



## **LGM-Dairy: Livestock Gross Margin Insurance for Dairy, a New Risk Management Tool Available for Wisconsin Dairy Producers**

Mayuri Valvekar, Victor E. Cabrera, and Brian W. Gould<sup>1</sup>

### **1. INTRODUCTION**

With uncertain and volatile milk prices and feed costs, there is a greater need for effective risk management strategies that can prevent producer's potential losses due to prices and cost risks. Some risk management tools like futures and option trading can protect producers against low milk prices. However, they do not protect them against high production costs. Furthermore, a better option is a coverage based on the gross margins rather than milk prices or the feed costs alone. The Livestock Gross Margin Insurance for Dairy Cattle (LGM-Dairy) offers a better alternative as a risk management strategy. The LGM-Dairy is a bundled option covering the price of milk and the feed costs, which ultimately protects against the declines in the gross margins (milk prices less the feed costs).

This document gives a basic understanding about LGM-Dairy. For more detailed and comprehensive information on LGM- Dairy, please follow the links:

[http://future.aae.wisc.edu/lgm\\_dairy.html](http://future.aae.wisc.edu/lgm_dairy.html)

<http://www.rma.usda.gov/livestock>

### **2. WHAT IS LIVESTOCK GROSS MARGIN FOR DAIRY CATTLE (LGM-Dairy)?**

- It is a federally reinsured, dairy insurance program run through the U.S. crop insurance program.
- It was approved by the U.S. Department of Agriculture Risk Management Agency in July 2007 and is available since August 2008.
- It provides protection against unexpected declines in gross margin (market value of milk minus feed costs) on target quantity of market milk.
- The indemnity on an 11-month insurance period is the positive difference between the Gross Margin Guarantee (GMG) and the Actual Gross Margin (AGM).
- No producer premium subsidy is available for this insurance program. Most of the administrative and policy subsidies are paid by the federal government. However, a 3 % reserve load is charged to the producer.

