ups still exists. Most have the organic market in mind due to higher and historically more stable pay price. However, the current “quota” with some organic creameries is very stressful on these new dairies and those that have been investing in infrastructure anticipating milk pick-up to begin in 2018. They have been informed that this may not happen.

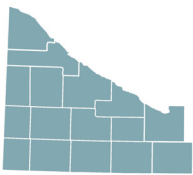
The SFA Livestock and Grazing Specialist/MDI Coordinator was featured in a March 25, 2017 Dairy Star article.

SFA Livestock and Grazing Specialist/MDI Coordinator is certified as a Master Grazer with Dairy Grazing Apprenticeship.

The SFA also sponsored nineteen educational workshops, seminars, and field tours reaching an estimated 1,250 people across the state.

SFA estimates their teams generated \$5,700 of in-kind contributions and \$7,050 in economic impact based on savings that existing dairies realized when switching practices.

MDI—Southwest



Southwest Dairy Profit teams worked with 25 farms (10,117 cows) in FY 2017. They estimate in-kind contributions from team members at \$50,400, and estimate their economic impact at \$629,900.

MDI Southwest worked closely with the multi-state I-29.

Moo University in coordinating workshops and tours. This past winter there was a workshop held in Southwest Minnesota called “Cold days, hot topics.” Subjects such as labor management, activity monitors and identification, and farm transition were covered. They had a great turn out reaching 15 to 20 farms in the Southwest region. In the spring I-29 Moo University held a dairy steer short course at the Central Plains Dairy Expo. We had a great turnout of 5 to 10 farms from the Southwest region who participated in this short course. We covered many topics within the beef industry including implanting protocols, marketing, and animal welfare.

Southwest also has active Peer Groups. Two groups are Robotic Dairy farms who get together over the winter months to learn from each other. One group is four farms who are considering going robotic. They want to learn whatever they

“The Minnesota Dairy Initiative in southwest Minnesota provides a great deal of value to dairy farms as well as our Farm Business Management program. MDI does a fantastic job of finding farms the help they need by assembling teams of experts individualized for each farm. Of the farms I work with, it is easy to recognize those who work with MDI because they have identified the strengths and weaknesses of their operations and are actively looking for ways to improve. They are also more aware of the soft skills and people issues like human resources, farm transfer, and political items that our dairy farms face.

I believe the forward thinking mentality, early diagnosis of concerns, and holistic approach to farming that many of my dairy farms possess is a direct result of their involvement with the Minnesota Dairy Initiative. This program benefits my own work by referring several farms that are rewarding to support because they are surrounded by a team of professionals focused on improving their operation.”

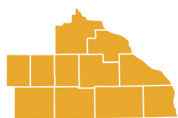
Mike Boersma

*Farm Business Management Instructor
Minnesota West Community and Technical College*

can, about each style of robot, and tour some facilities. Two other robotic peer groups are for established robot milking farms. They get together and discuss what is working for everyone on their farms and many producers have taken those ideas back home and implemented them on their own farms. They meet at different farms every meeting. The 4th peer group is exclusively Brown county producers covering topics including milk marketing, farm transition, and labor management.

This region will be offering training on Farm Transition next year. There are a number of producers interested in forming a peer group to discuss Farm Transition planning.

This fall, I-29 is hosting a bus tour on implementing technology for farm and family success. This tour will include a multi-generational farm, and a multi-generational farm implementing robotic milkers and on farm processing.



MDI—Southeast

Southeast teams worked with 54 farms (19,650 cows) in FY 2017. They estimate in-kind contributions for this region are \$106,312 and the economic impact of MDI-Southeast efforts at \$682,884.

This region reported that 2,711 people also participated in educational dairy workshops and events. In addition, by co-sponsoring events like “Breakfast on the Farm,” they helped expose 5,000 non-farm individuals to dairy farming.

Farming in SE Minnesota continues to be very difficult. Many farms are experiencing financial stress with both crop and milk prices below average. High crop inventories are helping the balance sheets of these farms, but there are a number of dairy farms selling out, renting out their land and finding other employment.

“We have been a member of the MDI program since my wife and I began operating the family farm in 2012. My MDI team continues to be a major contributor in the development of our farm, especially this year with my stray voltage issues.”

- Robert Kreidermacher

In addition, the perception still exists that Dairy Initiatives is designed for farms that are having difficulties. The Southeast believes that many successful farms can and have become even more successful/profitable with a team approach.

