Livestock Gross Margin Insurance

Risk Management for Dairy Producers

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What is Livestock Gross Margin-Dairy?

- LGM-Dairy is a form of insurance designed to provide protection to dairy farmers against:
  - *rising feed costs*
  - *falling milk prices*
  - *or both*
  - *bundled option insurance*

USDA United States Department of Agriculture

RMA Program Aid Number 2021

A Risk Management Agency Fact Sheet

Livestock Gross Margin

Dairy Cattle

July 2011

Livestock Gross Margin (LGM)
LGM-Dairy Cattle (LGM Dairy) provides protection against loss of gross margin (market value of milk minus feed costs) on milk produced from dairy cows. LGM-Dairy uses the Chicago Mercantile Exchange Group futures prices for corn, soybean meal, and class III milk to determine the expected gross margin and the actual gross margin.

Producer **premium subsidy** is available for the LGM-Dairy plan of insurance and is determined by the deductible amount chosen by the producer. All administrative and operating subsidies are paid by the Federal Crop Insurance Corporation.

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. The price the producer receives at the local market is not used in these calculations.

Availability
LGM is available to any producer who owns dairy cattle in the 48 contiguous states.

Milk Coverage Availability
Only milk sold for commercial or private sale primarily intended for final human consumption from dairy cattle fed in any of the eligible states is eligible for LGM Dairy coverage. There is no minimum number of hundredweights a producer can insure. However, the maximum amount of milk that can be insured is 24 million pounds per crop year.

Coverage Levels/Deductibles
Producers can select deductible levels between $0 and $2.00 per hundredweight of milk in $0.10 increments.

Sales Closing
To enroll, producers must sign-up on the last business Friday of the month, submitting an application with a target marketing report for the milk and corn and soybean meal equivalents to be insured.

Prices
Prices for LGM Dairy are based on simple averages of futures contract daily settlement prices, and are not based on the prices the producer receives at the market.

Insurance Months
The insurance period contains the 11 months following sales closing. For example, the insurance period for the January 29 sales closing date contains the months of February through December. However, coverage begins in the second month of the insurance period, so the coverage period for this example is the months of March through December.

LGM Selling Period
LGM Dairy is sold on the **last business Friday** of each month. The sales period begins as soon as RMA reviews the data submitted by the owner and developer of LGM-Dairy after the close of markets on the last day of the price discovery period. The sales period ends at 8:00 p.m. CST the following evening. If expected milk and feed prices are not available on the RMA Web site, LGM Dairy will not be offered for sale for that insurance period.

Annual Premium
LGM premiums depend on producers' marketing plan, deductible level, futures and price volatility. Premium billing dates are determined by the target marketing report and will be the first business day of the month following the last month that a producer reports their insured marketings in the target marketings report.

Cause of Loss
LGM Dairy covers the difference between the gross margin guarantee and the actual gross margin. LGM Dairy does **not** insure against dairy cattle death loss, unexpected decreases in milk production, or unexpected increases in feed use. Indemnities to be paid will equal the difference between the gross margin guarantee and the actual total gross margin for the insurance period.

Risk Management Agency

Program Aid Number

What is LGM-Dairy?

- LGM-Dairy insurance covers losses in gross margin from milk production
- Gross margin is calculated as the difference between the expected market value of class III milk and the associated feed costs (corn and soybean meal price).

What is LGM-Dairy?

- LGM-Dairy coverage is based on target marketings of milk and estimated feed use
- Target marketings (expected milk production) insured under LGM-Dairy is flexible, allowing a farm to purchase only the level of coverage desired

How Does LGM-Dairy Work?

- Prices for LGM-Dairy are based off of simple averages from the Chicago Mercantile Exchange (CME) Group futures contract daily settlement prices
  - *Class III milk*
  - *Corn*
  - *Soybean Meal*
- Local market price received by producer is not used.

How Does LGM-Dairy Work?

- To enroll, producers must sign up on the last business Friday of the month.
- LGM-Dairy insurance period is limited to the 11 months following the sales closing date.
- Coverage begins the second month of the insured period (10 months of coverage).

