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# Revenue Insurance for Livestock Producers

*Ag Decision Maker*

File B1-50

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**H**og and cattle producers face high financial risks from volatile livestock markets. The Risk Management Agency (RMA) of the U.S. Department of Agriculture has approved two revenue insurance products to help livestock producers manage this risk:

- Livestock Gross Margin
- Livestock Risk Protection

Both products must be purchased through an authorized insurance agent. A list of such agents is available at: <http://www3.rma.usda.gov/apps/agents/>.

## Livestock Gross Margin (LGM)

Livestock Gross Margin insurance is available for cattle, milk, and swine producers in all counties in Iowa. More information about LGM for cattle feeders can be found in *AgDM Information File B1-51, Livestock Gross Margin: A Risk Management Tool for Cattle Feeders*.

The revenue that can be insured under LGM is actually the return over feed costs. The guarantee for hogs is based on projections for three risky variables: the price of market hogs, the price of corn, and the price of soybean meal. These are the most important determinants of gross margin that are beyond the producer's control.

Several steps are involved in determining the guarantee and possible indemnity payments.

1. Classify the hogs to be insured as farrow-to-finish, finishing feeder pigs, or finishing SEW pigs. Each class of hogs uses different formulas to estimate feed costs per pig marketed.
2. Project the number of market hogs that will be sold each month, up to six months in advance. This value is used to calculate the total dollar guarantee and the premium. If the producer estimates too high or too low, it simply means that the actual production is over or under insured. The upper limit is 15,000 head of all

types of hogs marketed in each half of the year, per operation.

3. Check the expected gross margin per head values for each marketing month on the RMA web site at: [www.rma.usda.gov/tools/](http://www.rma.usda.gov/tools/) under Livestock Reports. These values are calculated using the futures prices for lean hogs, corn and soybean meal during the last 3 days of the applicable contract months, for a fixed level of feed consumption.
4. Multiply the expected gross margin per head by the number of head projected to be marketed in each month to arrive at the total expected gross margin.
5. The producer can elect to guarantee 80, 85, 90, 95 or 100 percent of the total gross margin. Naturally, a higher level of coverage will require a higher premium. Premiums are due when protection is established. Each marketing month is a separate coverage decision.
6. When the marketing month is over, the actual gross margin will be calculated in the same manner as the guarantee. The only difference is that actual closing futures prices are used, that is, the prices for the same contracts used to set the guarantee are averaged over the last three days they are traded.
7. If the actual gross margin turns out to be less than the guaranteed value, the producer will receive a payment for the difference. If not, no payment is made.

LGM insurance is sold only on the second to last business day of each month. The projected gross margins are posted soon after the close of markets on that day. Coverage can be purchased from that time until 9 a.m. central time on the following day. In case of unusual market circumstances, RMA reserves the right to not post the projected gross margins, in which case no coverage is available for

that day.

Coverage can be purchased each month for hogs to be marketed from two to five months later. For example, on January 31 coverage can be purchased for hogs to be sold in March, April, May, June or July.

**Example of Livestock Gross Margin Insurance**

1. Operation is farrow-to-finish.
2. Projected sales are 300 head for November.
3. Projected gross margin per pig is \$64.17 for farrow-to-finish hogs sold in November (from RMA web site).
4. For 300 head, the total projected gross margin is \$19,251.
5. If the producer chooses 95 percent coverage (5 percent deductible), the guarantee is .95 x \$19,251, or \$18,288.
6. In December the actual gross margin is calculated as \$54.28 per head, or \$16,284 for 300 head.
7. Since the actual gross margin is less than the guaranteed gross margin, the producer is paid the difference of \$19,251 - \$16,284 = \$2,967.

Livestock Risk Protection insurance is available for finished hogs, lambs, feeder cattle, and fed cattle, in all major producing states. LRP protects against declining livestock prices, only. Once an LRP application is approved, specific groups of hogs, lambs, or cattle can be insured. The owner selects the time period and the level of protection desired. Premiums are subsidized 13 percent by the USDA, and are due when the guarantee is established.

Coverage levels between 70 and 100 percent (up to 95 percent for lambs) of the Chicago Mercantile Exchange (CME) futures contract prices can be guaranteed into the future for up to 26 weeks for hogs, 39 weeks for lambs, and 52 weeks for cattle. The quantity insured is equal to the projected selling weight (carcass weight for hogs, live weight for lambs and cattle), times the number of head to sell, times the percent ownership interest. Projected selling prices for feeder cattle are adjusted for the type and sex of the cattle, and the projected selling weight.