DAIRY BUSINESS PLANNING GRANTS

In FY 2017, the Dairy Business Planning Grants Program awarded \$30,000 to ten producers who are considering making significant changes to their operations. The average grant was \$3,000. The total amount granted was \$30,000, with recipients contributing a match of \$30,000.

Some applicants were considering expansion, while others were improving environmental stewardship, refinancing debt, or transferring the operation to the next generation.

COMPLIMENTARY EFFORTS

BENCHMARKING

Despite the belief that the size of a herd and milk production predicts the profitability of a dairy enterprise, farm financial data collected from 2012 to 2017 indicate that a well-managed small farm carrying a small debt load can provide a level of income for a family (www.finbin.umn.edu). Finbin contains the farm business management records for farms from farms in Minnesota as well as several other states. Using resources efficiently, maintaining a healthy herd, a base level of \$17/cwt of milk, and monitoring milk production and quality through the use of milk testing programs such as the ones offered by Dairy Herd Improvement Association (DHIA) can all return profits to a dairy enterprise.

While we can use benchmarks to compare the performance of different enterprises to an average, many variables can affect performance and profits in any given year including weather, herd health, interest rates, debt load, milk marketing conditions, the availability and cost of labor, and the cost of feed and supplements (Table 1). Milk price in particular has had a strong effect on dairy profitability recently. In 2014, Minnesota dairies reported receiving an average milk price of \$24.45/cwt¹. That year, they saw an average profit of \$1,000/cow. By 2017, milk prices had plummeted to an average of \$17.90/cwt, and the average dairy cow generating \$170 head/year.

Most experts predict that dairy farms will continue to experience financial challenges in 2018 and 2019.

Table 1. 2017 Dairy Enterprise Data

Hired labor	\$105/cow
Total interest expense	\$90/cow
Total direct expenses	\$13/cwt
Total direct and overhead expenses	\$15.37/cwt
Milk produced (pounds)	24,6000 lbs./cow
Cull rate	30%
Turnover rate	36%
Percent of barn capacity	113%
Feed cost	\$7.80 /cwt
Milk price and government support	\$17.90/cwt
Total debt to asset ratio	<50%
Debt per cow	<\$3,000
Labor hours per cow	<41
Average somatic cell count	<300,000

Source: www.finbin.umn.edu

¹ Milk is priced per 100 pounds, a hundredweight (CWT)

QUALITY COUNT\$

Quality Count\$ is a statewide campaign to improve milk quality in Minnesota. Quality Count\$ is led by the University of Minnesota with help from the University of Minnesota Extension, the MDA, regional MDI teams, FBM instructors, and Minnesota's dairy processors.

Somatic Cell Count (SCC) is a main indicator of milk quality. The majority of somatic cells are leukocytes (white blood cells) - which become present in increasing numbers in milk usually as an immune response to a pathogen - and a small number of epithelial cells, which are milk-producing cells shed from inside of the udder when an infection occurs. Partner organizations worked together to help farmers reduce herds' SCC to below 300,000. The SCC is quantified as the number of cells per ml of milk. In general terms:

An individual cow SCC of 100,000 or less indicates an 'uninfected' cow, where there are no significant production losses.

A threshold SCC of 200,000 would determine whether a cow is infected. Cows with a result of greater than 200,000 are highly likely to be infected on at least one quarter.

Cows infected with significant pathogens have an SCC of 300,000 or greater.

Essentially, a lower SCC indicates better animal health, as somatic cells originate only from inside the animal's udder. SCC monitoring is important because as the number of somatic cells increases, milk yield is likely to fall, primarily due to the damage to milk-producing tissue in the udder caused by mastitis pathogens and the toxins they produce, particularly when epithelial cells are lost.

Since the Quality Count\$ program began in 2003, the average SCC on Minnesota dairies has fallen by 40% (Table 2).

