Livestock Risk Protection-Guarantee
Price Risk Management for Cow-Calf Producers: Part 5

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Cow-calf producers use various strategies to manage price risk, including futures and options. Livestock Risk Protection (LRP) is a type of livestock price insurance that typically costs less than a put option. The focus of this article is the LRP guarantee (also referred to as "liabilities"), which is the level of revenue (or calf income) that is guaranteed by LRP.

The holder of any insurance product receives compensation for damage (i.e. your roof blows off) or other losses, which is called an indemnity. LRP pays out an indemnity when the actual market price is less than the *producer-selected* coverage price. A LRP indemnity effectively covers the revenue loss that can be attributed to this price decline. In the example below, we show the LRP guarantee for a producer who is calving in April and plans to sell 40 calves in October. If the producer purchased an LRP endorsement for 'unborn steers and heifers' on March 1, they would have selected a coverage price in the range of $172 to $191 per cwt, with producer premiums ranging from $2.46 to $7.28 per cwt. The producer must also select a target weight that, in addition to the coverage price, determines the LRP guarantee: coverage price times the target weight. For this example, we assume a target weight of 550 pounds.

Table 1. LRP guarantee and premium for different coverage prices

	$191.09 (100% coverage level)	$182.69 (96% coverage level)	$172.19 (90% coverage level)
Guarantee per head	$1,051.00	$1,005.00	$947.00
Producer premium per head	$40.00	$26.00	$14.00
Total Guarantee	$42,040.00	$40,192.00	$37,882.00
Total producer premium	$1,602.00	$1,043.00	$542.00

Note: Premiums are estimates only for March 1, 2022; coverage prices and premiums change on a daily basis based on market fluctuations. The LRP expected price for October 2022 feeders (unborn steers and heifers) is $191.30/cwt (the 100% coverage level noted above is based on rounding of the actual 99.89% coverage level).

LRP indemnities are the difference between the actual and coverage price times the producer-selected target weight. Target weights must be within a specific range that is based on the specific type of LRP feeder cattle endorsement selected. For example, 'unborn steers and heifers' must have a target weight less than 600 lbs. The indemnity makes up the difference between the guarantee and actual revenue. In other words, the indemnity is designed to bring the producer's revenue back up to the guaranteed level when prices drop. Table 2 shows how this works in our example.

Table 2. Indemnity and guarantee when actual prices are $175 and coverage price is $191.09

Difference between actual and coverage price	$191.09-$175 = $16.09
Target weight (cwt)	5.5
Indemnity per head	5.5*$16.09 = $88.50
Number of head	40
Total indemnity	40X $88.50 = $3539.80
Actual revenue (assumes target weight is achieved)	$175 X 5.5 X 40 = $38,500
Guarantee (Indemnity + actual revenue)	$3539.80 + 38,500 = $42,040

Table 2 shows how indemnities can bring a producer back to their LRP guarantee when prices are lower than the coverage price. Without LRP, actual revenue is $38,500, and with LRP, actual revenue is at the guaranteed level $42,040.[1] This example assumes in the actual revenue calculation that feeders reach their target weight of 550 pounds. In reality, weight gain might be lower than expected or there could be high mortality rates. Producers could also experience larger drops in their local or cash price than in the futures market (on which LRP prices are based).[2]

Why does a producer need to consider the guarantee, in addition to the coverage price? First, understanding how the guarantee is calculated can help a producer understand sources of risk that LRP does not cover. In addition to the examples in the previous paragraph, prices for feeders that are above or below the target weight might be different from LRP actual prices, such as price divergence between 600 lb and 800 lb feeders. Second, knowing the value of the guarantee can help a producer better understand the amount of income at risk from price declines and the potential value of LRP to their operation. Third, estimates of expected revenue based on the LRP guarantee might be valuable for a lender, potentially leading to additional credit being extended or more favorable terms.

The LRP guarantee is a measure of the income that LRP can protect for a cow-calf operation. In our example, there is a large difference between premiums at the lowest and highest coverage levels, which reflects the frequency and magnitude of indemnities at different coverage levels. In the next article in this series, we will discuss the historic frequency and magnitude of indemnities that LRP would have provided for spring-born calves.

This article is the fifth in an 9-part series on price risk management for cow-calf producers. The first part of the series focused on price risk and different management alternatives. The later part of the series focuses on Livestock Risk Protection, an insurance product available to Kansas producers, that pays out when market prices for feeder cattle (or fed cattle or swine) are lower than expected. While LRP has been available for 2 decades, recently policy changes make it more affordable to producers. *Funding for this work was provided by the North Central Extension Risk Management Education Center, the USDA National Institute of Food and Agriculture Award Number 2018-70024-28586.*

[1] With LRP at the coverage price in this example ($191.09), the producer also incurs a total premium of $1,602.
[2] This example was calculated using LRP prices (or national prices), which can vary from local cash prices.

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