

# LIVESTOCK RISK PROTECTION (LRP) INSURANCE: Provisions & Guidelines

Prepared By: Gary A. Hachfeld, Regional Extension Educator, Ag Business Management  
Mark Schull, Crop Insurance Services, Mankato, MN.  
Kim Lee, Crop Insurance Services, Mankato, MN.  
Data Source: Peter Griffin, Ph.D., Applied Analysis Group, Inc.

11/2003

## INTRODUCTION:

Livestock Risk Protection (LRP) insurance for swine was first introduced in Iowa on July 2002. The product was tested there and has now been expanded and approved in all counties in Minnesota for 2004. Coverage can be written as of November 17, 2003.

LRP protects swine producers from a drop in price below a predetermined coverage price. The insurance policy does not protect against other perils such as mortality, disease, or other causes of death.

LRP for fed and feeder cattle has also been developed but is not currently available in Minnesota. Livestock Gross Margin (LGM) insurance was also tested and is a bit different than LRP. LGM insurance is not available in Minnesota at this time.

In the following information, LRP is outlined including producer qualifications, provisions, guidelines, examples and financial comparisons.

## PRODUCER QUALIFICATION:

LRP insurance is for swine producers who own and intend to market, for slaughter, their hogs by the end of the insurance period. Producers can insure only what they own. They can not insure another entities share of animals.

To qualify, a swine producer must first file an application for LRP insurance through their insurance agent. The agent must be certified to write the LRP insurance by having attended a training session. The application filing process **does not** establish any right to coverage. The application must first be approved by the Risk Management Agency (RMA). Approval simply establishes the ability to request coverage, if sufficient amounts are available from RMA. Premium payment is necessary to initiate coverage.

After the application has been accepted, the producer must file a Specific Coverage Endorsement (SCE) to establish actual insurance coverage. The SEC establishes the level of coverage selected, the number of head, the expected ending value, and the length of the insurance contract. These provisions will be explained later in this information piece.

If producers think that at some time in the future they may request coverage, they should apply for coverage approval as soon as possible.

## INSURANCE PROVISIONS:

### Swine Target Weight:

The target weight of the hogs should be between 1.85 cwt and 2.50 cwt per head. The target weight is the lean weight per head and is calculated as follows:

Lean weight = total weight per head X 0.74

### Insurance Period:

LRP insurance for swine is offered for 13, 17, 21, and 26 week periods. The time period closest to the time the hogs will be marketed is the time period that should be selected.

### Annual Policy Limits:

The annual limitation on the number of head of hogs covered during the crop year is 32,000 head. For the insured entity, the number of insured hogs will be totaled and can not exceed 32,000 head. If an entity (individual) owns their own hogs but then has an interest in another entity (partnership), the total number of hogs insured can not exceed the 32,000 level.

**Example:**

Bogg Farms has 20,000 head of hogs insured under LRP. Pete Bogg has a 90 percent interest in Bogg Farms (20,000 hogs X 90% = 18,000 head). Pete also has hogs under his own name and wants to insure 10,000 head of that group. The total amount of hogs Pete wants to insure is 28,000 head which is below the 32,000 head annual limit.

There is also a limitation of 10,000 head of hogs that can be insured under any one Specific Coverage Endorsement.

**Coverage Levels:**

Coverage levels for LRP insurance contracts range from 75 – 95% of the expected ending value.

**Insurance Subsidy Rate:**

As with other FCIC insurance offerings, LRP has a premium subsidy included. The premium subsidy rate at all levels of coverage is 13%. The 13% premium subsidy is a percentage amount the federal government is going to pay on each LRP policy.

**LRP INSURANCE PRICES:**

LRP insurance coverage prices and premiums are based on the Chicago Mercantile Exchange (CME) lean hog futures price. These rates change daily. Coverage can be established on any day except when either of the following occur:

- 1) CME futures are not trading OR
- 2) CME lean hog futures trade the market limit

If coverage can not be established due to futures not trading, coverage can be established using the prior day's price and premium rates.

**Expected Ending Value:**

This value is used in the premium calculation. It is determined by using the Chicago Mercantile Exchange (CME) lean hog futures contract price for the time period specified by the SCE and for calculating the value to the expiration date of the SCE. This rate changes daily. This value can be found by going to the following Internet web site:  
[http://www3.rma.usda.gov/apps/livestock\\_reports](http://www3.rma.usda.gov/apps/livestock_reports)

**Actual Ending Value (AEV):**

This value is a weighted average price of lean hogs. The days used in the weighted average price calculation is the end date and one day prior to the end date – it is two day average of the Agricultural Marketing Service (AMS) 201 report. The value is a dollar per cwt value. It is the same calculation as the CME Lean Hog Index.