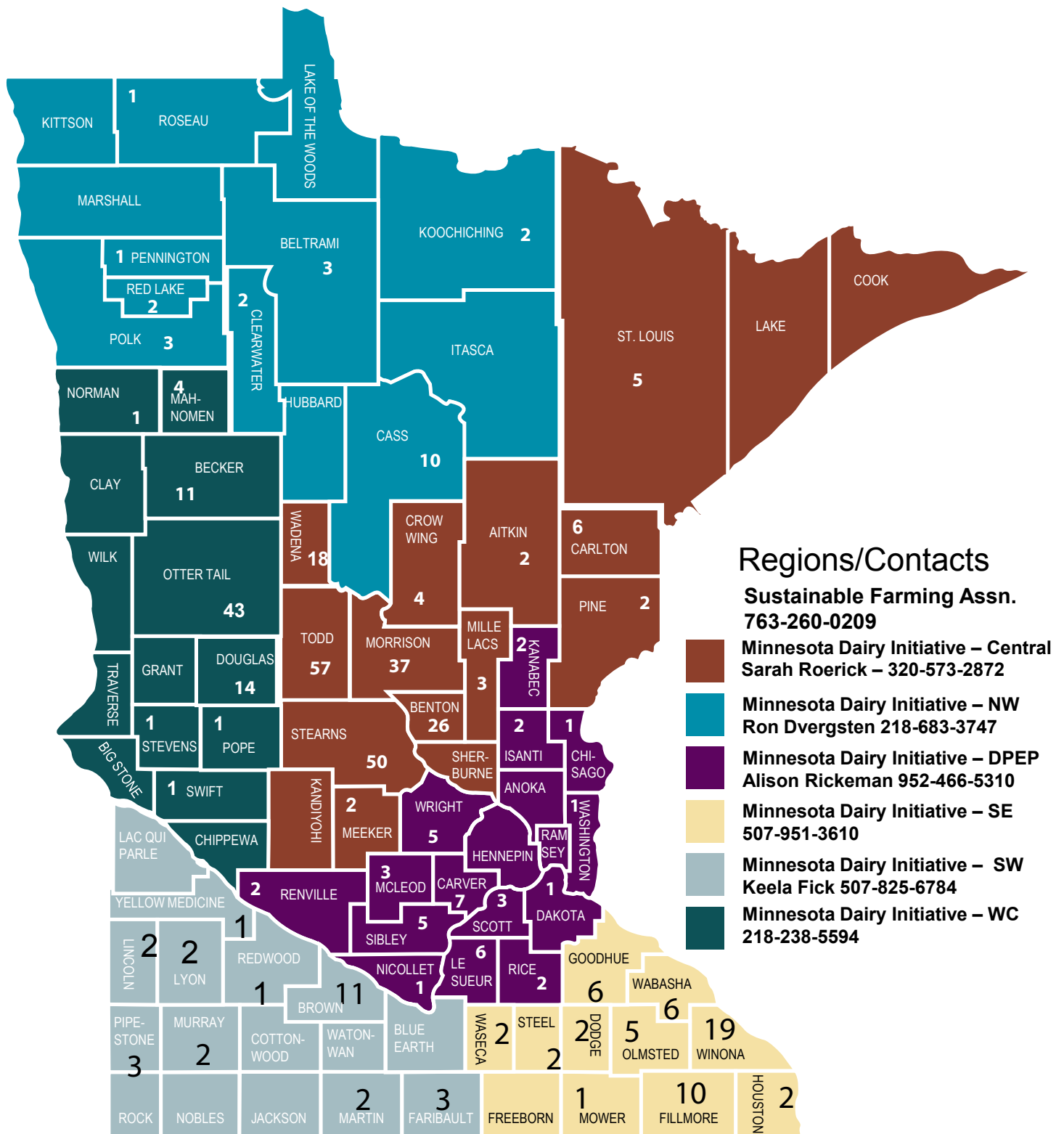
Table 2.
Average SCC of Minnesota Herds
Enrolled in DHIA Milk Quality Testing

Calendar Year	Average SCC (x1,000)
2002	420
2003	397
2004	362
2005	366
2006	357
2007	347
2008	321
2009	297
2010	294
2011	266
2012	240
2013	234
2014	245
2015	251
2016	250
2017	239

