

Yield grades — Cause & Effect

Story & photos by
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The last time the U.S. beef industry saw a higher level of Yield Grade (YG) 4s and 5s was 20 years ago, when average carcass weights were 125 pounds (lb.) lighter. Since then, Angus cattle have made tremendous progress in cutability, keeping pace with a relentless climb in carcass weights. Plentiful grain, scarce beef and external factors have lately brought the race to a critical point.

This year will see near record carcass weights, but perhaps no increase in the number of YG 4s and 5s, says Cattle-Fax analyst Dave Weaber. The 2005 corn crop should not surpass last year's, but the 1.85-billion-bushel carryover is enough to ensure a cheap cost of gain for some time. While the incentive to overfeed will continue, those outside factors may keep a lid on yield grades.

Canadian trade could resume in March, Weaber says, contributing to a million-head increase in the fed-cattle harvest. It would come mainly in the last half of the year, partially offset by reopening Pacific Rim trade. The upshot is a bearish uncertainty that should keep cattle feeders current in their marketings. They can't stay current while holding cattle for a few more weeks of cheap gains, Weaber notes. That's why yield grades should decline going into summer, after a relatively moderate \$12 spring Choice-Select spread.

"For more than a year, we have seen people trying to feed quality into cattle that are the wrong kind, and others trying to add too many pounds to what could have been high-quality cattle," Weaber says. Both strategies led to higher yield



Larry Guggenmos, Brewster, Neb., rancher and feedlot operator, went against the grain last year, selling his 463 calves by sort groups as they matured while others were adding extra pounds to their cattle due to cheap grain prices.

grades, but usually paid off in terms of dollars.

Against the grain

At Guggenmos River Ranch Ltd., Brewster, Neb., Larry Guggenmos operates a 600-cow, mostly commercial Angus herd, along with a 900-head Certified Angus Beef LLC (CAB)-licensed feedlot. He went against the grain last year, when others were adding extra pounds to their cattle. Instead, he sold his 463 calves by sort groups as they matured. The average 229 days on feed was 47 days fewer than in 2003.

Corn is plentiful here, but its price never enters into feeding decisions. Guggenmos simply didn't want to overshoot the target again. By reducing days on feed, he cut YG 4s from nearly 17% in 2003 to a manageable 8.4%. But, the 2003

cattle had achieved 48.6% *Certified Angus Beef*® (CAB®) and 10.3% Prime; that slipped to 35% CAB in 2004.

Guggenmos admits he was disappointed, but he also learned by sorting his cattle. A pen of 125 Hereford-Angus-cross calves may have contributed most to yield grade problems in 2003, because they didn't have much marbling potential. When he pulled the trigger after 234 days on feed, they managed only 8.5% CAB and no Primes, even though the 6.9% YG 4 level indicates they had all the time they needed.

He also found the good ones — 94 straight-Angus calves that went 50% CAB and 5.3% Prime, although they had 11.7% YG 4s.

"I learned there is a lot more difference in our calves than I had imagined," Guggenmos says, "and

all of them could use more ribeye." Talk of stricter yield grade calls moved him to sell earlier than he would otherwise have done. Looking back, he can't say he sold them too green, but he noticed less "green" after the selling was done, and he will change genetics because of it. "I hate to second-guess myself, so I will sell more by sire group than visually this year," he adds. "We'll never quit learning."

Selection pressures

Guggenmos cooperated as a test herd with Accelerated Genetics for seven years, starting in 1997. As a result, more than a quarter of his cows and half the 2-year-olds are out of artificial insemination (AI) sires, mainly balanced-trait bulls. Guggenmos will stay that course, selecting for more ribeye area

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(REA), as well as marbling and growth. He will cull mainly from the Hereford-cross cows, and for the rare disposition problem. At least 20% of the herd will eat cubes from his hand, and he won't keep a flighty heifer.

Another test herd cooperator, CAB 2004 annual conference honoree Mike Kasten, Millersville, Mo., feeds his calves at Irsik & Doll Feedyard, Garden City,

Kan. "I have seen a lot of variation in ribeye sizes, and the lower end needs improvement," he says. "The upper end is in the 13- to 14-square-inch (sq. in.) range, and big enough, I think."

Kasten worries about applying selection pressure for lower yield grades. "Virtually every species selected for increased muscling ends up with reproductive problems, from hogs to the muscle breeds in cattle," he says. "I have watched my fixed costs that have nothing to do with cattle go up every year, and that puts increasing pressure on the production-related costs I can afford to put into my cows."

"It causes me great concern that we might select for cattle that do not have the ability to put on fat reserves easily. If one of my cows can't maintain herself on forage, she won't stay around long, and I can't afford to breed cattle that need to be replaced at a higher level than 15% per year," Kasten says.

Ben Eggers, manager of Sydenstricker Genetics, Mexico, Mo., for which Kasten tested many bulls, shares the concern. He has documented Kasten's success in stacking pedigrees for marbling while maintaining fertility, but is "unaware of anyone who has stacked Angus genetics for percent retail product (%RP) enough to see what the trade-offs would be." The widely held opinion that "we will have trouble keeping the cow" with higher retail product lines is based on limited experience, Eggers says. "With time, we may find higher %RP sires that make fertile, functional females — or we may not."

Database analysis

Participating in structured sire evaluation has helped Guggenmos, Kasten and many other producers identify cattle that work from the pasture to the palate. The CAB Supply Development team has assisted producers in this effort, improving their success rate in obtaining actual carcass data through its relationships with feedlot licensees and packers.

While assisting that data collection effort, CAB has compiled a set of carcass data records that is actually a large subset of that used in the National Cattle Evaluation (NCE) performed by the American Angus Association.

