Hungry Heifers

A little TLC during development pays big dividends for a future cow herd.

by ***Boyd Kidwell***

PHOTO BY SHAUNA ROSE HERMEL

"Heifer nutrition is a key to profitable beef production. Unfortunately, due to the perceived high cost of developing heifers, many young females have a slow start in life and this impacts their lifetime productivity," says Matt Poore, North Carolina Extension beef nutritionist.

In his effort to help beef herds become more productive, Poore gives advice on heifer nutrition to many cattle ranchers. The veteran nutritionist also puts his recommendations into practice on the family's Triple Creek Ranch at Virgilina, Va. He operates the ranch in a joint effort with his parents, Henry and Nina Poore. Each year, they raise 60 Angus-sired heifers. Half of these heifers are retained as replacements for the Triple Creek herd and the other heifers are sold to commercial producers.

Feed focus

"Nutrition for replacement heifers begins before birth," Poore says. "Cows expected to produce replacements should be in good body condition [body condition score (BCS) 6.0] at calving."

Adequate nutrition for dams contributes to vigorous calves and produces high levels of colostrum to help newborn calves ward off diseases. As heifers develop, the future replacements should be fed to a BCS of 5.0 to 6.0. But heifers should never be allowed to become overly fat early in life. Overfed heifers develop fat deposits in their udders that later limit milk production. Creep-feeding heifers is expensive and isn't needed if adequate forage is available, Poore points out.

To produce a 1,200-pound (lb.) mature cow, heifers should weigh a minimum of 500 lb. when weaning at 8 months of age. Weaning puts stress on heifers, and this is a critical point in their development. At

Cheap Feed

In the Carolina/Virginia area, some of the less expensive feeds include soybean hulls, corn gluten feed and whole cottonseed. A 50/50 mix of soybean hulls and corn gluten feed makes a good ration. But you can also use corn gluten top-dressed with 3% calcium carbonate [1 pound (lb.) to 30 lb.] and a free-choice rumensin mineral, according to North Carolina Extension beef nutritionist Matt Poore.

"This year, we fed 3 pounds of corn gluten feed and 2 pounds of whole cottonseed (per head per day), both of which we purchased at $87 per ton delivered to the farm (in November)," Poore says. "We always use whole cottonseed, which is a good deal during ginning time in this area. In the Midwest, producers should look at feeds like dried distiller's grains (DDG) that are increasing in availability due to ethanol production."

Midwestern producers are indeed working DDG into rations for replacement heifers.

"In Missouri, there's concern among ethanol plants about keeping DDG sold," says Extension educator Chris Zumbrunnen, who coordinates the Show-Me-Select Heifer program at Milan, Mo. "With the fat, protein and fiber content, I think DDG will start taking over a large part of the soybean meal and commercial protein market in cattle rations. As compared to $2.50-per-bushel corn and $180-per-ton soybean meal, DDG has a feed value of $126 per ton (on a gain basis).

"The nearby ethanol plant prices DDG at $92 per ton with a $9-per-ton delivery charge," he continues. "For $101 per ton you can buy feed that's worth $126 per ton in a ration. It's a pretty good deal if you can get it."

Triple Creek Ranch, the Poores start heifers on high-quality hay the day they are weaned. They also provide a palatable grain mix that includes recommended levels of trace minerals and an ionophore. Their grain mix contains molasses and consists of grains, oilseed meals or byproduct commodities.

Although the ingredients can vary, the grain mix should be balanced to about 16% protein. The Poores feed 1 lb. per head per day of the grain mix and 1 lb. per head per day of whole cottonseed the first day of weaning. If whole cottonseed isn't available, then 2 lb. per head per day of grain mix is suitable. During the four-week weaning period, the ration is increased to 3 lb. per head per day for grain and 2 lb. per head per day for whole cottonseed.

After weaning, the Poores turn heifers into high-quality pastures when possible. If forage quality isn't sufficient to meet the desired growth rate, they continue to supplement with 2-5 lb. of concentrate daily.

Weight gain benchmarks

This postweaning phase lasts until the heifers are ready for breeding. During this period, heifers can be sorted and managed at two nutritional levels to help slower-gaining animals catch up. To reach their target rate for breeding, heifers should gain 1.5 lb. per day during the postweaning phase. At breeding, heifers should attain 65% of their mature body weight. For most Angus-cross heifers destined to mature into 1,200-lb. cows, the target weight is 780 lb.

From breeding to calving, heifers should continue to gain 1 lb. per day. This daily gain can be achieved on good-quality forage, but if grazing conditions are poor, the animals should be supplemented to ensure that they reach a target weight of 1,020 lb. (85% of expected mature weight) when they give birth. At precalving, heifers should have a BCS of 6 to 7.

If heifers are thin at this time, they should be placed on a higher level of nutrition. It's difficult to improve a heifer's condition just before calving and even harder to improve her condition after calving. Good condition at calving improves a heifer's colostrum production, increases the survivability of calves and decreases a heifer's postcalving anestrous period. Pay extra attention to mineral and vitamin A nutrition during the last trimester of pregnancy, Poore suggests.

From calving to rebreeding for second calves, heifers should continue to gain 0.5 lb. per day. Achieving these gains can prove challenging, especially if heifers calve in winter when forage quality is low. Poore encourages producers to develop plans that provide lactating first-calf heifers the highest-quality hay or pasture available. A grain supplement may again be needed to keep each heifer above a BCS 5. Heavy-milking heifers are especially prone to rapid weight loss and resulting reduced chances of cycling.

While this tender loving care at Triple Creek Ranch seems expensive, the Poore family knows that their early investment pays off over a cow's productive life.

"The nutritional program for heifers need not be based on expensive purchased feeds, and target gains can be met easily with minimal energy and protein supplementation. But the improved profitability of calving heifers at 2 years old, as compared to 3 years old, has been long proven," Poore says. AJ

Protect your investment

While nutrition is important, heifers should also have a comprehensive vaccination program before joining your herd. A veterinarian can advise you on a program to fit your area. As a sample vaccination program, here are the guidelines for Missouri's Show-Me-Select Replacement Heifer program.

- **Calfhood vaccinations against brucellosis (Bang's disease) are required in accordance with state and federal regulations.**
- **At weaning, heifers should be vaccinated for infectious bovine rhinotracheitis (IBR), bovine viral diarrhea (BVD), parainfluenza-3 virus (PI_3), bovine respiratory syncytial virus (BRSV) and seven-way clostridial.**
- **To maximize protection against reproductive loss, vaccinations against leptospirosis (five-way) and vibriosis should be given between 60 days and 30 days prior to breeding.**
- **Booster vaccinations against IBR and BVD are required between 60 days and 30 days prior to breeding.**
- **Booster vaccinations against leptospirosis (five-way) are required at initial pregnancy checks.**

The Show-Me-Select program also requires prebreeding reproductive evaluations. Heifers must meet minimum requirements for pelvic area measurements and reproductive tract scores.