Culling Cows with Carcass Data

How producers weigh a dam's influence against other factors that can affect carcass merit.

*by **Troy Smith***

Why would cow-calf producers seek performance and carcass data on the calves they raise? Those who earnestly corral and sort through the numbers say it's to enhance the value of their product. It's the only way for producers to really know how their calves perform in the feedlot and on the packer's rail. It's a way of identifying a breeding herd's strengths and weaknesses. Then, the information can be applied to genetic selection — to give direction to breeding decisions.

Typically, that means choosing bulls that will have a positive genetic influence on traits needing improvement, while maintaining the herd's genetic strengths. Sire selection has been the primary means for most data-gathering producers to affect carcass merit among future calf crops. The data also may serve as an aid to selection of replacement females. And for some producers, progeny carcass data figures into cow culling decisions.

The concept is not widely practiced. Philosophically, however, it probably appeals to a lot of producers who feed out their own calves or retain ownership through a commercial feedyard. It might even interest sellers of home-raised feeder cattle, particularly if they have developed relationships with buyers willing to pay for bred-in carcass merit. But systematically using calf carcass data to determine if a cow stays in the herd is a pretty intensive selection method. Some might call it harsh, and it raises a few questions.

For example, compared to other reproduction and production criteria, how important is a cow's record of producing calves that meet or exceed minimum goals for carcass merit? And how do you weigh mama's influence against other factors affecting the outcome? There is the sire's contribution to consider. And despite their genetic potential, calves can and do miss carcass quality targets due to environmental effects. And just how many of her calves (how many years of production) should be evaluated before deciding that a cow is not helping the cause?

While there is not an abundance of them, we found some producers who do consider calf carcass data when culling cows from their herds. In fact, these producers have been doing it for several years — long enough to be convinced that this additional culling tool is hastening their goals for beef improvement.

Careful sire selection

"It's common to hear packers complain about too many Yield Grade (YG) 4 carcasses, while cattle feeders complain there is not enough incentive to make them leaner and still grade Choice or better," says Bryan Mussard of Dillon, Mont. "We're using every tool available to breed cattle that break that packer-feeder antagonism, including using carcass data to plan matings and cull cows."

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While still in college, Mussard started building a cow herd and founded a bull-test facility that he managed for nine years. Today, in addition to a purebred Angus herd (Reminisce Angus), the operation includes backgrounding and heifer development enterprises. Mussard also developed one of the first source- and age-verified cattle-tracking programs in Montana. He has collected carcass data on retained ownership cattle since 1993. He credits Iowa cattle feeder and former business partner Mason Fleenor for encouraging its use in breeding for increased marbling and red meat yield.

"Performance is a given, of course. Cattle have to convert feed to pounds of gain in the feedlot," Mussard says. "And you can't neglect functional and reproductive traits. We've always culled all open, late or poor-doing cows. But even if a cow has everything else, we want her to produce a calf that fits within what we call the 'extreme middle' for carcass merit."

That means Choice or better for quality grade and no YG 4 or 5 carcasses. Even a YG 3 carcass needs to grade in the upper one-third of Choice, or Prime, or it falls short of Mussard's goals. If a cow produces a calf that doesn't fit, Mussard will mate her with a bull chosen to fix the problem. An intensive artificial insemination (AI) program, utilizing proven sires, means Mussard has a pretty good idea what a calf's sire brings to the table.

"Often, we can tweak marbling and ribeye area, through sire selection, and ultimately see improvement," Mussard explains. "For example, if a calf performed well enough in the feedlot but produced a Select, Yield Grade 2 carcass, its mother probably needs to be mated with a bull that can improve marbling. But if we don't see that improvement, she's gone."

Mussard is certain this approach has spurred genetic improvement for carcass merit, without sacrificing performance. It shows in the latest data. His most recent report, from steers fed at a large commercial feedlot, shows an average daily gain (ADG) of 3.44 pounds (lb.), with feed conversion at 5.66-to-1. In addition, 92% of steers graded Choice and Prime, with more than 58% of the Choice carcasses qualifying for premium product lines (upper Choice). Thirty-three percent of the carcasses were YG 2.

"We just don't have many outliers anymore," Mussard states.

Reducing variation on the grid

Near Malta Bend, Mo., Marshall-Fenner Farms is a multi-generational family operation that makes extensive use of AI, using only three or four proven sires. The diversified farming and livestock operation includes registered cows, but commercial females comprise about two-thirds of the tally. All steer calves are finished on the farm, and retrieval of carcass data, through a grid-marketing program, began several years ago. It was a rude awakening.

"Our first time on the grid, we lost about $15 per head," partner Brian Marshall admits. "So, we stepped up our focus on carcass traits, through sire selection, and by putting pressure on the female side, too."

Marshall says the data help refine replacement heifer retention and the process for culling between 15% and 20% of the cow herd each year. In addition to the traditional criteria — age, udder quality and reproductive performance — cows are culled if their calves produce lightweight or Select carcasses. It's a zero-tolerance policy, unless environmental factors are to blame.

"If we know her calf was sick or stressed and it could have affected the outcome, we won't hold that against the cow. Otherwise, unsatisfactory data from one calf will send her down the road," Marshall explains.