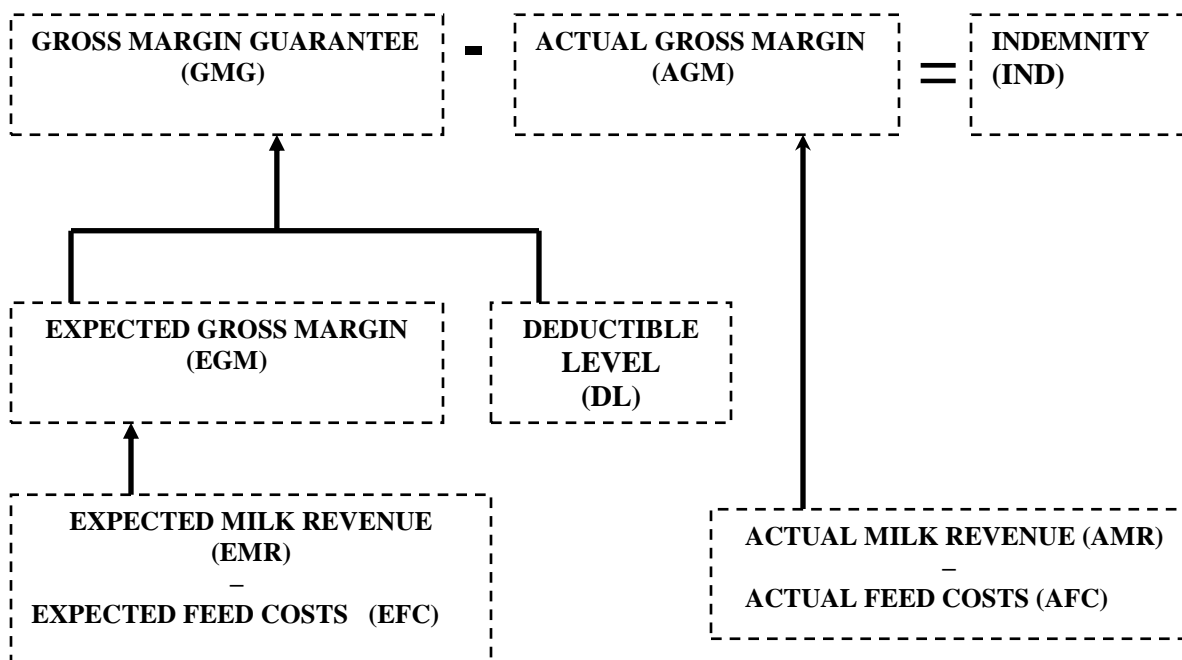
---

<sup>1</sup> Mayuri Valvekar is a Special Student at the University of Wisconsin Madison, Victor E. Cabrera is an Assistant Professor and Extension dairy management specialist in the Department of Dairy Science, and Brian W. Gould is Associate Professor in the Department of Agricultural and Applied Economics, University of Wisconsin-Madison



### 3. LGM-DAIRY: HOW DOES IT WORK?

- LGM-Dairy works as a bundle insurance option that pays the positive difference between the gross margin guarantee (GMG) and the actual gross margin (AGM), in the form of indemnity (Fig. 1).
- It uses the futures prices and not the local market prices for corn, soybean meal and milk in addition to state and month adjustments (basis) for corn and milk to determine the Expected Gross Margin (EGM) and the Actual Gross Margin (AGM).



**Figure 1: Simplified diagram of the livestock gross margin for dairy (LGM-Dairy)**

### 4. EXPLANATION OF TERMS:

- **Gross Margin Guarantee (GMG):** The Gross Margin Guarantee for each coverage period is calculated by subtracting a deductible amount from the Expected Total Gross Margin for the applicable insurance period.
- **Expected Gross Margin (EMG):** The Expected Gross Margin per month is the Approved Target Marketing times the Expected Milk Price less the Expected Feed Costs times the target feed meal approved for that month. In other words, it is the difference between the Expected Milk Revenue and Expected Feed Costs.



- **Deductible level:** The Deductible is the portion of the Expected Gross Margin that the producer elects not to insure. Allowable Deductible amounts range from 0 to \$1.50 per hundredweight of milk in \$0.10 increments.
- **Target Marketing and Expected Feed Quantity:**
  - Producers need to determine the quantity of milk to be sold in addition to the feed quantity in terms of corn (corn equivalents) and protein meal (protein meal equivalents) to be fed for each month during the insurance period.
  - Producers can insure any amount of milk for which they have adequate dairy cattle to produce, designating a monthly maximum “Approved Target Marketing” total on the policy application.
  - Total milk to be insured must be certified by the producer and is subject to inspection by the insurance company.
  - Target marketing must be submitted for each month. Failing to submit a target marketing Report by the sales closing date for the applicable insurance period means the amount of milk covered for that period is zero.
- **Expected Milk Revenue:** The Expected Milk Revenue for any month is the Expected Milk Price plus the state milk basis times the Approved Target Milk for that month.
- **Expected Milk Price:** The Expected Milk Price is the simple average of the Chicago Mercantile Exchange (CME) Class III milk contract final daily settlement price during the price discovery period.
- **Expected Feed Costs:** The Expected Feed Costs contains both the Expected Corn Costs and the Expected Soybean Meal Costs.
- **Expected Corn Cost:** The Expected Corn Cost for each month equals the target corn equivalents to be fed times the Expected Corn Price for that month.
- **Expected Soybean Meal Cost:** The Expected Soybean Meal Cost is the target protein meal equivalent to be fed times the Expected Soybean Meal Price for that month.
- **Expected Corn Price:** For months in which a Chicago Board of Trade (CBOT) corn contract expires, the simple average of the settlement prices for the CBOT corn futures contract for the month during the expected price measurement period plus the state-specific corn basis for the month. For other months, the state-specific corn basis for the



month plus the weighted average of the immediately surrounding months' simple average of the daily settlement prices during the expected price measurement period.