Expected Target Marketings

- Expected target marketings are an estimate of the hundredweight of milk to be produced each month.
- Upper limit of 240,000 cwt. per crop year.
- Customizable to your production and insurance needs

Jun '14	Jul '14	Aug '14	Sep '14	Oct '14	Nov '14	Dec '14	Jan '15	Feb '15	Mar '15	Apr '15	May '15
		1	2	3	4	5	6	7	8	9	10
Purchase at End of Month	No Cover-age	Insurance Contract Period									
Covered Months		10000 cwt.	10000 cwt.	10000 cwt.	15000 cwt.	15000 cwt.	10000 cwt.	10000 cwt.	15000 cwt.	10000 cwt.	10000 cwt.

Expected Feed Costs

- An estimate of the monthly feed costs needed to produce the expected target marketings.
- Expressed in corn and soybean meal equivalents.
- Producers have the option of either estimating their own or using the default values.
  - *Note: Producer estimates must fall within an acceptable range.*

Jun '14	Jul '14	Aug '14	Sep '14	Oct '14	Nov '14	Dec '14	Jan '15	Feb '15	Mar '15	Apr '15	May '15
Covered Months		10000 cwt.	10000 cwt.	10000 cwt.	15000 cwt.	15000 cwt.	10000 cwt.	10000 cwt.	15000 cwt.	10000 cwt.	10000 cwt.
Corn		140 tons	140 tons	140 tons	210 tons	210 tons	140 tons	140 tons	210 tons	140 tons	140 tons
Soybean Meal		20 tons	20 tons	20 tons	30 tons	30 tons	20 tons	20 tons	30 tons	20 tons	20 tons

Expected Total Gross Margin

- The difference between the Expected Market Value of Milk and the Expected Feed Costs.
- Uses CME futures contracts prices.

Jun '14	Jul '14	Aug '14	Sep '14	Oct '14	Nov '14	Dec '14	Jan '15	Feb '15	Mar '15	Apr '15	May '15
		Expected Prices									
Milk ($/cwt.)		19.95	19.90	19.69	19.18	18.69	18.27	18.10	18.07	18.03	18.06
Corn ($/bu.)		4.77	4.76	4.76	4.76	4.76	4.79	4.82	4.85	4.88	4.91
Soybean Meal ($/ton)		460.56	426.12	397.42	395.54	393.65	393.01	393.40	393.78	393.62	393.45

Expected Total Gross Margin

- The difference between the Expected Market Value of Milk and the Expected Feed Costs.

Jun '14	Jul '14	Aug '14	Sep '14	Oct '14	Nov '14	Dec '14	Jan '15	Feb '15	Mar '15	Apr '15	May '15
Expected Values ($)											
Milk Revenue		199,497	198,996	196,895	287,693	280,342	182,694	180,993	271,040	180,293	180,592
Feed Cost		33,061	32,321	31,747	47,564	47,508	31,809	31,966	48,185	32,270	32,417
Gross Margins		166,436	166,674	165,148	240,128	232,834	150,885	149,027	222,854	148,022	148,175

- **Expected Total Gross Margin = $1,790,184.**

Deductible Level

- The deductible level is the amount of loss not covered by the insurance contract.
- Producers can select deductible levels between $0 and $2.00 per hundredweight of milk in $0.10 increments.
- Higher Deductible Level →
  - *Lower Premium*
  - *You are assuming more of the risk.*
  - *Less likely to receive an indemnity*
- Higher Deductible Level → Higher the premium subsidy
  - *Subsidies range from 18% to 50%*
  - *$0 deductible level → 18% premium subsidy*
  - *$2 deductible level→ 50% premium subsidy*

Gross Margin Guarantee

- The Gross Margin Guarantee is the Expected Total Gross Margin minus the product of the Deductible Level times the Total Expected Target Marketings.
- In our example,
  - *Expected Total Gross Margin = $1,790,184*
  - *Total Expected Target Marketings = 115,000 cwt.*
- Assume a $2.00 Deductible Level
  - *Gross Margin Guarantee = $1,790,184– (2 * 115,000) = $1,560,184*
  - *$1,560,184/115,000 cwt. = $13.57/cwt.*
- Assume a $0 Deductible Level
  - *Gross Margin Guarantee = $1,790,184*
  - *$1,790,184/115,000 cwt. = $15.57/cwt.*

How Does LGM-Dairy Work?

