Risk Management Options for Dairy Producers

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Iowa's dairy industry has a very important impact on Iowa's economy. The dairy industry contributes over $5.6 billion to the state's economy annually[1], which equates to $25,495 for every dairy cow in the state. Each dairy has a different story, and each family different priorities; however, all strive to produce a quality product and stay in business for the next generation.

US dairy producers have faced low milk prices in recent years. These low prices translated into low to negative operating margins and have resulted in financial deterioration and significant reductions in the number of dairy operations. According to the USDA, since 2013 the number of certified dairy herds has declined 20% (46,975 to 37,468). COVID-19 started wreaking havoc to most sectors of the economy, including dairy, in February 2020. The milk supply exceeded demand by as much as 10% in some months, and prices dropped accordingly as the COVID-related shutdowns impacted dairy product usage. In the latter half of 2020[2], exports aided the equilibrium with a 12% increase, but production milk gains were 1.9%. In November 2020, Class III milk prices set a monthly record high at $23.34 per hundredweight (cwt.). After a December 2020 price decline, Class III price averaged $18.25/cwt. in 2020. Calendar year 2021 average milk prices are projected at $15.60/cwt. Producers are adjusting to manage through the whipsaw of milk prices.

Government Support

The support the federal government provides to dairy producers has evolved over the past several years, but much of that support focuses on the **dairy margin**, the difference between the milk price and the feed costs to produce milk. The 2014 Farm Bill **Margin Protection Program (MPP)** made margin payments to participating dairy producers when a formula-based national milk margin fell below a producer-selected margin (choices ranged from $4.00 to $8.00 per cwt.) for two consecutive months. Average annual all-milk prices declined from $24/cwt. in 2014 to slightly more than $16/cwt. by 2018. Because feed costs also declined, national monthly milk margins averaged $9.73/cwt., which resulted in only four MPP payments from March 2014-2017[3]. Administrative fees and participation premiums amounted to $100 million paid by producers, while USDA paid out $12 million in margin payments in the same 2014-2017 period. Amendments to MPP through the Bipartisan Budget Act of 2018, resulted in more support to the dairy industry as USDA payouts increased to $254 million during 2018.

The 2018 Farm Bill revised the dairy program from the 2014 Farm Bill. The new program, **Dairy Margin Coverage (DMC)**, a voluntary risk management program for dairy producers, is designed to improve the safety net for milk producers. DMC replaced the Margin Protection Program (MPP). DMC expanded coverage choices for dairy producers, while maintaining a focus on dairy margins. DMC offers stronger and more effective protection to dairy producers when the difference between the all-milk price and average feed price (the margin) falls below a certain dollar amount selected by the producer.

Dairy Margin Coverage Program (DMC)

The Dairy Margin Coverage (DMC) program[4] is similar to MPP in that it pays participating dairy producers when monthly margins fall below producer-selected levels. The DMC milk price and feed ration cost formula is unchanged from MPP. DMC is viewed more attractive for the dairy

[1] A Comprehensive Review of Iowa's Dairy Industry, https://www.iowadairy.org/media/sites/9/2020/12/A-Comprehensive-Review-of-Iowas-Dairy-Industry.pdf

[2] National Milk Producers Federation, 2020 Annual Report, https://www.nmpf.org/2020annualreport/

[3] IF11188 | 2018 Farm Bill Primer: Dairy Programs https://crsreports.congress.gov/product/pdf/IF/IF11188

[4] USDA Farm Service Agency Dairy Margin Coverage Fact Sheet, June 2019, https://www.fsa.usda.gov/Assets/USDA-FSA-Public/usdafiles/FactSheets/2019/dairy_margin_coverage_program-june_2019_fact_sheet.pdf

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producers because (a) the producer is provided basically free catastrophic coverage (there is a small administrative fee); and (b) higher margin protection can be purchased by producers at lower premium costs. The milk produced by the farm is divided into two tiers, TIER I covers the first 5 million pounds of milk, and TIER II covers any milk beyond that 5 million pounds. For most operations, the milk production history is based upon the highest milk production in 2011-2013.

