

Beef CHAMPS

Beef Cattle Health and Management Production Strategies

March 2008

United States Department of Agriculture, University of Arkansas, and County Governments Cooperating

Purchasing vs. Retaining – Which Is Right for You?

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How much does it cost to retain and develop a replacement heifer? Is it more cost-effective to purchase heifers rather than raise them? These are questions producers should be asking themselves on a regular basis. The decision on whether to retain or purchase replacement heifers is quite complex and will vary from producer to producer. If you look at the economics of this decision, the one that makes the most sense may vary from year to year, based upon calf prices, feed prices and other input cost fluctuations.

When deciding on the best strategy for replacing heifers, producers need to weigh the advantages and disadvantages of raising or buying replacement females as well as consider other economic and general management issues specific to their operations. Factors to consider include:

- Current and future market prices
- Herd size
- Pastures, facilities and management level
- Available labor
- Economics
- Herd health concerns
- Cow genetic base (crossbreeding system)
- Herd quality

steady, prices tend to rise. When cattle prices are high, producers begin to rebuild their herds by retaining “high value” heifers or by purchasing replacements. The thinking is that with high cattle prices, it is time to get into beef production or to increase current cow inventories. After the rebuilding phase occurs, supplies increase and prices drop. This is the beginning of the herd liquidation phase of the cattle cycle.

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Buying or retaining more replacements when prices are high is contrary to good business principles. Another problem with this practice is that heifers born during periods of high prices will produce calves during the following period of low prices, and vice versa. To improve cow-calf profitability, producers need to adjust their replacement strategies. A study of replacement strategies by Iowa State University in 2001 examined production and financial data from 1970 to 1999. The strategies that were studied included:

- Maintaining the same number (SS) of heifers each year
- Maintaining the same cash flow (CF) each year – when calf prices are high, the producer retains or buys more heifers

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The Cattle Cycle

The beef industry is cyclical, with a series of high and low prices occurring about every 10 years. The law of supply and demand governs these cycles. As in other businesses, when supplies are down and demand is

- Retaining the same dollar value (DV) of heifers each year – when calf prices are low, the producer retains more heifers

The researchers found that the return over cash costs for the DV strategy was 55 percent higher than for the CF strategy and 33 percent higher than for the SS strategy. These findings indicate it is more profitable to use countercyclical replacement strategies. That is, they should purchase more replacements when calf prices are low. However, producers using a countercyclical strategy must be able to weather large variations in cash flow. To make informed decisions, the producer must evaluate the current market situation and develop an individualized budget.

Herd Size

One of the first issues to address in deciding whether to buy or raise replacements is operation size. Typically, to maintain herd size, a producer must retain about 30 percent of the heifers in the herd. For a 30-head herd, this means an average over time of five heifers per year.

Another issue for small herds is the lack of the ability to use a low-birthweight bull specifically for first-calf heifers. Most small herds will use the same bull for mature cows and heifers. If the producer chooses a low-birthweight bull for his heifers (and cows), generally there is a loss of performance in terms of weaning weight. If the producer chooses a bull that excels in weaning performance, generally the birthweight concerns for first-calf heifers increase.

Is it more economical for a producer to raise these five heifers or to buy replacement females? Usually, small producers find that buying replacements is more cost efficient because of economies of scale. For this reason, larger producers find that raising replacement females is the more

economical choice. However, even some large producers prefer to buy replacements to free up time and resources that could be better used elsewhere.

Pastures, Facilities and Management Level

Young, growing heifers require more management than do cows. The amount of labor associated with heifer development can be substantial and should always be considered in making this financial decision. To reach the optimal level of maturity for breeding, heifers must be managed separately from the rest of the herd.

The higher level of management required for heifers begins when they are weaned. The first 14 to 21 days post-weaning requires good management skills and an extra time commitment because of the increased risk of sickness during this period. Also, heifers must be developed carefully to ensure that they reach puberty and can be bred at about 14 to 15 months old.

Because their nutritional needs are different, additional pastures and facilities are necessary to properly wean and develop replacement heifers. Sound holding pens are required to keep heifers contained during the initial weaning period and to keep bulls away before the breeding season. The extra management does not stop after the bulls are removed. Heifers need to reach 85 to 90 percent of mature weight by the time of calving to ensure high levels of breed-back after calving.

The development phase of heifers will affect their lifetime productivity. Taking shortcuts in management will affect the value of the female for its entire productive life. Buying replacements can free up pastures for about 10 percent more cows in an operation. When making your economic analysis, be sure to factor in this additional income.

Need for Additional Heifers

Another factor to consider is the need to raise more heifers than will be retained. The average conception rate of heifers is 85 percent. Most producers will cull about 20 percent of heifers because of nonreproductive issues such as structure or poor weight gain. Consequently, raising replacement heifers requires keeping about 45 percent more heifers than needed. This ties up capital for an extra 10 to 12 months before the culled heifers are marketed. When considering whether to raise or buy replacements, remember to factor in the cost of the additional heifers that will need to be kept.

Calving Difficulty

Studies at the University of Nebraska Meat Animal Research Center and Colorado State University indicate that 2-year-old first-calf heifers are three to four times more likely to have calving difficulties (dystocia) than are 3-year-old cows. The two major causes of dystocia in heifers are small pelvic area in underdeveloped heifers and heavy calf birthweights.

Heavy birthweights are most commonly attributed to genetics of the sire and can be reduced by using low-birthweight or calving-ease sires on heifers. A major concern when buying heifers is whether they are bred to a calving-ease bull. Producers raising their own replacement heifers decide which bull to use and so have more assurance that the heifers are bred to a calving-ease bull. Buying replacements from a reputable source can help reduce this concern. The use of calving-ease bulls on heifers does not guarantee a dystocia-free calving season. Calving problems can also occur because the heifers have not reached full maturity at calving, because the heifers lack calving experience or because of improper calf presentation. Thus, producers without the ability,

facilities or time to calve heifers may choose to buy second-calf heifers or cows.

