

Rethink Cow-Calf Profitability

As weaning weights become more static, producers should focus on cow efficiency.

by *Katie Maupin Miller*

Cow-calf producers in the U.S. often equate more pounds of weaned calves with more profit. Commercial cattlemen chase fast-growing, high-performing genetics to keep their operations in the black. But, research suggests that the quest for bigger calves might have finally reached its cap, with genetic potential slamming into a ceiling of environmental and nutritional limitations.

David Lalman, professor and Extension beef cattle specialist at Oklahoma State University, published a paper in 2019 showing that weaning weights in the North Central/Rocky Mountain region have become stagnant, and calf weights in the South Central Region, are increasing at about the same rate they were in the North prior to 2006. He hypothesized that as the genetics in the South catch up to the cattle in the North, those calves' growth will also level out.

At some point, expression of genetic potential is (or can be) limited by the environment. Lalman points to Mike Brown's research from the USDA-ARS Grazinglands Research Laboratory, in El Reno, Okla., as evidence. In this experiment, 160 spring-calving Brangus cows were machine-milked monthly. These cows were sired by bulls ranging from the 5th percentile for milk expected progeny difference (EPD) to the 95th percentile for milk EPD. The cows grazed native rangeland throughout lactation. The researchers found a curvilinear response in milk yield and weaning weights. In other words, within the lower half of the sire milk EPD range, weaning weights increased with increasing genetic potential. However, as sire

milk EPD surpassed the 50th percentile, there was little additional improvement in calf weaning weight. The cows' milk production and calf weaning weights were limited by the native rangeland grazing system (see Figs. 1-2). Lalman points to high-producing dairy cows as another example. "If those 100 pound milk (per day) cows were turned out on native rangeland to graze throughout lactation with no supplemental grain, their milk yield would plummet," he says.

Regardless of geographic location, Lalman encourages producers to track their own weaning weight trend over a long period of time. Are your cows weaning heavier calves year after year, or have weaning weights flatlined despite a gradual increase in your bull battery's weaning weight EPD? If you fall in the latter camp, then added pounds at weaning are not likely to materialize without artificially modifying the ranch environment. Those cases suggest a shift in focus because modifications to the environment are nearly always associated with a substantial increase in cost.

"In operations using herd sires with industry-average or greater growth genetics, weaning weights should be increasing on average over a long period of time. If this has been accomplished without increasing inputs, the message is that selection for increased production (weaning weight) is appropriate and should improve your bottom line. But if they're not ... the focus should shift to either improving the match of the cow herd to your grazing and



management system and capturing advantages of postweaning genetic superiority that you bred into those cattle. Capitalizing on superior post weaning performance and carcass traits can be realized through increased weaned calf price or some form of retained ownership,” Lalman says.

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Adding value

Cashing in on the genetic potential is a straightforward way to offset static weaning weights. Whether producers add value through marketing programs or retained ownership, these marketing strategies help producers milk the most value out of their calf crop’s inherent genetics and proper management protocols.

Commercial cattlemen using Hereford genetics, for example, can enroll eligible feeder cattle in the American Hereford Association’s (AHA) Hereford Advantage program, a source and age verification program for calves sired by above-average, carcass-oriented Hereford bulls. Or, producers can consign their Hereford-influenced feeder calves to any of the Hereford-influenced sales around the country to capture added value from buyers looking for those genetics.

Lastly, AHA offers the Hereford Feedout Program for cow-calf producers to dip their toes into retained ownership with access to the Certified Hereford Beef® marketing grid. The data from this program can help cattlemen determine if retaining ownership of their calf crop could be the most profitable route for their operation.

Optimize cows; maximize profit

While the input side of the profit equation can be overlooked, it has a greater impact on profitability in commercial cow-calf enterprises than do output traits. For example, recent Kansas State University research (Pendell and Herbel, 2021) shows that costs explain more of the difference in profitability among cow-calf enterprises than does increased production (weight), price and weaning percentage. For cow-calf producers seeking to reduce input costs, the answer often lies in the efficiency and suitability of their cow herd. Cows with genetic potential that doesn’t match their environment may be detrimental to an operation’s efficiency.

“Mature cow weight, feed intake and milk are all traits related to annual feed costs and forage needs,” Lalman says. “Improving the match for genetic capacity of the cow herd to environmental resources continues to represent low-hanging fruit in the commercial cow-calf segment in my opinion. The good news is that we have selection tools available today, EPDs, to help keep these traits in check, while at the same time, working to improve post-weaning performance and carcass quality.”

