Buying vs Raising Replacement Heifers

by Harlan Ritchie

Many commercial cow-calf producers and purebred breeders are asking if it's economically feasible to purchase bred females instead of retaining heifer calves as replacements.

There are several advantages of selling heifer calves and buying bred females. Bred females generate income within 12 months versus waiting 24 months for a heifer to produce income. This extra time is especially costly if you are operating on borrowed money. And first-calf heifers wean lighter calves than older females.

The obvious disadvantages are the problem of locating and purchasing productive replacement females, as well as the risk of bringing health problems into the herd.

To examine the economics of raising versus buying replacements, at least four bits of information are needed: 1) value of feeder heifers; 2) cost of purchased bred females; 3) estimated annual production costs; 4) projected future value of calves produced.

Using current prices, a study by Dillon Fuez, department of economics, South Dakota State University, and projections made by Harlan Hughes of North Dakota State University Extension, we will attempt to make this comparison. To make the analysis more precise, several other pieces of data are needed, such as retention rate, conception rate and death loss. To keep this article brief, these aren't included.

Assuming 500-pound heifers are worth $90 per hundredweight (cwt), their value would be $450 per head. Using the opportunity cost concept, this figure represents the cost of raising the heifer from conception to the time she is weaned. (Purebred herd costs and returns may be higher.)

Significant numbers of bred cows and heifers are selling in the West. It would appear that bred females are costing from $800 to $1,000, depending upon quality and age. For this analysis, we assume a coming two-year-old bred heifer costs $850.

Estimated annual production costs are assumed to be $257 for weaned heifer calves; $274 for bred heifers and cows. These costs don't include charges for labor or interest on investment.

The estimated costs and returns of retaining a heifer calf up to the time her first calf is weaned are shown below.

In the analysis below, it was assumed that feeder prices would average $5 per cwt lower in 1991 and $10 per cwt lower in

Retaining a Weaned Heifer Calf

Costs	
Initial opportunity cost	$450
First year production (11/90 to 11/91)	$257
Second year production (11/91 to 11/92)	$274
Total (11/90 to 11/92)	$981
Returns	
11/91, no production	$—
11/92, 457 lb calf @$85/cwt	$388
Total (11/90 to 11/92)	$388
Returns minus costs	-$593

Buying a Bred Heifer

Costs	
Initial cost	$850
First year production (11/90 to 11/91)	$274
Second year production (11/91 to 11/92)	$274
Total (11/90 to 11/92)	$1,398
Returns	
11/91, 457 lb calf @$90/cwt	$411
11/92,477 lb calf @$85/cwt	$405
Total (11/90 to 11/92)	$816
Returns minus costs	-$582

1992 than in 1990. It was also assumed that first- and second-calf heifers wean 15 percent and 10 percent lighter calves than mature cows (five to 10 years old). There's only an $11 difference in the costs remaining to be paid off after two years — $582 vs $593.

It would appear that a maximum of $840 could be paid for a coming two-year-old bred heifer in order for her to be equivalent to retaining a weaned calf.

Another alternative would be to purchase coming four-year-old cows that are approaching the prime of their life. Such a female could potentially have seven highly productive years ahead of her. Assuming she would cost $950, the projected costs and returns are shown below. It's also assumed that as a four-year-old, her calf would weigh 5 percent less than the calf she would subsequently raise as a five-year-old.

Purchasing a Four-Year-Old Bred Cow

Costs	
Initial cost	$950
First year production (11/90 to 11/91)	$274
Second year production (11/91 to 11/92)	$274
Total (11/90 to 11/92)	$1,498
Returns	
11/91, 500 lb calf @$90/cwt	$450
11/92, 525 lb calf @$85/cwt	$446
Total (11/90 to 11/92)	$896
Returns minus costs	-$602

As shown in table above, paying $950 for a coming four-year-old cow isn't quite as attractive as the other two alternatives.

Earlier this year, Hughes and his associates at North Dakota State estimated the amount that could be paid for a cow capable of raising 528-pound steer calves from 1990 to 1996. This analysis accounted for inflation and imposed a 10 percent return on investment for labor, management and equity capital. They also projected that feeder prices will decline from current levels to $70 to $75 per cwt by 1996.

Using these assumptions, they concluded that producers could afford to pay a maximum of $843 for bred cows. More recently, they have projected bred heifer prices to decline to $800 or less by February 1991, which would make purchasing replacements attractive.

In summary, there is no precise answer to the question, "Should I retain heifers or buy replacements?" However, it does appear that if bred females that are capable of high productivity can be purchased for $850 or less, it would be worth considering selling heifers and buying replacements. This would be especially feasible if the herd is marginal in productivity. Conversely if the herd is considerably above average in productivity, it would be preferable to retain heifers.

Raising replacements is generally more expensive than most producers realize. Using the opportunity cost concept for placing a value on heifer calves, as shown in this article, the cost of taking heifers up to pregnancy check time in November is approximately $700. At 31 months of age, when they have weaned their first calves, the cost is $950 to $1,000.

Colorado State University ag economists Paul Gutierrez and Norman Dalsted, however, in a much more detailed cost analysis conducted in 1989, have estimated the net cost of raising heifer replacements up to the time of weaning their first calf crop ranges from $601 to $733 when production costs are normal. They reported that when production costs are 15 percent higher than normal, the range is $692 to $832.

When you review all the analyses that have been conducted, the cost of raising a replacement heifer from conception to the time her first calf is weaned may range from $600 to $1,000. Numerous variables affect it: heifer retention rate, heifer conception rate, value of weaned heifer calves, value of culled open yearling heifers, death loss, and the type of production costs included in the analysis.

Editor's note: *Harlan Ritchie is an Extension beef cattle specialist at Michigan State University, East Lansing.*

In the Market for Replacements?
Consider These Tips First

If the decision is made to buy females, there are several factors to consider, says Harlan Ritchie:

- Establish the maximum price you can afford to pay, using the principles discussed in the accompanying article.
- Establish the age range of females you want to buy, A beef cow is generally in her prime from four to eight years of age. She declines slightly from nine to10 and more rapidly thereafter. Longevity varies among regions and among breeds.
- Herd dispersals are a good place to buy cows because nothing is held back. You have an opportunity to select from the entire herd.
- When buying at private treaty, beware of unusual bargains unless you have thoroughly checked them out. You may be purchasing someone else's problem cows.
- Evaluating potential sale cows while their current calves are still at side is a decided advantage for the buyer.
- Unless you are absolutely certain they are pregnant, request that sale cows be pregnancy tested.
- Don't buy females unless intra-state or inter-state health requirements are met. Illegal movement of cattle can result in severe penalties.
- When females are purchased, it's important to establish which imnmnizations are needed. If in doubt, consider IBR, BVD, PI3, lepto-5, vibriosis and haemophilus. Booster shots should be given in three weeks.

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