If the average of the relevant cash index price on the final two days of the coverage period is below the guaranteed price level, the producer receives a payment for the difference, for the quantity insured. If not, no payment is received.

**Livestock Risk Protection (LRP)**

**Table 1. Example of livestock revenue protection, swine**

Coverage Length*	Expected Price	Coverage Price*	Coverage Level - %	Cost per cwt.
13 weeks	\$65.53	\$62.03	94.66%	\$2.847
13 weeks	\$65.53	\$56.03	85.50%	\$1.112
21 weeks	\$60.56	\$56.06	92.57%	\$2.998
21 weeks	\$60.56	\$52.06	85.96%	\$1.746

\*Other coverage lengths and prices are available.

Projected sales are for 100 head marketed in 21 weeks at a carcass weight of 1.85 cwt., with 100% ownership. A 92.57% guarantee is chosen.

Insured value = 100 hd. x \$56.06 x 1.85 cwt = \$10,371

Premium = 100 hd. x \$2.998 x 1.85 cwt. x 87% = \$483

The final price at the end of the 21-week period is \$50.

Actual revenue = 100 hd. x \$50 x 1.85 cwt. = \$9,250

Indemnity payment = \$10,371 - \$9,250 = \$1,121

The price guarantees that are available and the premiums change daily, and can be viewed on the RMA web site at: [www.rma.usda.gov/tools/](http://www.rma.usda.gov/tools/), under livestock reports. New guarantees are posted after the CME markets close each day, and are available until 9 a.m. central time the next day. This ensures that the guarantees available reflect current market conditions. To analyze the risk protection available under LRP insurance, see Decision Tool B1-50, "Livestock Revenue Protection Analyzer."

### Who can benefit from revenue insurance?

Producers who depend on the daily cash market price or a formula based on it to sell their hogs or cattle can insure a minimum revenue stream. Unlike some marketing contracts, neither LGM nor LRP ties the producer to a specific packer.

Smaller producers who do not have enough volume to practically utilize futures contracts or options can accomplish similar risk protection with LGM or LRP. Policies can be tailored to any scale of production. Larger scale producers can buy put options on lean hog contracts and call options on corn and soybean meal contracts, but there are minimum contracts sizes to deal with. LRP and LGM offer a more straightforward transaction than managing multiple futures contracts, and do not require margin money deposits.

Hog producers who purchase all or most of their feed will achieve the most risk reduction with LGM. Farmers who produce their own corn and soybeans have less feed cost risk (prices for soybean meal and soybeans are closely correlated), but can still benefit from reducing risk from declining livestock prices.

LGM protection leaves producers exposed to futures market basis risk, i.e. their local cash prices may not track exactly with the CME prices. LRP contracts are settled against cash price indices, but these may

still differ from local packer prices. In addition, the producers' actual selling weights and dates of sale may vary from the guarantees.

Livestock revenue insurance policies will not create profits in the market on their own, since coverage levels are tied to futures contract prices that are currently available. However, they will protect against the possibility that actual cash prices may turn out to be even lower than expected. They provide a safety net against a drastic decline in prices such as could happen when processing capacity is insufficient for the supply of livestock going to market. They can also be used when market price prospects are relatively good, to protect profits from unexpected downturns in price.

For more information, see *AgDM Information Files B1-51, Livestock Gross Margin: A Risk Management Tool for Cattle Feeders* and *B2-52 Risk Management Tool for Sheep Producers*.

**Table 2. Comparison of livestock risk protection policies**

	Swine	Feeder Cattle	Fed Cattle	Lambs
Coverage periods	13, 17, 21, 26 weeks	13, 17, 21, 26, 30, 34, 39, 43, 47, 52 weeks	Same as feeder cattle	13, 26, 39 weeks
Selling weights	1.5 to 2.25 cwt. (carcass)	Under 6.0 cwt., or 6.0 to 9.0 cwt. (live)	12 to 14 cwt.	50 to 150 lbs.
Maximum per endorsement	10,000 head	1,000 head	2,000 head	7,000 head
Maximum per year	32,000 head	2,000 head	4,000 head	28,000 head
Settlement price	CME live hog index	CME feeder cattle index	USDA 5-area direct slaughter cattle price	Economic model used

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