The AMS report is made up of two data series categories. They are the *Negotiated* and the *Swine or Pork Market Formula (SPMF)* categories. The *Negotiated* data series is for sales outside of packer contracts. The *SPMF* data series is for sales within packer contracts. They are essentially the slaughter values for number of head and price for the time period mentioned earlier – a two day period. Both series are from a number of cash trades at several markets. However, they are weighted more heavily toward Iowa and southern Minnesota because of the volume of sales in those areas. The AMS data can be found by going to the following Internet web site:  
[http://www.ams.usda.gov/mnreports/lm\\_hg202.txt](http://www.ams.usda.gov/mnreports/lm_hg202.txt)

Again, the AMS calculation is the same as the CME Lean Hog Index calculation. To find the CME value you can go to the CME Internet web site and locate the values that correspond to your contract. The Internet web site address is as follows:  
[http://www.cme.com/dta/hist/cash\\_settled\\_commodity\\_prices.html?type=Lean%20Hogs](http://www.cme.com/dta/hist/cash_settled_commodity_prices.html?type=Lean%20Hogs)

Once there, select the end date for your contract. The corresponding value is the Actual Ending Value for your contract.

**LRP INSURANCE CALCULATIONS:****Premium Calculation:**

The premium calculation is based on daily actuarial documents and the values change daily. There are two main components to the LRP premium: 1) the coverage price and 2) the premium rate.

Producers need to determine the approximate date the hogs are expected to be ready for market and count the number of weeks until that date.

Next, you need to select an insurance period of 13, 17,

21, or 26 weeks and the percent coverage (75% or 95%). The insurance period should cover most of the growth period of the hogs and should not end more than 30 days before the time the hogs will be marketed.

Your insurance agent will select a corresponding Ending Date and Coverage Price based on the policy length.

You will then need to determine the Target Weight of the hogs by multiplying the expected market weight in cwt by the Lean Weight Conversion Factor of .74. The Target Weight should fall in a range of 1.50 and 2.50 cwt. Next, determine the number of head to be

marketed and your ownership share in the hogs. Once these items have been determined, there are four calculations to complete that will determine the premium cost for the policy. Let's look at an example.

**Example:**

Assume Jim & Jane Herder have 1,000 head of market hogs to sell at a market weight of 250 pounds or 2.50 cwt. The Target Weight calculated for the hogs is 1.85 cwt (2.500 X .74). The 1,000 head X 1.85 cwt equals a total of 1,850 cwt.

The Expected Ending Value is \$55.00 per cwt. The Herders then select the Coverage Price that corresponds to the 95% coverage level which is \$52.25 per cwt. The Herders own 100% of the hogs.

To determine the Insured Value, multiply the number of head times the Target Weight times the Coverage Price times the Insured Share. For the Herder example, the first calculation is as follows:

$$1,000 \times 1.85 \times \$52.25 \times 1.00 = \underline{\$96,663 \text{ Ins. Value}}$$

The second calculation involves multiplying the Insured Value by the insurance rate to determine the Total Rounded Premium. The rules state that the total premium figure should be rounded off to the nearest whole dollar amount. The rate for this example policy is 2.8708%. The example calculation is as follows:

$$\$96,663 \times .028708 = \underline{\$2,775 \text{ Total Rounded Premium}}$$

As mentioned previously, there is a 13% Subsidy of the LRP insurance. The third calculation is then to determine the amount of the Subsidy. Again, round

the number to the nearest whole dollar amount. The calculation is as follows:

$$\$2,775 \text{ Total Premium} \times .130 = \underline{\$361 \text{ Subsidy}}$$

The fourth calculation is to then determine the Producer Premium. Simply subtract the Rounded Subsidy from the Total Rounded Premium. The calculation looks like this:

$$\$2,775 - \$361 = \underline{\$2,414 \text{ Total Producer Premium}}$$

**Indemnity Calculation:**

For LRP insurance, the indemnity payment is based upon the difference between Coverage Price and the Actual Ending Value on the last day the coverage is in effect.

When the Actual Ending Value is less than the Coverage Price, there is an indemnity payment made. The insured produce must complete a claim form within 60 days following the policy end date in order to receive an indemnity payment.

**Note:** indemnity payments **are not** based upon the actual price received for the hogs covered by the LRP policy!

**Example:**

Using the Herder example, there are 1,000 hogs for market. The Herders own 100% of them and the Target Weight is 1.85 cwt. The selected Coverage Price is \$52.25 per cwt at the 95% Coverage Level.