There is a positive genetic correlation between selection for increased growth and mature cow weight. This indicates that, without a plan to keep mature cow weight in check, cow size will continue to increase. The data shows that the contribution of mature cow size to weaning weight is limited in commercial operations. Lalman’s research found that for every additional 100 pounds of cow weight, producers can see an added 6 to 28 pounds of calf weight, depending on the ranch environment. But those extra pounds often come at a high cost in additional cow maintenance. With today’s input costs, Lalman estimates that those added 100 pounds of cow weight would likely increase cow maintenance costs by \$70, which isn’t offset by 6 or even 28 additional pounds of calf weight.

“Moderate mature weight cows are more efficient in ranching operations where the cow is expected to thrive in a limited-input management system. Some environmental ‘modifications’ are necessary for optimal animal health and well-being, while others are employed to avoid reproductive failure because the cows are not a good match to their environment. Those modifications can be in the form of earlier calving, more supplemental feed, irrigation, planting expensive introduced forages, reduced stocking rate (so the cattle can select a better-quality diet), Cadillac herd health, parasite control or mineral supplementation programs and the list goes on.” Lalman says.

How cow-calf producers can tell if their cow herd is past the efficiency tipping point can be more challenging. But,

Lalman offers practical advice. If a cattleman notices his input costs for cow maintenance are climbing faster than their weaned calf weights, he suggests culling for efficiency. Cull any fat cows that wean small calves, large cows that are weaning only average-size calves and cows that don’t breed

on time. The goal is to keep the most fertile, thrifty cows.

Through his research, Lalman has seen differences in cow efficiency firsthand. In some studies, he has seen the forage requirements of certain cows be double that of their peers.

“We’ve seen differences among individuals within a contemporary group range from 20 to 40 pounds of average daily forage consumption,” Lalman says. “For example, we had two Angus cows that weaned calves weighing around 600 pounds. One of those cows averaged 20 pounds of forage consumption daily while the other cow averaged 44 pounds. The funny thing was the 20-pound cow maintained better body condition.”

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Figure 1: Milk yield relative to sire Milk EPD

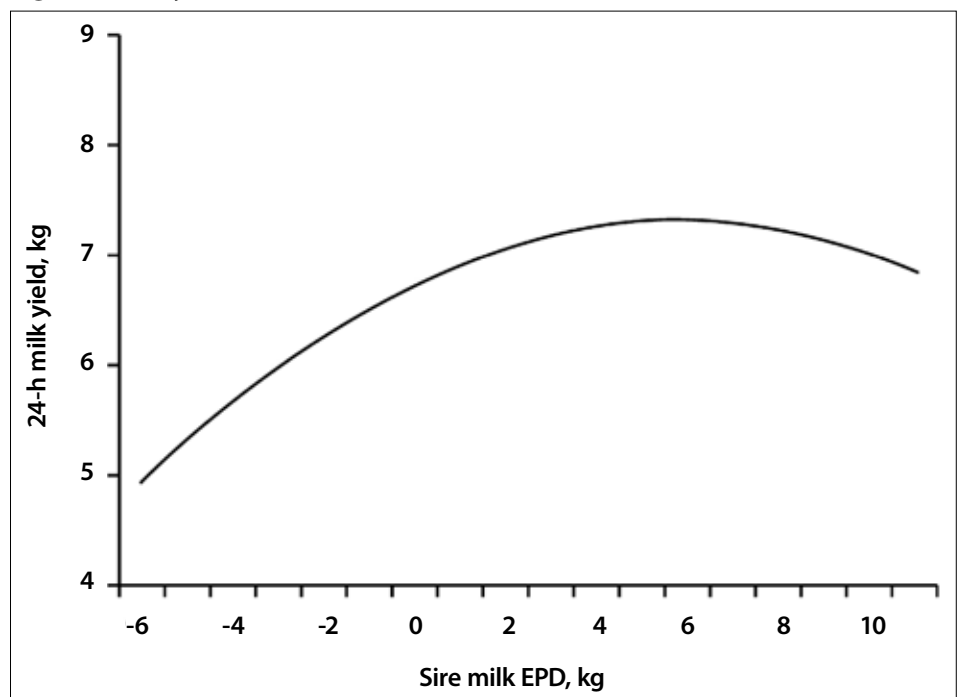
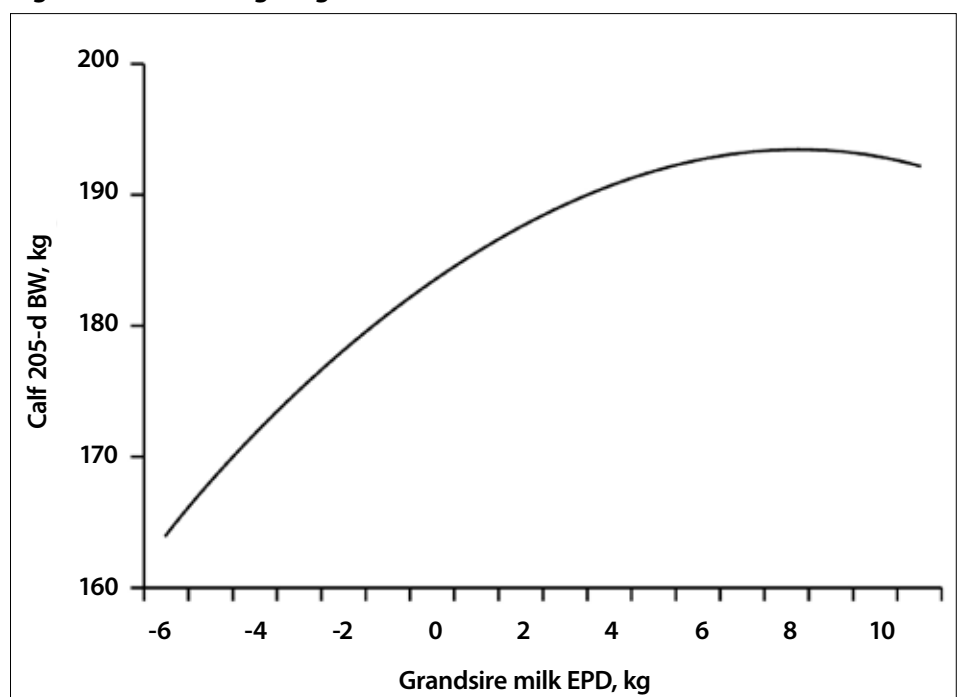