- **Expected Soybean Meal Price:** For months in which a Chicago Board of Trade (CBOT) soybean meal contract expires, the expected soybean meal price is the simple average of the daily settlement prices of the CBOT soybean meal futures contract for the month during the expected price measurement period. For other months, the expected soybean meal price is the weighted average of the immediately surrounding months' simple average of the daily settlement prices during the expected price measurement period. No basis adjustment is made to soybean meal prices.
- **Actual Gross Margin:** The Actual Gross Margin per month is the Actual Milk Revenue less the Actual Feed Costs.
- **Actual Milk Revenue:** The Actual Milk Revenue is the simple average of the daily settlement prices of the Chicago Mercantile Exchange (CME) Class III milk futures contract for the month during the actual price measurement period plus the state-specific milk basis times the approved target milk for the month.
- **Actual Feed Costs:** The Actual Feed Costs for each month is the target corn to be fed times the Actual Corn Price for that month, plus the target soybean meal to be fed times the Actual Soybean Meal Price for that month.
- **Actual Corn Price:** For months in which a CBOT corn contract expires, the actual corn price is the simple average of the daily settlement prices for the CBOT corn futures contract for the month plus the state-specific corn basis for the month. For other months, the state-specific corn basis for the month plus the weighted average of the immediately surrounding months' simple average of the daily settlement prices.
- **Actual Soybean Meal Price:** For months in which a CBOT soybean meal contract expires, the actual soybean meal price is the simple average of the daily settlement prices for the CBOT soybean meal contract for the month. For other months, the actual soybean meal price is the weighted average of actual soybean meal prices in the immediately surrounding months.
- **Indemnity:**
  - If the Gross Margin Guarantee, estimated prior to the Insurance period, is higher than the Actual Gross Margin realized after the insurance period, then the amount by which the GMG exceeds the AGM is the Indemnity. The Indemnity is calculated by subtracting the total AGM from the GMG (Sum total across all target marketings in the Insurance period).



- Indemnities are not paid until the end of the 11 month Insurance period. In the case of a payable loss on insured milk, producers will receive a notice of probable loss approximately 10 days after all actual gross margins applicable for the insurance period are released by USDA's Risk Management Agency. Producers must submit a marketing report and sales receipts showing evidence of actual marketing within 15 days of receipt of the notice of probable loss.
- In the event that the total of actual marketings are less than 75% of the total targeted marketings for the insurance period, indemnities will be reduced by the percentage by which the total of actual marketings for the insurance period fell below the total of targeted marketings for the period.
- **Premium:**
  - The Premiums depend on the amount of coverage selected; producer's marketing plan, futures prices and the amount of price volatility.
  - Premiums are set so that the producer gets out what he puts in over the long haul. In times of high price volatility, premiums are high.
  - The premium for the initial insurance period is due with the application. In subsequent insurance periods, if the premium is not paid in full by the applicable sales closing date, the target marketings will be reduced to zero for each month of the insurance period and no coverage will be offered.
  - The US Department of Agriculture Risk Management Agency (USDA-RMA) has a web-tool to calculate LGM-Dairy premiums. This can be accessed at: <http://www.rma.usda.gov/tools/premcalc.html>.

## **5. SALES PERIOD:**

- LGM for Dairy Cattle will be sold on the third to the last business day of each month. The Sales period begins as soon as the Risk Management Agency (RMA) validates the data submitted by the developer after the close of markets on the last day of the price discovery period.
- Sales period ends at 9:00 AM, the following day.



**6. INSURANCE PERIOD:**

- There are twelve overlapping Insurance Periods in a year.
- Each insurance period comprises of eleven months.
- Coverage begins one full month after the sales closing date. For example, if a producer purchases a policy on the sales closing date of August, no target marketing will be insurable until March 1 (Fig. 2)

Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
<i>Policy purchased</i>	<i>No coverage</i>	←————— <i>INSURANCE COVERAGE</i> —————→									

**Figure 2: Livestock Gross Margin for Dairy (LGM-Dairy) Insurance Periods. E.g., policy purchased on August Sales Closing Date.**

- Producers can purchase one policy to cover the entire insurance period or obtain multiple policies with sales closing dates in different months. So within an 11 month period, a producer can insure any month or all. Next calendar month, he/she can buy another policy and still insure the months that were not insured previously. E.g., With one policy (purchase in January), a producer can insure the margin from March to December (for all or any of the months). Alternatively, he/she can also purchase coverage for each month separately, like April coverage in February or before.

