

Yield Grades: Sort It Out & Take Charge

Story & photos by **Steve Suther**

A 20-year high in USDA Yield Grades (YG) might sound like a good thing, unless you know it means a low in beef carcass cutability. Today's cattle are capable of better, but market forces have taken genetics hostage to heavier carcass weights.

As those markets shift, however, discounts for YG 4 cattle will become a bigger pain in the wallet. This is a good time to take stock of herd genetics and management options to hit the premium quality target without exceeding plant averages for YG 4s.

Nobody wants YG 4s, but almost everybody tolerates some of these overfat cattle. It's hard for feedlot managers to know how close they are to the line unless they cross it once in a while. Some value-based grids allow up to the plant average in YG 4s, while others impose a strict \$20-per-hundredweight (cwt.) or higher discount on every animal that crosses the YG 3.99 line.

Results from Certified Angus Beef LLC (CAB)-licensed feedlots show it is possible to keep discounts in check while hitting the *Certified Angus Beef*® (CAB®) brand target.

The top three feedlots achieving that combination in 2004 accounted for 10,557 head of 28.2% CAB and Prime cattle with 7.7% YG 4s and 5s. Overall, the 82 feedyards in the CAB Feedlot-Licensing Program (FLP) had 17.4% CAB and Prime last year with 10.5% YG 4s and 5s.

Roger Chambers manages one of those top FLP yards, Silver Creek Feeders Inc., just east of Council Bluffs, Iowa, near Treynor.



► Management personnel at Iowa's Silver Creek Feeders Inc. were able to increase quality grades while reducing the number of YG 4s and 5s. The yard's 2002 record was 24.2% CAB/Prime with 12% YG 4s and 1.8% 5s. In 2003, 36.3% of the Silver Creek enrollments attained CAB or Prime, while YG 4s went to 8.5% and YG 5s almost disappeared at 0.4%.

Silver Creek has been a CAB partner since April 1999, continually improving accuracy on value-based grid markets. In 2002, with a CAB/Prime level of 24.2%, Chambers had 12% YG 4s and 1.8% 5s.

"I realized we needed to do better," Chambers says. "It was partly a reaction to the data, and keeping in mind that the YG 4 discount is \$20 per hundredweight. Because of customer goals, one of our driving forces became limiting the YG 4s. The number one complaint from customers who had fed somewhere else was overfeeding."

The next year, 36.3% of the Silver Creek enrollments were CAB or Prime, while YG 4s went to 8.5%, and YG 5s almost disappeared at 0.4%. Last year, harvesting 36% more enrolled cattle, he maintained a strong CAB/Prime level of 30.7%, with just 4.7% YG 4s and 5s. About 90% of Silver Creek cattle come in as yearlings.

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their last weight and computer-projected sale date." About one-third of the 1,412 cattle he enrolled in the FLP last year were part of the Tri-County Steer Carcass Futurity (TCSCF), a program known for its target precision. Data on 13,000 TCSCF steers harvested in the last two years show

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►“When we sort cattle into the high-profit third and low-profit third, the YG 4s are always in the low-profit third,” says Iowa State University Extension specialist Darrell Busby. “He may be gaining well, but when he crosses that line, you lose \$150 to \$200. If he crosses the next line and becomes too heavy, the loss can be over \$300.”



►Ultrasound has been an unqualified success in gaining control of carcass quality from marbling to cutability, says 2004 CAB annual conference honoree Henry Gardiner, Ashland, Kan. “Genetic progress is slow by nature, but you can make steady progress.”

less than 3% YG 4s, and most of those were Angus-influence cattle.

The futurity’s goal is to harvest all steers at 0.4 inches (in.) to 0.45 in. of backfat, and last year’s range was 0.37 in. to 0.52 in. TCSCF manager Darrell Busby and board member Bud Beedle, both Iowa State University Extension beef specialists, oversee the sorting. “We always ask the feedlots for their input,” Busby says, “and Roger is one of the best.”

Human vision is the tool in all cases, but it’s not a matter of guesswork and sorting gates. Cattle are judged by at least two sets of eyes, on the scales, about 80 days ahead of the first estimated finish date. They consider fat thickness, but “more and more, we look at past history and genetics, too,” Busby says, noting those records are especially helpful with smaller-frame cattle.

“We don’t worry about the top or bottom 10% in a pen, but focus on picking two harvest dates that will work for the middle 80%,” Busby says. Those are 35 days apart, giving the last half a chance to gain another 100

pounds (lb.).

To pick the first half for market, he says, it helps to look at frame size and estimate a target weight. “When we think a steer ought to be fat at 1,300 pounds and he comes on the scale at 1,400, you can bet he’s ready. If we think one needs to weigh 1,200 pounds and he only weighs 1,100, he’s not ready.”

