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Wyoming ranch uses risk scenario planning tool – Part III

By James Sedman and John Hewlett

We examined in past installments example Wyoming ranch managers and their production question whether or not to summer their crop of heifer calves and sell them as bred heifers or continue to sell them as calves.

The Risk Scenario Planning (RSP) tool helped them account for the two main price variables: the bred heifer price and the price of hay. RSP results demonstrated the probability of success (and profitability) was too low to recommend the strategy.

The RSP tool can help analyze other important production decisions, such as: input benefit-cost analysis; crop insurance; or, as in this case, the decision to use Livestock Risk Protection (LRP) insurance for feeder cattle. Visit RightRisk.org for a detailed description of the LRP feeder cattle policy.

Partial Budget Analysis

Constructing a partial budget for this decision is straightforward. We include in the added returns column the value of 500 cwt of feeder cattle at an expected sale price of $150.99/cwt.

The LRP index price for the time period is $160.99, a premium to cash price, therefore making a positive difference (basis) of $10/cwt. The coverage price is 98.68 percent of the index price or $160.47/cwt.

The insurance premium goes on the added costs side of the budget at $3.68/cwt or $1,840 total. These figures are shown in the budget below.

Accounting for Variability

The question now becomes whether or not this insurance purchase is a sound decision. The two main sources of variability in the analysis are the LRP index price and the basis value at the end of the contract period.

We will assume the most likely value for the price index will be $160.99/cwt, with a maximum value of $170/cwt and minimum of $140/cwt.

The basis is set at $10/cwt for the most likely scenario, $5/cwt for the minimum, and $20/cwt for the maximum.

The RSP tool generates a probability graph based on this information as shown below.

Given the assumed prices, there would be a maximum possible net benefit of $78,828 and a minimum possible net benefit of $69,787. The most probable outcome is a net benefit of $73,655 with roughly a 51-percent chance the ranch's net benefit will be at or below that level.

Purchasing an LRP policy under these assumptions reduces the variability of calf sales revenue for the ranch, as shown by the relatively small range of probable net benefit values $9,041 ($78,828 - $69,787).

Re-running the analysis and choosing not to include variability introduced by a fluctuating basis value (uncheck the box for Uncertain Value 2, Include), demonstrates that, using a constant basis set at $10/cwt, LRP would provide a floor net revenue of $73,395 or $146.79/cwt. Further, the probability estimates from the curve show the floor revenue was received 56 percent of the time.

Keep in mind the LPR policy would not restrict how the calves are sold on the cash market and leaves open the possibility of participating in an upward trending cash price. The management question then becomes whether or not the manager believes the cost of the protection is worth the value it provides.

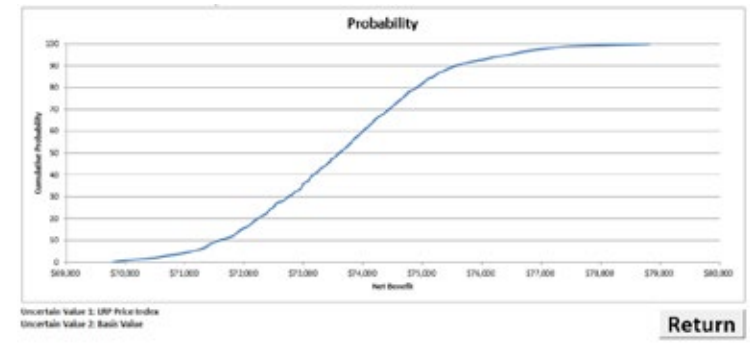

Figure 3. Net Benefit Cumulative Probability Distribution

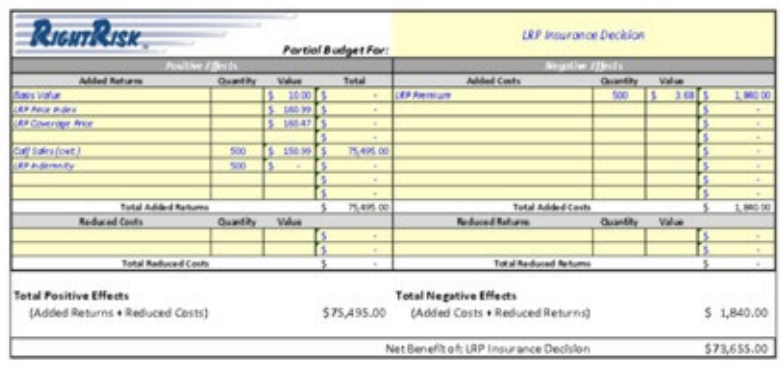

Figure 1. Partial budget for LRP Purchase Decision

Figure 2. Uncertainty Values for LRP Decision

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For more information

The Risk Scenario Planner Tool (RSP) from RightRisk.org is effective for producers looking to make a wide range of risk management decisions and can help discover underlying variability involved in those decisions. To use the RSP tool, visit RightRisk.org and select Risk Management Tools from the Resources tab. From there, select the RSP tool or user guide from the list. RightRisk.org contains numerous courses and programs to assist producers no matter at what stage of risk planning.

