

## **Can Selection Indexes Improve Profitability in Beef Cattle**

**Lee Leachman, Manager  
Leachman Cattle of Colorado**

As a bull producer, I know that my long-term business success depends on the financial success of my customers. As such, we try to select the bulls we produce for the traits that drive profit into our customers' herds. Our Angus, Red Angus, and Stabilizer herds are selected based on a maternal profit index. Our Charolais are selected on strictly terminal profit index. We produce and market over 1200 bulls per year. These bulls primarily sell to progressive minded ranchers in the high plains.

There is little doubt that EPD's have revolutionized selection in the beef industry. With EPD's we can make progress on antagonistic traits at the same time. We can increase growth, while lowering birth weight. We can increase both marbling and muscle simultaneously. However, EPD's are often misleading. Many commercial ranchers confuse the added output promised from high EPD's with higher profit. Output is not profit. With higher growth EPD's come higher costs in the areas of feed consumed, larger cow size, and potentially reduced fertility.

On the ranch, profit is driven by cow productivity (weaning weight), reproduction, and cow cost. For better or worse, cow size in commercial herds has increased dramatically in the last 20 years. This was due to selection for higher yearling EPD bulls. Many seedstock cows weigh over 1600 pounds today. Using 100+ pound yearling EPD bulls will lead to even bigger cow size in commercial herds. Unfortunately, bigger cows wean a lower percentage of their body weight. As a result, pounds weaned per acre are reduced as we increase cow size.

In the feedlot, the profit drivers are feed conversion, carcass merit, carcass weight, and health. Because feed conversion is such a major factor, Leachman Cattle started measuring feed intake and conversion in bulls back in 2004. We have collected over 11,000 feed intake records on our seedstock. In a typical group of 100 bulls on test, we find wide variation on intake and conversion. In the spring of 2013, we found two bulls that both gained the same. One bull ate 17 lbs. of dry matter per day and converted 4:1. Another bull ate over 40 pounds of dry matter and converted 10:1. This type of conversion difference translates to huge differences in daughter feed requirements and to the cost of gain on the resulting steer progeny. That is why we must measure feed intake!

Other major factors that affect profitability include carcass quality and hybrid vigor. Marbling is a major driver of eating satisfaction. As a result, consumers pay large premiums for CAB and Prime carcasses compared to low Choice and Select grades. Hybrid vigor can increase pounds weaned per cow exposed by 23%. This is also a major profit driver. In the end, ranchers must make decisions taking into account growth, reproduction, carcass merit, cow size, feed intake, and hybrid vigor. Finding the bull that will best improve a rancher's bottom line is difficult if not impossible.

In 2004, Leachman Cattle started calculating and using selection indexes. Our indexes are based on estimating the production differences between bulls and how those differences affect both income and costs. The system allows us

to simultaneously improve every economically important trait. It helps us find and use the best bulls. As a result, our genetic improvement for profit is more rapid. Customers using our indexes are reducing cow size, improving feed conversion, adding to carcass weight, and improving carcass quality all at once.

These indexes are so effective, that we are now using our feeder index to predict the feedlot merit of a group of steers. Through a company called Verified Beef, you can receive a certificate that estimates the relative market value of your feeder calves. Feedlots across the country recognize that huge genetic differences exist between herds. To find the best cattle, feedlots are willing to pay premiums for superior genetic merit calves.

Selection index technology has been around for decades. It has been successfully used in pigs, chickens, and dairy cattle. The same technology will help us make beef cattle better. By using indexes, we can improve the profitability of beef cattle by over \$10 per head per year. If you miss out on this technology, you could fall behind by hundreds of dollars per head. If you use the technology, you could build a \$100/ head advantage over your neighbor. You really cannot afford to let this opportunity pass!