If the producer elects to participate, DMC offers higher margin choices (up to $9.50/cwt.) for the first 5 million pounds (Tier I) of milk produced. After paying the $100 administrative fee, producers are automatically covered at the $4.00/cwt. margin. Participating producers are allowed to purchase margin coverage for milk production exceeding 5 million pounds (Tier II). NOTE: MPP allowed only Tier I margin coverage purchases up to $8.00/cwt.

Producers are allowed to select margin and production coverage levels annually. In addition:

- A producer who selects a Tier I margin coverage above $8.00/cwt. may choose their Tier II (production greater than 5 million pounds) coverage between $4.00/cwt. to $8.00/cwt.; if Tier I coverage (production up to 5 million pounds) is selected at $8.00/cwt. or less, then coverage for Tier II production is required at that same level;
- The prohibition on dairy producers participating in both the margin (DMC) program and Livestock Gross Margin – Dairy (LGM) insurance (which also insures the margin between feed costs and the designated milk price) was removed; and
- Larger producers are able to cover up to 95% of their production history greater than 5 million pounds (vs. 90% under MPP); and reduces the minimum requirement to 5% (for milk pounds up to 5 million).

Example of Dairy Margin Coverage Program

Lock-In Coverage: Yes

Approved Production History: 22,350,000 lbs.
Coverage Level Elected: 95%
22,350,000 lbs. × 95% = 21,232,500 lbs. (Converted to hundredweight = 212,325 cwt.)

Tier I (first 5 million lbs.)
Coverage Level Threshold Election: $9.50
Premium per cwt.: $0.150
50,000 cwt. × $0.150 = $7,500 × 25% (premium discount) = $1,875
$7,500 – $1,875 = $5,625 premium for first 5 million lbs.

Tier II (additional covered production history over 5 million lbs.)
Coverage Level Threshold Election: $5.00
Premium per cwt.: $0.005
212,325 cwt. – 50,000 cwt. (covered under Tier I) = 162,325 cwt.
162,325 cwt. × $0.005 = $811.63 × 25% (premium discount) = $202.91
$811.63 – $202.91 = $608.72 premium for covered production history over 5 million lbs.

Total Calculated Premium: $5,625.00 + $608.72 = $6,233.72

Administrative Fee Due: $100

Example January 2021 Payment Calculation (using prices from Figure 2)
Coverage Level – Margin Rate ($9.50 – $7.14 = $2.36)
Tier I Production History: 5,000,000 lbs. / 100 = 50,000 cwt.
50,000 cwt. / 12 months = 4,166.67 cwt./month
4,166.67 × $2.36 = $9,833.33
$9,833.33 × 5.7% (2021 sequestration rate) = $560.50
$9,833.33 – $560.50 = $9,272.83 January 2021 Payment

Figures 1 and 2 show recent prices used in DMC calculations, www.fsa.usda.gov/programs-and-services/dairy-margin-coverage-program/index.

Figure 1. 2020 Prices Used in Calculations for the Dairy Margin Coverage Program

Show prices for the year: 2020 **Show Me**

Month	Corn ($/bu)	Blended Alfalfa Hay ($/ton)	Soybean Meal ($/ton)	All Milk ($/cwt)	Final Feed Costs for DMC($/cwt)	Milk Margin Above Feed Costs for DMC($/cwt)
January	3.79	190.50	300.11	19.60	8.88	10.72
February	3.78	190.50	295.28	18.90	8.84	10.06
March	3.68	190.00	312.38	18.00	8.85	9.15
April	3.29	195.00	295.39	14.40	8.37	6.03
May	3.20	195.00	288.56	13.60	8.23	5.37
June	3.16	190.00	288.66	18.10	8.11	9.99
July	3.21	183.00	291.25	20.50	8.09	12.41
August	3.12	182.00	290.18	18.80	7.97	10.83
September	3.41	181.50	319.99	17.90	8.50	9.40
October	3.61	182.50	367.11	20.20	9.07	11.13
November	3.79	183.50	387.83	21.30	9.43	11.87
December	3.97	186.00	396.68	18.50	9.72	8.78

*At a milk margin minus feed costs of $9.50 or less, payments are possible depending on the level of coverage chosen by the dairy producer.