**7. WHAT LGM-DAIRY DOES NOT INSURE AGAINST?**

LGM-Dairy does not insure against the following:

- Dairy Cattle death loss or poor performance.
- Unexpected decrease in milk production
- Unexpected increase in feed use.

**8. ELIGIBILITY AND AVAILABILITY OF THE LGM-DAIRY:**

- LGM-Dairy is available in the following 32 states for the year 2008:  
Arizona, Colorado, Connecticut, Delaware, Illinois, Indiana, Iowa, Kansas, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New York, North Dakota, Ohio, Oklahoma,



Pennsylvania, Rhode Island, South Dakota, Texas, Utah, Vermont, West Virginia, Wisconsin, and Wyoming (See Figure 3).



**Figure 3: States offering LGM-Dairy (2008)**

- Only Milk sold for commercial or private sale, intended for final human consumption, in the above-mentioned states are eligible for coverage under the policy.
- LGM-Dairy is available for purchase from any authorized crop insurance agent licensed to sell it. A list of authorized agents is available through the Agent Locator Tool found on the USDA-RMA website <http://www3.rma.usda.gov/apps/agents>.

## **9. ADVANTAGES OVER FUTURES AND OPTIONS TRADING:**

- **Convenience:** Producers can sign up for LGM-Dairy Insurance 12 times per year and insure all their milk production they expect to market over a rolling 11-month insurance period.
- **Customization:** The LGM-Dairy policy offers more flexibility and can be tailored to any size farm. Futures/options cover fixed amounts of commodities, and those amounts may be too large to be used in the risk management portfolio of some smaller farms.
- **Bundled Option:** While futures/options trading reduces the price risks in milk and feed costs respectively, LGM-Dairy is similar to a bundled option of futures or option contracts, insuring against the losses in the Gross Margins taking into consideration both the price risks in milk and feed costs simultaneously.
- **No Brokerage Account:** Producers using LGM-Dairy Insurance do not take any positions on futures and options. Therefore they do not require a brokerage account.



- **No complex information:** Futures and options trading require a thorough understanding and complex information of the trading markets. As an insurance product, LGM-Dairy may be useful to producers who may not be comfortable trading in the futures or options markets.
- **Guaranteed Pricing:** Once LGM-Dairy is priced for a given day, the prices are guaranteed and will not change for that day. While the futures and options prices are negotiated in the market, LGM prices are determined according to the pricing and basis regulations established by the Risk Management Agency (RMA).
- **Availability after trading hours:** LGM-Dairy is available after normal market trading hours, allowing producers to purchase price coverage at times previously unavailable.

## 10. LIMITATIONS:

- LGM-Dairy has limited underwriting capacity, and will be distributed on a first-come, first-served basis. Policies will not be sold after capacity is full.
- LGM-Dairy will not be available for sale if one of the input commodity's futures prices (corn or soybean meal) increases by their respective limits for two consecutive days.
- Sales can be suspended if a news report, announcement, or other event occurs during or after trading hours that is believed by the Secretary of Agriculture or Risk Management Agency staff to significantly change market conditions from those on which LGM-Dairy insurance for that day is rated.

## 11. SUMMARY:

Livestock Gross Margin for Dairy (LGM-Dairy) is a unique price risk management tool that offers an opportunity to producers to establish a minimum gross margin. If the milk prices drop or the feed costs rise, an indemnity is paid to the producers to offset the declining margins. Because of the flexibility and simplicity of use, LGM-Dairy policy offers an attractive hedging tool that can be implemented as a part of risk management program by the producers.