Marshall believes careful sire selection plus increased scrutiny of the cow herd has paid off. Fed cattle have earned premiums of $100 to $105 per head, on average, during each of the last three years. Results of 2006-2007 marketing showed 99% of the cattle graded Choice or better. Fifteen percent graded Prime, and nearly 50% qualified for *Certified Angus Beef*® (CAB®).

Of the steers merchandized in March of this year, 90% graded Choice, 10% went Prime, and 85% qualified for premiums rewarding carcasses in the upper Choice and Prime grades. Over one-third of the steers were YG 2, with about 65% called YG 3.

"We had a couple of 4s — cattle that were a little over-fed," Marshall explains. "But our average carcass weight is 800 pounds, and ribeye area ranges between 12 and 14 [square inches]. We've reduced variation, and that's been our goal."

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Ownership education

Bill West manages commercial cows near Ripley, W.Va. For many years, he bought performance-tested Angus bulls, working hard at making his cattle consistent for kind. The calves he sold through a county-based marketing pool looked pretty good. But, several years ago, when West first tried retained ownership and captured data on part of a calf crop, he was disappointed at the amount of diversity revealed.

"A lot of people think their cattle will grade good. I figured my breeding program was good and my calves would do alright, but I wanted to know for sure," West says. "I got educated. There was just too much variation among carcasses."

West now retains ownership on all of his steers and uses the data to breed for more consistent feeding performance and more uniform carcasses of higher quality. Performance still ranks high among West's bull selection criteria, but he scrutinizes carcass merit more carefully now. Applying more pressure to the maternal side of the equation, each calf's report card bears heavily on its mother's future.

"We make comparisons by sire group, and if a calf's performance doesn't measure up or the carcass doesn't grade Choice, that calf's mother is probably going to get culled," West says. "We've seen good improvement in consistency of quality grade. In our most recent group of steers, 95% were Choice or Prime and 62% qualified for CAB. We still need to shave off some backfat, while maintaining our improvement in marbling and keeping ribeye area at 13 to 14 square inches."

Early but not deep

Far removed from West's fescue pastures is the arid range of LU Ranch, near Worland, Wyo., owner Mike Healy says his foray into retained ownership was just as disappointing. Compared to other cattle in his custom cattle feeder's database, LU Ranch calves ranked below average for feedlot performance and for carcass quality grade.

"We really needed to change our genetics, so we culled the very bottom of the herd and concentrated on breeding for improvement," Healy explains. "We actually made some significant changes fairly quick — in just a few years."

It's hard to say anything good about extended drought, but it did give Healy's genetic improvement strategy a push. Forced to cut breeding herd numbers from 1,500 to 800 cows, he culled cows whose calves had produced carcasses ranked on the low end for marbling and red meat yield. And while he doesn't have to cull so deeply now, calf carcass data remains as part of the process.

Prior to that time, soundness and reproductive performance were the first considerations, followed by calf weaning weight. But Healy generally waited until a cow had weaned two or three calves before casting judgment.

"But I've decided you can make hard culling decisions based on a cow's first year of production. You can make an early decision to cull cows whose calves have the very lowest weaning weights. I believe you can also cull cows whose calves rank lowest for carcass merit," Healy states. "You just can't cull very deep."

Still, Healy says he might cull up to 5%, from the bottom of the breeding herd, based on calves posting light carcass weights, small ribeyes and the least marbling. Some producers might want to take smaller bites when they start culling. In any case, it's a matter of establishing parameters of acceptability and eliminating cows whose calves don't fit.

"I think carcass traits still take a backseat to fertility. Maternal traits are more important to profitability. A cow has to have a live calf and raise it to weaning, and she has to breed back. If you've got that in hand, you can work on improved performance and carcass traits," Healy adds. "I happen to think you can have it all."

Here in the real world

Texas A&M University agricultural economist Stan Bevers says culling cows whose calves don't fit targeted parameters for carcass merit is good for the industry as a whole. In an ideal world, every conscientious cow-calf producer would do it. In the real world … well, Bevers doubts the practice will be widely adopted anytime soon. The majority of producers who do embrace it are likely to be seedstock breeders.

"Before deciding to cull the mothers of outliers, individual producers have to decide what they need to accomplish, and prioritize their efforts," Bevers says. "Reproductive performance is still most important. And many commercial producers probably should look first to improving weights and muscle composition and to managing costs better."

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Bevers calls culling cows, according to calf carcass merit, an intensive management tool. Before a manager can evaluate a cow on that basis, her calf's sire must be known. If calves are not the result of AI or single-sire breeding pastures, DNA testing could be applied. Of course, that represents an additional cost. Careful records documenting health and stress events for individual calves would be needed to confirm or rule out environmental factors that might affect carcass merit. Bevers reminds producers of the potential "feedyard effect" influenced by management of feeding, health and implant strategies.

"You have to keep everything in perspective. Consider all of [the] genetic traits that are important to profitability. Don't let your focus become too narrow," Bevers advises. "Scrutinizing cows according to calf carcass data can be a way to fine-tune the culling process, if it results in a direct benefit to your business." AJ