Figure 2: Calf weaning weight relative to sire Milk EPD



Efficient selection

So, how do producers select efficient cows suited for their environment? With many cattlemen poised to build back their cow herds as rain finally quenches land in cattle country, what should they be looking for? Lalman offers the following suggestions:

- 1) Design a management protocol that ensures gradual progress to improve fertility and stick with it. Select herd sires with superior fertility and stayability EPDs, cull open cows, and select replacement heifers only from those that are born early and from those that are bred early.
- 2) Economic selection indexes are a simplified method to make progress in multiple traits over time. Some indexes place substantially more weight on growth and carcass traits than they do on cow traits. Do your homework to ensure the index you are using lines up with your long-term selection priorities.
- 3) Breed average or slightly below breed average for mature cow size, feed intake and milk seems to be the sweet spot in terms of profitability for most commercial cow-calf operations.
- 4) At the same time (but as a secondary selection criteria), select for improved post-weaning growth and carcass value.

While many commercial cattlemen search for curve benders or sires coupling low birth weights with high growth, Lalman suggests seeking the next generation of curve benders — average or below-average on feed intake, milk and mature weight with above-breed-average growth.

“There are cattle that are below average on feed intake and still above average on yearling weight growth. In the past, we’ve always thought of curve benders as low birth weight. Over time, more proven sires are available with moderate feed intake and above average growth. If you are using those tools in the cow herd, you’re probably headed in the right direction,” Lalman says.

He also suggests producers source their replacements from seedstock operations with similar management and environment to their own.

“Purchasing seedstock is probably as much or more about finding someone with a logical plan that lines up with your own goals and priorities,” Lalman says.

Last and certainly not least, heterosis should not be underestimated.

“According to my genetics colleagues, the advantage of heterosis has not changed,” Lalman says. “The biggest thing heterosis brings to the table is longevity and fertility. Improved longevity and fertility reduce input costs in a commercial cow-calf operation.”

Lalman’s research supports the efficiency advantage of heterosis. In his studies, F1 Hereford-sired baldy females not only maintained their body condition scores better than same-sized straightbred Angus peers, but they did so with 2 pounds less forage per day. Lalman says this demonstrates not only the power of heterosis but also breed complementarity. Hereford cattle have long been known for lower feed intake and for added heterosis as the least-related *Bos taurus* breed.

So, as producers rebuild their cow herds, Lalman suggests an added emphasis on cow fertility and feed efficiency to help drive profitability. **HW**

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