Source: MN DHIA

APPENDIX A

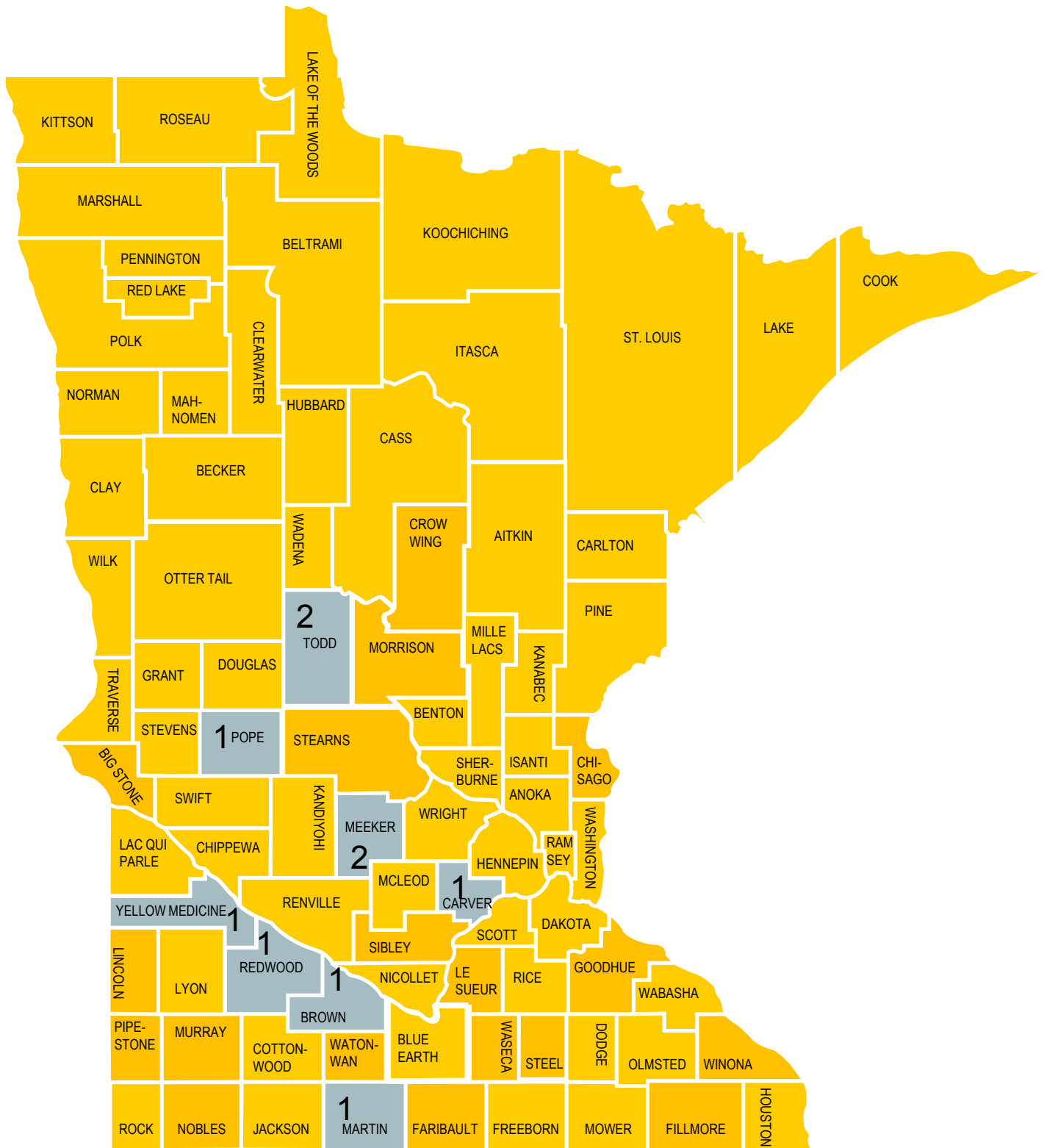
Dairy Development Profitability and Enhancement Teams and Regions



341 Teams across the state in FY2017

APPENDIX B

Minnesota Department of Agriculture FY2017 Dairy Business Planning Grants



APPENDIX C

Minnesota Laws and Statutes

Laws 1997, Chapter 216, Section 7, Subdivision 2

1999 Minn. Stat. Chapter 231, Section 11, Subd.2

MN Session Laws 2001, 1st Special Session, Chapter 2, Section 9, Subdivision 2

MN Session Laws of Minnesota 2003, Chapter 128

2005 First Special Session Ch. 1 Article 1 Sec. 3 Subdivision 5

2007 Ch. 45 Article 1 Sec. 3 Subdivision 5

MN Laws 2009, Chapter 94, Article 1

MN Laws 2011, Chapter 14, Section 3, Subdivision 5

MN Session Laws, 2013, Chapter 114, Subdivision 5,

MN Session Laws, 2015 Chapter 17 Subdivision 3

MN Session Laws, 2017 Chapter 88 Subdivision 3C