- Indemnity payments are made when the actual gross margin falls below the gross margin guarantee
- The actual gross margin is calculated based on expected target marketings each month of coverage and actual prices
- Actual prices are determined by Average Futures Settle Prices from 1st, 2nd, and 3rd days prior to last trading day for each contract

Annual Premium

- Premiums are due at the first business day of the month following the last month of reported insured marketings
- Premiums depend on each producer’s insurance plan (expected marketings, coverage selected, deductible level, expected futures prices and price volatility, etc.)
- Premiums are calculated using 5,000 simulated payout profiles
- Total Premiums = Average of simulated payouts + 3%
- In our example, $0 Deductible Level
  - *Gross Margin Guarantee = $1,790,184*
  - *Average of expected payouts = $96,852*
  - *Total Premium = 96,852 * 1.03 = $99,758*
  - *Premium Subsidy = 99,758 * 0.18 = $17,956*
  - ***Producer Premium = 99,758 – 17,856 = $81,801*** **= $0.71/cwt.**

Implied Floor on Net Gross Margin = $1,708,383

= $14.86/cwt.

How Does LGM-Dairy Work?

- In our example, $2.00 Deductible Level
  - *Gross Margin Guarantee = $1,560,184*
  - *Average of expected payouts = $19,297*
  - *Total Premium = 19,297 * 1.03 = $19,876*
  - *Premium Subsidy = 19,876 * 0.50 = $9,938*
  - ***Producer Premium = 19,876 – 9,938 = $9,938*** **= $0.09/cwt.**
- Premiums are due at the first business day of the month following the last month of reported insured marketings.

Implied Floor on Net Gross Margin = $1,550,246

= $13.48/cwt.

LGM-Dairy Summary

- LGM-Dairy is flexible insurance program for dairy producers to protect against falling milk prices and/or rising feed prices.
  - *Customizable to your production and insurance needs*
  - *Need not insure all months or all production*
- LGM-Dairy can be thought of as Bundled Option Insurance.
  - *Similar to buying a combination of put and call options.*
  - *Put Option on Class III milk to protect against falling milk prices.*
  - *Call Options on corn and soybean meal to protect against rising feed prices.*

California: LGM-Dairy Policy Data - 2012

2012

County	Pol Sold	Pol Earn Prem	Pol Indem	Units Earn Prem	Units Indem	Number of Head	Liabilities	Total Premium	Subsidy	Indemnity	Loss Ratio	Producer Premium	Producer Loss Ratio
Fresno	5	4	1	4	1	811,000	14,085,330	360,061	177,778	10,342	0.03	182,283	0.06
Kern	2	2	0	2	0	420,000	7,308,000	159,764	79,883	0	0	79,881	0
Kings	3	2	0	2	0	314,980	5,484,851	130,194	62,493	0	0	67,701	0
Madera	1	1	0	1	0	120,000	2,083,200	83,004	39,842	0	0	43,162	0
Merced	8	8	4	8	4	897,280	15,600,833	354,070	173,200	144,993	0.41	180,870	0.80
Sacramento	1	0	0	0	0	0	0	0	0	0	0	0	0
San Joaquin	1	1	0	1	0	110,000	1,909,600	53,453	25,657	0	0	27,796	0
Sonoma	2	2	1	2	1	71,000	1,232,560	31,027	14,893	1,464	0.05	16,134	0.09
Stanislaus	11	10	4	10	4	1,321,278	22,944,001	632,866	298,940	57,838	0.09	333,926	0.17
Sutter	1	1	0	1	0	80,000	1,388,800	38,434	18,448	0	0	19,986	0
Tulare	18	17	2	17	2	2,267,736	39,461,922	1,118,362	475,394	12,659	0.01	642,968	0.02
Grand Total:	53	48	12	48	12	6,413,274	111,499,097	2,961,235	1,366,528	227,296	0.08	1,594,707	0.14