In the example, assume the Actual Ending Value is \$44.80 per cwt. Because the \$44.80 AEV is less than the Coverage Price, there will be an indemnity payment to the Herders. The calculation is as follows:

$$1,000 \text{ head} \times 1.85 \text{ Target Weight} = 1,850 \text{ cwt}$$

$$\$52.25 \text{ Coverage Pr.} - \$44.80 \text{ AEV} = \$7.45 \text{ per cwt}$$

$$1,850 \text{ cwt} \times \$7.45 \text{ per cwt} = \$13,783$$

$$\$13,783 \times 1.00 \text{ Share} = \underline{\$13,783 \text{ Indemnity Payment}}$$

**LRP VS FUTURES & OPTIONS:**

One consideration in the decision to purchase LRP or not is the issue of risk protection from LRP versus the

purchase of a futures contract or options contract in place of the LRP. Following is a table created by Peter Griffin, Ph.D., Applied Analytics Group, Inc. which compares the choices.

	<b>Livestock Risk Protection</b>	<b>Futures Contract</b>	<b>Options On Futures</b>
<b>Protects Against Downside Risk</b>	Yes	Yes	Yes
<b>Upside Price Gain Potential Is . . .</b>	Unlimited	Limited	Unlimited
<b>Coverage Price Is Based On . . .</b>	Aggregated Cash Price	Futures Price	Futures Price
<b>Basis Risk Is . . .</b>	Covered (in part)	Not Covered	Not Covered
<b>Cost Of Coverage Is . . .</b>	Set By Daily Price, Guaranteed	Not Set: market order or limit order for fill	Not Set: market order or limit order for fill
<b>At Expiration, There Is A(n) . . .</b>	Indemnity Paid, if due	Need to Exit Contract: or for fed cattle, deliver	Need to Exit Option or Exercise Option
<b>The Contract Is . .</b>	An Insurance Policy	A Derivative Contract	A Derivative Contract
<b>Acceptability By Lenders Is . . .</b>	Universal	Limited	Limited

### **LRP PREMIUM VS CME OPTION COST:**

Another consideration is the cost of the LRP premium versus a CME put option as price protection. Following is a table created by Peter Griffin, PH.D., Applied Analytics Group, Inc. In the table, he makes a comparison between the cost of the LRP premium and the cost of a put option taken at the same time as the LRP insurance. This is an example only and the contract dates, LRP costs and the options costs will be different for you, depending upon the date of initiation.

As you can see in this example, the cost of the LRP premium is much less than the cost of the put option. This may not always be the case but it does deserve consideration when making your decision regarding the purchase Of LRP insurance for your swine operation and marketing decisions.

<b>Sale Date</b>	<b>End Date</b>	<b>Policy Weeks</b>	<b>Policy Days</b>	<b>Expected Ending Value</b>	<b>Coverage Price</b>	<b>Coverage Level</b>	<b>Rate</b>	<b>LRP Cost Per Cwt</b>
9/26/03	12/26/03	13	91	\$57.10	\$52.10	91.24%	3.140%	\$1.636
Option Contract	Option Strike	Option Cost to Rate	Change in Futures	Options on Sales Date	Bid/Ask Spread	Fees -\$50 Per Contract	<b>Total Option Cost</b>	<b>LRP Cost After 13% Subsidy</b>
Feb. 04	54	\$1.750	\$ (0.900)	\$1.950	\$0.100	\$0.125	<b>\$2.175</b>	<b>\$1.423</b>

### **SUMMARY:**

LRP insurance is a risk management tool for swine producers. It is much like any other federal commodity insurance such as crop insurance.

LRP has some benefits to producers. Those benefits include:

- Guaranteed price (no bid/ask spread)

- No transaction cost/commissions to producer
- Basis risk coverage
- Flexibility in the number of head covered (could cover 1 hog)
- LRP is an insurance policy, not a derivative

Producer qualification criteria must be met in order to be eligible for LRP. Producers must file an application for coverage which must be approved before actual coverage can be initiated.

Producers should be familiar with all the LRP provisions such as hog target weight, insurance period, policy limits, coverage levels, and subsidy rates.

Producers should also be familiar with the Expected Ending Value and Actual Ending Value as well as the premium, and indemnity calculation procedures.

As with any insurance product, check with your insurance agent for more details and information, specific to your situation.

**Caution: This publication is offered as educational information. It does not offer legal or insurance advice. If you have questions on this information, contact your insurance agent.**

*The University of Minnesota, including the Minnesota Extension Service, is an equal opportunity educator and employer.*