Herd Quality

Even though some producers may not want to admit it, they may not be able to retain heifers from their own herd that are the same or better quality than what is available to purchase. Producers in this situation who are interested in herd improvement need to

consider the increased value of purchased heifers over retained heifers from their herd in their decision process. Additionally, there are producers on the other end of the spectrum who raise higher quality replacements than they could purchase.

Conclusion

After reading this, if you feel the decision to purchase or retain heifers is difficult, you are correct.

What works for one producer may not work for others. It is important for producers to make budgets for their replacement heifers and track how much money is spent on them. This information should be used to constantly evaluate your production practices to allow for the most cost-effective production. For more information on production budgets or replacement heifer selection considerations, please contact your local county extension office.

Are You Ready for Spring Calving?

JEREMY POWELL

Spring calving season is just around the corner, and even though the majority of cattle give birth without assistance, it's always wise to be prepared for those that will need help. When observing pregnant cows for signs of calving, you can divide the process of labor into three general stages. These include the preparatory stage (Stage 1), the fetal expulsion stage (Stage 2) and the cleaning stage (Stage 3). Time intervals and events that occur will vary between each stage as well as vary between individuals.

Stage 1 occurs when cervical dilation and early uterine contractions begin. Cows will begin to show behavioral changes like moving away from the herd, restlessness and off feed. Physical signs include relaxation of the pelvic ligaments indicated by a sunken croup and a raised tail, and the udder will also be enlarged and tight. The presentation of the water



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bag usually indicates the end of Stage 1 and the beginning of Stage 2.

The second stage of labor can be characterized as the stage in which birth of the calf will occur. During this stage, uterine contractions are intense. The cow would

normally lie down and actively be pushing to expel the calf. A short summary of the three stages is shown in the table below.

Research has been conducted to investigate the normal length of Stage 2, indicating the typical amount of time it takes for a cow to lie down and give birth to a calf. USDA researchers recorded calving times of both cows and heifers at the Miles City, Montana research station. They found that once Stage 2 of labor began, cows averaged 23 minutes to lie down and give birth to a calf. Heifers generally took a little longer, averaging about 54 minutes. Therefore, when you are observing a cow in Stage 2 of labor, keep in mind that if **no progress** has been made after 30 minutes, then assistance should be heavily considered. However, if progress is continuing, then be patient and allow nature to take its course.

Stage 3 occurs with the expulsion of the placenta and fetal membranes. This is generally referred to as the cow "cleaning." This stage should normally take less than 8 hours. If the cow retains the placenta for longer than 2 days, then contact your veterinarian to get assistance for "cleaning" the cow.

It is important to take proper action during each successive stage of labor to ensure a live calf.

Stages of Labor

Stages	Normal Duration	Normal Events
Stage 1	2-6 hours	a. Uterine contractions begin b. Cervical dilation occurs c. Restlessness; separate from herd d. Water bag expelled at end of stage 1
Stage 2	< 30 minutes (cows) < 1 hour (heifers)	a. Uterine contractions increase b. Fetus enters birth canal c. Calf delivery is completed
Stage 3	2-8 hours	a. Afterbirth is expelled (cleaning)

A couple of weeks before the calving season, cows and heifers due to calve should be moved to a smaller pasture where they can be easily observed. Always try to avoid extensive movement after labor has begun. Moving the animal during labor will slow down the labor process because a cow or heifer will stop to examine her new surroundings. It is a good idea to always have proper facilities and equipment close at hand and in working order for use during the calving season. Movement to a maternity stall may be necessary if assistance is required.

It is always easier to deal with calving difficulty during daylight hours opposed to heading out at midnight to pull a calf. One method that has been proven to increase the number of cows that calve during the day is the Konefal method. This technique gets its name from Gus Konefal, a Canadian Hereford breeder. He realized that by

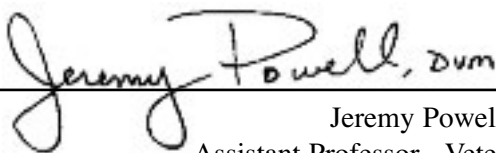
adjusting the time of day he fed his pregnant cows, he could have an effect on the time of day they calved.

Feeding after 5 p.m. resulted in 80 percent of the cows calving during daylight hours. This phenomenon has also been investigated by agricultural researchers in the U.S. One such study at Iowa State University found that when cows were fed early in the day (before noon), only 49.8 percent of them calved during daylight hours, while 85 percent of cows fed late in the day (after 5 p.m.) calved during daylight hours. This feeding method can be implemented without any additional costs and can potentially yield great benefits. The benefits of calving during the day include making it easier for you to check the pregnant animals, increasing the likelihood of identifying cows with calving difficulty and a decreased potential for calf death loss from hypothermia due to calves being

born at night when temperatures are generally colder.

Before calving season, monitor the body condition score (BCS) of the cows in your herd. Keeping the majority of the cows in an ideal BCS of 6 will decrease the chance of having calving difficulty. When cows have too much fat cover, some of the fat is laid down in the pelvic canal causing an increased likelihood of calving difficulty. However, when the BCS is inadequate, cows cannot overcome the stresses that the calving season demands. The stresses of calving include the taxing labor process, starting her heavy lactation and the expectation of rebreeding in approximately 90 days. All of these burdens require the cow to be in good flesh going into the calving season. It is always cheaper to build body condition before calving starts than afterwards.

For more information about beef cattle management, contact your county Extension office.



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