TCSCF carcass weights run about 50 lb. lighter than the industry average, and Silver Creek saw that average drop from 769 lb. to 746 lb. during its three years of yield grade improvement. Busby and Chambers know that the cattle-to-corn price ratio has led to heavier weights and higher yield grades across the industry, but they have no plans to adjust their targets.

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Yield value

Moreover, Chambers says Angus cattle fed to the point of producing too many YG 4s can provide distorted carcass data, reducing its value to the cow-calf producer. “The best high-quality genetics will deliver the grade you want without going over the YG 4 line,” he says. “And it’s just not acceptable to create YG 4s for an industry that doesn’t want them.”

But the market tolerates them, and cattle-feeding customers sometimes insist on maximizing profit on the pen rather than on individuals. Darnall Feedlots, Harrisburg, Neb., is another top CAB partner in the combination of quality and cutability. Among its FLP cattle, YG 4s increased from a low of 5.5% in 2003 to 9.8% last year, but “YG 4s are not always a mistake,” manager Gary Darnall explains.

“If a customer says he wants to minimize YG 4s, we usually sell on the grid,” Darnall says. “But if he just wants us to maximize profit, we made more money for the last year selling live with 10% to 15% YG 4s. We made money because the packer paid as much for fat as muscle. It costs more to put on fat, but when only some are over the line, we are still adding beef pounds profitably to most of them, and we can do that as long as pen profits keep advancing.”

Regardless of objective, most cattle are ultrasound scanned by a Darnall technician 80 days prior to harvest. “The system reads and projects an animal’s ability to put on fat cover for the next 80 days, and it can be 85% accurate there. It is not as accurate on ribeye, but takes that into account in projecting yield grade,” Darnall says. “If we say we want 0% YG 4s, it will tell us the market date at 0.5%, so if we really want to make that 0%, we may go a week early on the group.”

Ultrasound is just a tool, for which the output must be interpreted in light of such other information as background and history, Darnall says. It is easy to use because it is routine at the feedlot.

Busby says, “A good ultrasound technician who takes his time can find 10% to 15% more cattle that we should have caught, and that is feasible with a \$6 to \$8 Choice-Select spread.” Taking that time

hitting the *Certified Angus Beef*[®] brand target.

slows by one-half the typical 100-per-hour rate at which the Iowans typically sort. However, it may be easier to teach ultrasound evaluation than the more complex decision-making process of “eyeballing,” Busby says. “We are starting to document what we do,” he adds.

Feeding technology

One of the most technologically advanced feedlot sorting programs is the one in place at Decatur County Feed Yard, Oberlin, Kan. It adds layers of structure and computer modeling to ultrasound measurements, sorting most pens six ways, yet allowing for human adjustment to exterior variables.

“We try to maximize returns on each animal,” says Warren Weibert, owner and manager of the CAB-licensed feedlot. “Our program adjusts when the price of corn is in the feeder’s favor and the Choice-Select spread narrows. With the incremental cost of gain lower, we let cattle get bigger, while avoiding the big discounts.”

Last year the 38,000-head feedlot enrolled more than 10,000 cattle with CAB. The data showed an 8.4% incidence of YG 4s, but that began to improve last fall when Decatur County improved its model by measuring and projecting ribeye area (REA). Still, the 2005 average won’t be near 0% YG 4s. “We can do that [and] have done that in proving our system,” Weibert says. “But now we ride the rail pretty hard. We get over the edge at times because, at those times, the model says it will pay.

“We can’t try to be perfect, because with no outliers we wouldn’t know what was possible,” Weibert adds. The first 700 head through the CAB system in December 2003 made 25% CAB with 5% YG 4s, but that’s only part of the picture, he says.

“We have some new customers with Angus cattle, and we are working together to improve profitability at every step along the chain,” Weibert says. “Our numbers are always a baseline on which to improve. As we attract more cattle of one breed, we may be able to manage a portion of the yard to accommodate the characteristics of those cattle.”

As the share of Angus cattle in feedlots continues to grow, more feedlots are faced with learning those characteristics and the difference between high-percentage Angus

and faintly Angus-influenced cattle. The latter will remain an unpredictable commodity, but seedstock producers continue to improve the former.

Although markets can be volatile, short-term pressures should not distract seedstock producers, says Mark Gardiner of Gardiner Angus Ranch, Ashland, Kan. Many Angus producers have made steady progress by selecting for multiple traits simultaneously.

Even long-term market signals can lead breeders astray if they practice single-trait selection, however, he adds, noting the most obvious market signals called for more marbling. “Lack of muscling may be the main limitation to acceptable yield grade today,” Gardiner notes.