Figure 2. 2021 Prices Used in Calculations for the Dairy Margin Coverage Program

Show prices for the year: 2021 **Show Me**

Month	Corn ($/bu)	Blended Alfalfa Hay ($/ton)	Soybean Meal ($/ton)	All Milk ($/cwt)	Final Feed Costs for DMC($/cwt)	Milk Margin Above Feed Costs for DMC($/cwt)
January	4.24	188.50	439.24	17.50	10.36	7.14
February	4.75	193.00	427.28	17.10	10.88	6.22
March	4.89	195.50	410.02	17.40	10.94	6.46
April	5.31	199.00	413.36	18.40	11.46	6.94
May	5.91	210.00	421.03	19.20	12.31	6.89
June						
July						
August						
September						
October						
November						
December						

*At a milk margin minus feed costs of $9.50 or less, payments are possible depending on the level of coverage chosen by the dairy producer.

Subsequent (ad hoc) USDA Dairy Programs

Beyond the standing programs from the 2018 Farm Bill, dairy has been included in several of the ad hoc assistance packages paid out over the past few years. As trade and tariff discussions with China continued, dairy was included in the Market Facilitation Program (MFP) subsidies in the fall of 2019. These one-time payments to dairy operations that were in business on June 1, 2019 were $0.20 per hundredweight, based upon production history.

The COVID-19 pandemic caused a substantial economic downturn in the US. Directly impacting dairy was the reduction in dairy usage via school lunchrooms (from school closings) and the closing of many restaurants. These changes severely upset the dairy supply chain from an already-excess production (vs. demand) condition, resulting in some milk dumping.

The Coronavirus Food Assistance Program (CFAP 1 & 2) provided financial assistance to dairy producers who commercially marketed milk in 2020. CFAP 1 payments for milk totaled $1.799 billion as of July 2021[5]. However, there were some gaps in the support. CFAP 1 eligible dairy operations that dissolved prior to CFAP 2 enrollment are not eligible for CFAP 2 payments. Dairy operations that dissolved after enrollment in CFAP 2 are eligible for a prorated payment. Payment calculations are found at https://www.farmers.gov/cfap2/dairy. The USDA reopened CFAP 2 applications on April 5, 2021.

With COVID-19 significantly altering how dairy products reached consumers, two federal government programs administered through the Small Business Administration have also provided support to the industry: (a) Paycheck Protection Program (PPP), and (b) Economic Injury Disaster Loan (EIDL). These programs provided short-term cash injections for farm businesses. PPP has gone through a couple of rounds. The second PPP loan application deadline (to fund payroll, utilities, etc.) closed May 31, 2021[6]. EIDL's purpose[7] includes payment of financial obligations (replenish working capital) and operating expenses that relate to the COVID-19 economic disaster.

Dairy Insurance

The 2018 Farm Bill provisions allowed dairy operations to participate in both the USDA government subsidy program (Dairy Margin Coverage, DMC) and private insurance (Livestock Gross Margin Insurance, LGM-Dairy or Dairy Revenue Protection, Dairy-RP). This combination of risk management was prohibited by earlier farm bill legislation.

LGM-Dairy[8] is an agricultural insurance policy that provides protection against the loss of gross margin (market value of milk minus feed costs; when feed costs rise or milk prices drop). The indemnity at the end of the 11-month insurance period is the difference, if positive, between the gross margin guarantee and the actual gross margin. LGM-Dairy uses futures prices for corn, soybean meal and milk to determine the expected gross margin and the actual gross margin for dairy producers. Local market prices received by the producer are not used in the computation.