The use of sexed semen in beef industry: The next frontier?

By Chance Marshall

Many dairy producers across the country use gender-selected semen to maximize the number of heifer calves born.

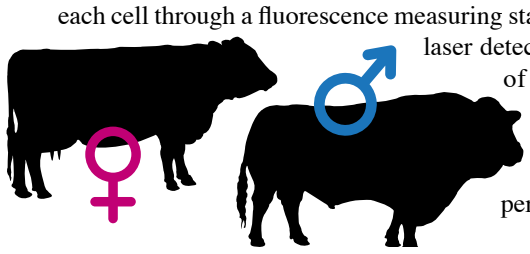
The value of bull calves is minimal in the dairy industry, and increased heifer progeny potentially allows for greater internal growth and/or shortened generation intervals. Sexed semen has been commercially available for the past decade to dairy producers.

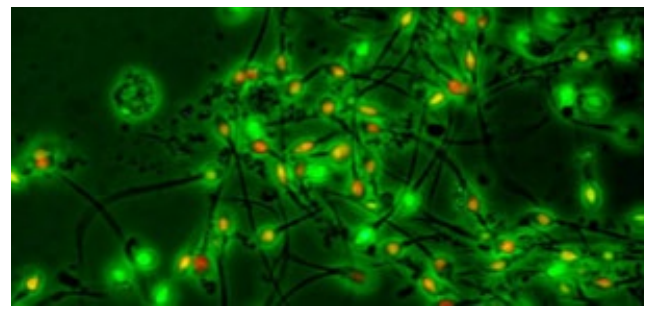
The increasing amount of data has allowed for technological advancements and a better understanding of what to expect using sexed semen.

However, because a reduction in artificial insemination (AI) conception rates has been consistently reported, adoption of this new practice has been much slower in the beef industry and has only recently become commercially available to producers. Much less data is available to measure feasibility within the beef industry. Nevertheless, the potential benefits of sexed semen in the beef industry are exciting and in time may be a viable application to a more successful operation.

How the Process Works

Sorting sperm cells by gender is done through a process known as flow cytometry. Fluorescent dye that binds to DNA is added to the semen collection. Female X chromosomes are larger (3-4 percent) and contain greater amounts of DNA compared to male Y chromosomes. Female spermatozoa will absorb a greater amount of dye causing them to fluoresce brighter than male spermatozoa counterparts. The flow cytometer machine slowly separates individual sperm cells and sends each cell through a fluorescence measuring station in which a laser detects the intensity of the glow and then separates sperm cells with about 90 percent accuracy.





Fluorescent sperm cell staining

Not all cells are properly oriented when they pass through the machine, and some sperms cells are lost. Because of this added process, units of sexed semen are more expensive and contain fewer numbers of sperm cells compared to conventional semen units.

Data from studies during the past decade indicate the decreased number of sperm cells contained in units of sexed semen has led us to expect a 10- 20 percent decrease in pregnancy rates of heifers or cows showing heat compared to using conventional semen. These reports consistently show females who fail to show heat should not be mass bred using a timed AI protocol because the lack of response is much more severe with sexed semen.

Technology and sorting ability is improving, and the number of beef bulls with sexed semen available has expanded substantially since the first units of sexed semen became commercially available to beef producers in 2008. Today, there are enough sires with sexed semen available to begin to satisfy the needs of seedstock producers and have commercial producers considering using sexed semen in their operations.

Application into the Beef Industry

With drought recovery and decreased herd numbers, proponents of sexed semen believe herd expansion is near, and quality replacement beef heifers will continue to be demanded at record prices. If so, the increased returns on quality replacement heifers could make up for lower pregnancy rates.

On the other hand, steer calves are heavier and worth more at weaning. Perhaps using Y-sorted (male) semen may be beneficial for some producers. Steer calves are usually heavier at weaning and worth more per pound. Premiums may be possible for those producers who have the ability to produce complete loads of steer calves. These premiums, combined with the extra pounds at weaning, could compensate for the increased cost of sorted semen and decreased conception rates.

It should also be considered that first calf heifers should represent the best genetics within the herd. Therefore, reducing incidences of dystocia is vital. Generally, there is less calving difficulty associated with heifers giving birth to heifer calves than bull calves. This potentially means if female semen was used on first calf heifers, dystocia issues could be greatly reduced, especially if the semen came from calving ease sires. Producers could take advantage of their best genetics and select only elite cows to produce replacements. This could potentially lead to decreased generation intervals while allowing most of their mature cows to be bred to a terminal sire – likely adding sale value to their calf crop.

Most of the information available on sexed semen in the beef industry comes from herds already well-adapted to artificial insemination. However, the use of sexed semen may be a viable option for beef operations that already have herds involved in artificial insemination and have assessed the risks involved in decreased pregnancy rates. For those producers willing to take the risk, increased profits and considerable genetic improvements may be on their horizon.

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