



Replacement Heifer Development as A Matter of Survival

by **Troy Smith**

For several years now, there's been considerable conversation about cow efficiency and the influence of mature cow size. There's also been a lot of discussion about longevity and its contribution to lifetime efficiency. Dale Spencer sometimes wonders how much of it reflects genuine desire for improvement and how much is just talk. The Brewster, Neb., breeder's own concern is reflected in genetic selection for truly moderate mature cow size as well as in his heifer development program.

"With \$8 corn and \$200 to \$300-a-ton harvested forage, feed costs are higher than ever," Spencer says. "There's no silage pile on this place. I've got to work with this ranch's resources, and that means running cattle on range with minimal supplemental feed."

No babying

Saving feed costs is only part of the reason Spencer has shifted to a development program that's more challenging to replacement heifer candidates. Rather than following the old mantra "feed 'em

to breed 'em," he's growing potential replacements on a diet similar to that which must sustain them throughout their stay in the breeding herd. Rather than babying heifers along, trying to get the maximum number bred and then transitioning them to the real world, Spencer tests their mettle early. Those that pass the test should be the kind that lives a long, productive life.

"The hardest part is adjusting your sights, visually. They won't look the same. They're going to be a little smaller when it comes time to breed them. They'll probably look a little thinner, at a body condition score 5. You have to get comfortable with that," Spencer warns.

"You may have more open heifers. You probably will, but that's not all bad. You're going to find heifers of questionable fertility early, while they still have profit potential (as feeders). They're less adaptable to your ranch. I think it's better to find them early, before you put more (money) into them, than to find them somewhere down the road. They'll probably fall out of the herd as second- or third-calvers that didn't breed back."

That's a point worth considering. Research suggests it takes the net

revenue from five and maybe six calves to cover the development and production costs of each replacement heifer. According to National Animal Health Monitoring System (NAHMS) data, reproductive problems are the leading reason for culling cows. More than 15% of females culled are under five years of age. How profitable were they to the operation?

Don't automatically cull big

Spencer's heifer development program incorporates concepts favored by University of Nebraska Reproductive Physiologist Rick Funston. It starts with heifer selection. While producers trying to moderate mature cow size may want to avoid keeping the biggest framed heifers as replacements, Funston advises caution when evaluating the "big" heifer calves.

"In general, cows that breed on their first cycle and calve early in the season produce more profitable calves. Those calves are bigger and wean heavier. Heifer calves born early in the season generally exhibit better reproductive performance," states Funston. "If we cull a big heifer calf that was big because she was older, we may be making a mistake."



Don't overdevelop

Funston's research has challenged the rule-of-thumb, set some 40 years ago, which calls for heifers to achieve 65% of expected mature weight by the time of their first breeding. Funston believes many producers have applied development systems to meet or exceed that target in order to get the most heifers bred. It's likely that many producers often overshoot the target. While intensive heifer development systems may maximize pregnancy rates, they may not optimize profitability or sustainability.

Suggesting consideration of a more extensive heifer development strategy, Funston says heifers weighing 50-55% of their mature weight can conceive if they are on an increasing plane of nutrition at breeding. There is opportunity to reduce energy intake and associated input costs by limiting heifer gain early in the postweaning period and then feeding for accelerated gain during the 45 to 60 days prior to breeding season.

Extensive systems may utilize grazing resources, including winter pasture, range or cornstalks, plus appropriate supplementation. There's opportunity, says Funston, to lower heifer development costs by \$100 per head or more.

"Evidence shows that low gain followed by rapid gain, for a flushing effect, can result in higher pregnancy rates than when heifers are fed for even weight gain throughout the development period," says Funston.

"With extensive systems, heifers are not over-developed. They breed back better for their second calves and they stay longer in the herd," he adds, citing findings from U.S. Meat Animal Research Center (US-MARC), Clay Center, Neb., indicating heifers that are more challenged during their development tended to have longer longevity.

Research involving heifer development with restricted diets has been underway at Fort Keogh Livestock and Range Research Laboratory, Miles City, Mont., since 2001. Results indicate heifers developed to target weights lower than those traditionally recommended, consumed 27% less feed over the winter months and gained weight more efficiently throughout the postweaning period and subsequent grazing season. Miles City researchers concluded that feeding to maximize the number of heifers bred "props up" the most inefficient heifers — those



"If you get a female pregnant the first time, you better take care of her and try to keep her in the herd."

— Rick Funston

less likely to consistently produce calves when put in nutrient-limited environments later in life. Those inefficient breeders can be eliminated early.

"In my mind, an 85% pregnancy rate is high enough," Funston says. "I don't want it higher than that, or I'm not challenging the heifers enough."

When producers adopt a short breeding season and conduct pregnancy examinations early, Funston believes there is ample opportunity for market-savvy producers to merchandise open heifers profitably. And if producers are serious about finding the most adaptable replacements for their breeding herds, they should consider retaining more than enough heifers and plan to market the opens.

Heifer survival program

Rosemary Anderson and her husband, Kevin, run a cow-calf operation near Whitman, Neb., but they also provide custom heifer

development and synchronized artificial insemination services. Anderson prefers to wait until late in the development period to step up the plane of nutrition. She calls it a "heifer survival program," borrowing the term from nutritionist Jeremy Martin, a former college classmate.

"We work with several different ranchers and try to meet their objectives, but our customers know I believe in a restricted diet," Anderson says. "Those that have faith and let us go ahead with it have been pleased with the results. It can save them some real money.

They generally want to do it again."

However, Anderson stresses the importance of maintaining a high plane of nutrition after breeding. She believes heifer nutrition postbreeding is just as important as it was

prebreeding. Funston agrees.

"Adequate nutrition is important to maintaining pregnancy," he says, noting that some heifers are found open not because they failed to conceive but because of early embryonic loss. Once bred, replacements still need to be managed for continued growth and development so they calve unassisted as 2-year-olds. Funston calls body condition at calving the single most important factor controlling when a beef heifer will return to estrus.

"If you get a female pregnant the first time, you better take care of her and try to keep her in the herd," advises Funston. "If you haven't noticed, replacement costs are phenomenally high." **HW**