Key provisions of LGM-Dairy include:

- Only milk sold commercially or privately for primarily human consumption is eligible;
- LGM-Dairy is sold on the last business Friday of each month;
- Gross margin means market value less feed costs;
- Future prices for corn, soybean meal and milk come from the Chicago Mercantile Exchange;

[5] USDA Farmers.gov, Coronavirus Food Assistance Program Data, https://www.farmers.gov/cfap/data

[6] National Milk Producers Federation, PPP News release, https://www.nmpf.org/ppp-updated-and-application-deadline-extended-the-latest-on-how-dairy-farmers-and-co-ops-can-still-apply/

[7] US Small Business Administration, Economic Injury Disaster Loans, https://www.sba.gov/funding-programs/disaster-assistance/economic-injury-disaster-loans

[8] USDA Risk Management Agency Livestock Gross Margin Insurance, Dairy Cattle, Fact Sheet, https://www.rma.usda.gov/en/Fact-Sheets/National-Fact-Sheets/Livestock-Gross-Margin-Insurance-Dairy-Cattle

- Premiums depend upon the marketing plan, coverage choices, deductible level and price volatility; a premium subsidy may be available for multiple-month policies;
- LGM-Dairy is not property or casualty risk insurance, e.g. cattle death, etc.; and
- Indemnity payment, if any, is the difference between the gross margin guarantee and the actual gross margins during the 11-month insurance period.

Discussion with a trusted crop commodity insurance agent will clarify additional LGM-Dairy policy provisions.

LGM-Dairy covers the difference between the gross margin guarantee and the actual gross margin; however, does not indemnify for:

- Dairy cattle death,
- Unexpected decreases to milk production,
- Unexpected increases in feed use,
- Anticipated or multiple-year declines (in milk prices) or increases (in feed costs).

LGM-Dairy coverage is available on a rolling 11-month window. Starting July 1, 2021, LGM sales occur on each Thursday of the month. If a dairy producer signs up for LGM-Dairy in October, their insurance period covers the months of November to the following September. LGM-Dairy does not allow any milk to be insured in the first month of an insurance period, so no milk could be insured in November in this example. For each month in the insurance period, the producer selects an amount of milk to insure and the relevant amount of feed (corn and soybean meal) to produce that milk.

Expected prices for milk, corn and soybean meal are derived from the futures markets for each of the commodities. The relevant futures prices for setting the expected prices are the simple average of the two trading days prior to and including the last (business) Friday in the month when LGM-Dairy is purchased. For months that do not have futures contracts, the prices from surrounding months with futures are used (for example, the corn price for April is the average of the March and May corn prices, as both March and May have corn futures contracts and April does not). Actual prices are determined in a similar way, using the simple average of the three trading days prior to the futures contract expiration.

The producer receives a Notice of Probable Loss if there is an indemnity. Within 15 days of receiving the Notice of Probable Loss, the producer will submit a marketing report that shows the actual milk marketed for each month of the insurance period. Producers receive claim payments after the insurance period's last milk coverage month. Claims are settled and notices sent every two months.

Dairy Revenue Protection (Dairy–RP) insures against unexpected declines in quarterly revenues from milk sales. Expected revenues are based upon future prices for milk and dairy commodities.

Like LGM-Dairy, Dairy-RP is private insurance purchased through an authorized crop insurance agent, and is designed to insure against unexpected declines in quarterly milk sales (versus a guaranteed coverage level). Dairy-RP provides insurance for the difference between the final revenue guarantee and actual milk revenue. Indemnity claims occur when the final revenue guarantee falls below expected revenue (based upon futures milk and dairy commodity prices). Coverage is established by adding quarterly coverage endorsements to the policy.

Dairy-RP offers two pricing options[9]: (a) Class Pricing; and (b) Component Pricing. The producer selects a coverage level (between 80-95%, in 5% increments) which then establishes the premium subsidy (range from 44-55%).

[9] USDA Risk Management Agency, Dairy Revenue Protection Fact Sheet, https://www.rma.usda.gov/en/Fact-Sheets/National-Fact-Sheets/Dairy-Revenue-Protection

Conclusion

The dairy risk management government program (Dairy Margin Coverage) and insurance programs (Livestock Gross Margin Insurance-Dairy or Dairy Revenue Protection) provide risk mitigation tools for eligible and enrolled dairy producers.

Individual producers will need to consult their ag lender, insurance agent and others to decide the best dairy risk tools to use for their unique operation.

LEARN MORE in the accompanying video on **Risk Management Options for Dairy Producers**, https://vimeo.com/554495982

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