

# Replacement Female Strategies

---

## Tips for selecting and managing females.

---

Commentary by **HARLAN RITCHIE**

The U.S. cattle cycle is in its early stages of expansion, and more heifers are being retained as herd replacements. According to Cattle-Fax, 500- to 600-pound (lb.) feeder heifer calves weaned last fall were selling for \$100-\$130 per hundredweight (cwt).

This means that a 550-lb. heifer calf was worth \$550-\$715. High-quality replacement heifer calves last fall were reported to be selling for as much as \$750.

Costs of developing a replacement heifer from weaning until she is pregnancy-checked the following year are estimated to be approximately \$250-\$350 when one accounts for all costs, including fallouts from failure to breed, etc.

Assuming an initial value of \$625 for an average-quality weaned heifer calf and development costs of \$300, the total cost of raising a pregnant replacement heifer would amount to approximately \$925.

Obviously, these figures may vary considerably by region and by producer. High-quality replacement heifers bred by artificial insemination (AI) can be purchased from heifer development specialists for about \$1,050. The calves from these matings would be expected to have excellent genetics. For those producers who feel the need to further enhance their genetic programs, selling their heifer calf crop and purchasing replacements may be worth considering.

### Replacement heifer management

**Creep-feeding.** Creep-feeding potential replacement heifers generally is neither cost-effective nor advisable, especially for British breeds. Creep-feeding runs the risk of lowering future milk production because extra fat is deposited in the developing mammary tissue. However, creep-feeding may be necessary when feed conditions are extremely limited, such as in severe drought. Even then, early weaning may be preferable to spending money on creep feed.

**Heifer weight.** For optimal reproductive performance, research has shown that a guideline of 65/85 is advisable. This means that yearling heifers should weigh about 65% of their mature body weight at breeding time, and 2-year-old heifers nursing calves should weigh 85% of their mature weight.

When the average commercial cow used to weigh 1,000-1,100 lb., replacement heifers needed to weigh 650-700 lb. as yearlings and 850-925

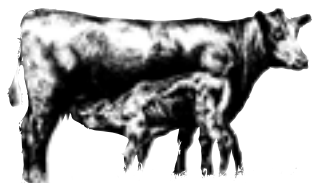
lb. as 2-year-olds. But, mature cows now weigh 1,250 lb. or more, and that means heifers should weigh at least 800 lb. at first breeding and 1,050 lb. as 2-year-olds. Assuming an average replacement

heifer weighs 550 lb. when weaned at 7 months of age and 800 lb. at the start of breeding season at 14 months, she needs to gain a minimum of 1.2 lb. per day from weaning to breeding. A diet

having a roughage-to-concentrate ratio of approximately 75-to-25 will support this level of gain.

*(Continued on page 96)*

## Replacement Females *(from page 95)*



**Body condition.** In addition to body weight, it is important that heifers have adequate body condition at breeding time. On a scale of 1 to 9 (1 = emaciated; 9 = obese), a body condition score (BCS) of 6 (moderate to good) is optimal.

In a recent study at Utah State University, researchers compared the

performance of pregnant heifers that had consumed ammoniated wheat straw as nursing calves with their dams for 60 to 90 days to those that had not eaten wheat straw before. Both groups were wintered on ammoniated wheat straw, along with alfalfa hay and a vitamin-mineral supplement.

Heifers that were exposed to the low-quality roughage as calves gained more weight and conceived nine days earlier than heifers that did not consume wheat straw as calves. After the second winter, straw-exposed heifers still weighed an average of 77 lb. more than the control group. This study suggests that heifers exposed to lower-quality forage as nursing calves may be better able to adapt to a restrictive feed environment, such as one brought about by drought.

**Reproductive exam.** If you are questioning the readiness of your yearling replacement heifers for breeding season, a reproductive tract exam may prove worthwhile. Colorado State University (CSU) researchers developed a system of rectally palpating heifers and scoring their reproductive tracts on a scale of 1 to 5 (1 = least mature; 5 = most mature). Their research revealed that heifers scoring 3 or higher conceived earlier and had significantly higher pregnancy rates than those scoring lower. Many veterinarians are now making this service available to their clients.

Estrus synchronization systems are getting better all the time. If you use AI and want to synchronize your breeding, check with your beef specialist, veterinarian or AI representative for a protocol that best fits your management program.

### Replacement heifer selection

The criteria for heifer selection can vary greatly between regions and between operations within regions. CSU's Tom Field has laid out some general guidelines for heifer selection that I believe can be applied virtually anywhere.

When a herd begins to reach an optimum level of performance, producers should cull heifers at weaning time that are in the extreme highs and extreme lows for various traits. Heifers in the middle half of the crop should then be kept for further evaluation.

At a year of age, cull heifers that have not reached their desired target breeding weight and those with bad dispositions. Also, cull heifers with structural problems that could affect longevity.

After breeding season, cull heifers that are not pregnant and those that will calve in the last one-third of the calving season.

After weaning their first calf, cull based on the number of first-calf heifers actually needed in the cow herd based on early pregnancy and weaning weight of the calf.



**Editor's Note:** For more information on how to condition score your herd, visit [www.cowbcs.info](http://www.cowbcs.info). Author Harlan Ritchie is a distinguished professor of animal science at Michigan State University.