California: LGM-Dairy Policy Data - 2013

2013

County	Pol Sold	Pol Earn Prem	Pol Indem	Units Earn Prem	Units Indem	Number of Head	Liabilities	Total Premium	Subsidy	Indemnity	Loss Ratio	Producer Premium	Producer Loss Ratio
Alameda	1	0	0	0	0	0	0	0	0	0	0	0	0
Fresno	1	1	1	1	1	57,000	1,159,380	25,333	12,160	4,892	0.19	13,173	0.37
Kings	4	4	4	4	4	900,000	18,306,000	317,624	158,813	399,094	1.26	158,811	2.51
Merced	5	4	1	4	1	445,600	8,568,008	172,955	72,062	1,490	0.01	100,893	0.01
Sacramento	1	1	1	5	1	162,000	3,017,540	92,449	43,557	304	0	48,892	0.01
San Joaquin	2	2	0	2	0	118,542	2,158,197	43,673	19,663	0	0	24,010	0
Sonoma	1	1	0	1	0	15,000	305,100	12,480	5,990	0	0	6,490	0
Stanislaus	12	11	3	30	5	1,577,744	30,998,712	968,666	383,554	43,360	0.04	585,112	0.07
Tulare	12	8	3	13	4	1,112,000	21,534,516	588,608	248,021	84,634	0.14	340,587	0.25
Grand Total:	39	32	13	60	16	4,387,886	86,047,453	2,221,788	943,820	533,774	0.24	1,277,968	0.42

California: LGM-Dairy Policy Data – 2014

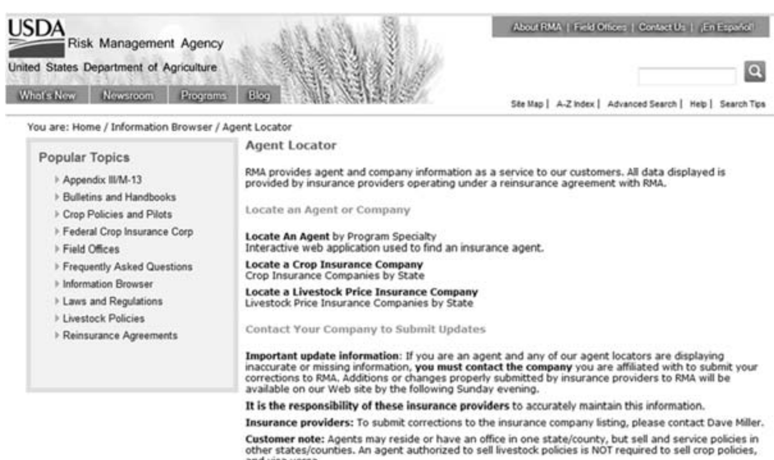
2014

County	Pol Sold	Pol Earn Prem	Pol Indem	Units Earn Prem	Units Indem	Number of Head	Liabilities	Total Premium	Subsidy	Indemnity	Loss Ratio	Producer Premium	Producer Loss Ratio
Fresno	1	1	0	1	0	60,000	1,037,400	12,992	6,236	0	0	6,756	0
Kings	6	6	0	7	0	826,300	14,348,733	291,959	79,718	0	0	212,241	0
Merced	5	4	0	4	0	639,360	12,904,486	372,752	119,369	0	0	253,383	0
San Joaquin	1	1	0	1	0	22,800	492,252	15,878	6,034	0	0	9,844	0
Stanislaus	8	8	0	13	0	599,011	12,448,123	285,711	123,103	0	0	162,608	0
Tulare	15	6	0	8	0	795,000	15,374,950	214,063	87,947	0	0	126,116	0
Grand Total:	36	26	0	34	0	2,942,471	56,605,944	1,193,355	422,407	0	0	770,948	0

How do I get it?

- Federally-subsidized crop insurance products managed by RMA such as LGM-Dairy are sold by private crop insurance agents.

- The RMA website has a link to an Agent Locator tool on their home page.



QUESTIONS?

University of California
Agriculture and Natural Resources

Thank You!

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