External fat gets most of the blame, because if a carcass reaches 0.8 in. it gets a

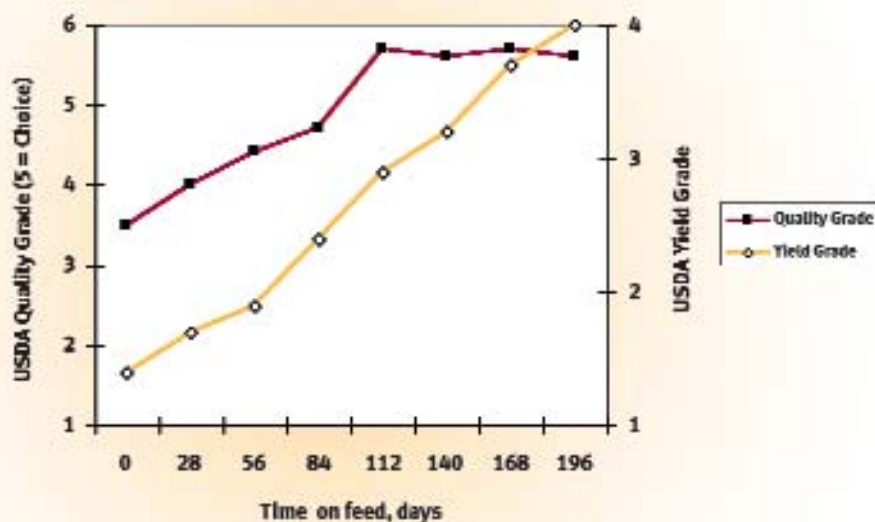
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Fig. 1: Quality grade and yield grade by time on feed of 48 Angus-Hereford steers (in weight = 761 lb.; 16 months of age) that were serially slaughtered at 28-day intervals (0-196)



Steers were implanted with CompuDose on Day 0.

Source: May et al. 1992. Effects of days fed, carcass grade traits, and subcutaneous fat removal on postmortem muscle characteristics and beef palatability. *J. Anim. Sci.* 70:444-453.

Time-on-feed studies show that external fat deposition and yield grade increase linearly as days in the feedlot increase; whereas, marbling score and quality grades increase in a curvilinear manner with increasing days on feed. In other words, marbling score and quality grade plateau at some point during finishing, but external fat and yield grade continue to increase with every additional day on feed. In order to market cattle with high quality grades and low yield grades, we need to know when this plateau in marbling deposition occurs and then use visual indicators to manage yield grade (i.e., external fat thickness).

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preliminary YG 4, says Susan Duckett, University of Georgia meat scientist. Research shows cattle typically reach a finishing point where the degree of marbling hits a plateau but external fat continues to accrue.

Serial harvest studies show that, prior to that point, cattle sold too soon (“green”) may fall significantly short of their potential quality grade. Another 20 days can increase Choice-grading carcasses by 15% to 20% as they reach a kind of exhaust gap up to their potential, she says. But that’s only if they have not yet reached the plateau point.

Gardiner says too many cattle feeders automatically figure a pen of apparently Angus cattle needs another 30 days, when “all they get is another 2% to 3% Choice, and a lot more YG 4s.” He and Duckett agree that the key to the feedlot is familiarity with those genetics. On the ranch, the key is greater REA per cwt. of carcass, while maintaining selection pressure for marbling.

The average REA per cwt. for all Angus cattle in CAB’s database of sire-identified cattle is 1.67, a widely accepted industry average. Gardiner says cattle that beat that

ratio have fewer problems with high yield grades.

“Angus cattle have added stature, along with the management schemes driving the industry, but not all of them have added enough muscle to hold 200 more pounds of carcass weight,” he says. “If you get a ribeye area per hundredweight below 1.67 industry [average], and you push them over 900 pounds, you’re going to have YG 4s.”

Gardiner says, “We don’t see the same YG 4 pressure in our ‘designed genetics’ with 13 inches or more ribeye as in across-the-board Angus cattle that are just called blacks; part of that is learning to manage the genetics on feed.” He agrees with Darnall and Weibert that it makes sense to push past the YG 4 line. “It doesn’t sound very good, but the reality is that with a \$10 Choice-Select spread, you make it up by getting more of them to grade as you approach the marbling plateau.

“CAB acceptance — all those things that allow a carcass to get to that end point — it’s like a lifetime achievement award, where they never had a bad day,” Gardiner explains. “If I give you the greatest genetics in the

world to feed and you don’t manage them correctly, there is no chance to succeed. If Michael Jordan never got a chance to play the game, he wouldn’t have been the greatest player ever. So, even though at first, everybody’s reaction is that they don’t want a YG 4, it is really more of a calculation as to how many you will tolerate.”

The only Angus cattle that would not benefit from pushing the YG 4 line are those with little potential to marble, Gardiner says. “If you have cattle like that, you should probably not use a quality grid, either, and you might question why you have those kind of Angus cattle.

“You can have low-input, low-birth, high-growth, moderate-frame cattle that excel in end-product traits, and leave a female that will replicate the process in the environment that it came from,” he says. “And those cattle are not as different as some folks think. With the American Angus Association ultrasound database, we have been able to identify sires that do all those things very well, and multiply those cattle. We have the tools; I challenge producers to use them.”