Analysis of the 146,713 progeny records representing carcass data collected through CAB from 1989 through 2002 may provide some guidance for future genetic decisions. The average REA of 12.67 sq. in. amounted to 1.67 sq. in. per hundredweight (cwt.) on the average 765-lb. carcass weight. Yield grade averaged 3.17, with 0.53 in. of fat cover and a marbling score of 360.5 (Small).

REA per cwt. is near the average for all U.S. cattle of that weight, says Larry Corah, CAB vice president of supply development. "However, the 3.17 yield grade is higher than the industry standard." According to Cattle-Fax, the average on 20.3 billion lb. of beef submitted for yield grading in 2003 was 2.94.

"I think we have to aim for something better than average," Corah says.

Of the 17,014 (11.6%) YG 4 and 5 cattle in the CAB analysis, 42.7% had at least a Modest level of marbling, required for CAB acceptance. From another perspective, among all cattle in the database that achieved at least Modest marbling, 16.4% of them were lost to the CAB brand because of excessive yield grade scores.

In a smaller data set from the CAB Feedlot-Licensing Program (FLP), 1,615 calves in 30 lots that achieved greater than 30% CAB acceptance had 12% incidence of "out" cattle, and yield grade accounted for 92% of the loss — 67.4% of those cattle had enough marbling for the brand. Producers can stem the tide by working with FLP partners over time, Corah says. From 2002 to 2004, producers requesting detailed data on 58,192 head through CAB reduced their incidence of YG 4s from 16% to 11.9%, but carcass weights also fell back from 821 lb. to 750 lb.

"Yield grade can be a problem when feeders try to maximize quality grade or add too much weight to Angus-influence cattle," Corah says. "In the 2004 National Angus Carcass Challenge (NACC), 22% of the pens had more than 10% YG 4s or 5s, including one where 21 of the 40 calves went too far."

Angus cattle of less-known genetics are most susceptible to yield grade problems when fed to carcass weights greater than 750 lb., he says, but nobody predicts a significant downtrend in carcass weights. Therefore, Angus producers must develop cattle that deliver adequate REA per cwt. at heavier weights.

Correlations

Analysis based on all progeny in the CAB data analysis, 1989-2002, shows quality grade had a near zero correlation to hot carcass weight (HCW); REA; and percent kidney, pelvic and heart fat (%KPH). Within the 25% of progeny that achieved CAB acceptance, quality grade maintained those zero correlations, but also showed no correlation to fat cover or YG.

That says a lot about the genetic type suited for the brand, Corah says. "You can move cattle from Select grade to Choice with more fat cover, but you can't move them up to CAB acceptance. They either have what it takes, or they don't. You have to put that in on the ranch."

The full carcass trait correlation tables for all sire-test progeny within the CAB data set and for those achieving CAB acceptance are available at www.cabfeedlots.com. For all progeny, fat cover (correlation of 0.826) is clearly the key factor affecting yield grade, followed by REA (-0.51), HCW (0.348) and %KPH (0.181).

Carcass weight is the easiest trait to change by management, Eggers says, then fat cover, by sorting and harvesting the cattle earlier.

"Genetically, REA may be the easiest to affect, followed by fat cover," he says. Kasten and Guggenmos note all YG 4s and 5s can be seen as feeding errors, though sometimes intentional as the market dictates.

Keeping the correlations in mind, Corah points out the differences in Angus cattle from the CAB data set (see Table 1). Cattle get heavier as they get fatter, but

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Table 1: Raw means for selected carcass traits by yield grade for all calves for which carcass data was submitted to CAB, 1989-2002

Yield grade	N. o. of calves	REA, sq. in.	REA per 100 lb. HCW, sq. in.	HCW, lb.	Marbling score	Fat thickness, in.
< 2.0	4,936	14.83	2.07	719.0	290.6	0.28
2.0 to 2.5	21,269	13.63	1.87	732.0	324.9	0.36
2.6 to 3.0	37,618	12.94	1.73	749.2	349.5	0.45
3.1 to 3.5	42,707	12.44	1.63	767.4	369.9	0.55
3.6 to 4.0	26,844	12.01	1.52	790.2	384.6	0.65
4.1 to 4.5	9,630	11.73	1.44	817.7	393.8	0.76
> 4.5	3,709	11.55	1.37	846.7	401.8	0.95

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Guggenmos says to move his herd genetics in the direction he wants to go, he will continue to use balanced-trait sires, but he will add selection pressure for more ribeye area, as well as marbling and growth.



REA doesn't keep pace, resulting in less REA per cwt. Marbling score tends to come along with yield grade, but it depends more on the individual, Corah says. "If we look only at CAB-accepted cattle, we find that 37% of those are YG 3.0 or lower."

Targets

Genetic selection and coordinated management can bring average YG for all CAB-accepted cattle from its current 3.3 to a target of perhaps 2.7, Corah says, "and we shouldn't have to give up cow function to get there."

Value-based grids that include yield grade reward the lowest numbers and discount the higher ones, sometimes starting at 3.5. Does that mean that the ideal yield grade is something less than 1.0? Numerically, yes. Practically, no.

"YG 1s are obviously the most desirable," says Tim Schiefelbein, director of live-cattle procurement for Swift & Co. "But they never have enough marbling. YG 4s have too much finish, so YG 2s and 3s are the most acceptable. A YG 3 Select, however, has some serious genetic problems for marbling.

"Realistically," he adds, "Angus cattle are going to get fatter quicker than Continentals, so feeding management is going to be much more important."

Eggers agrees. "At typical slaughter weights, earlier maturing breeds such as Angus are changing faster than Continentals, which are still on the green side," he says. "Therefore, a set of steers out of an Angus sire might look radically different three weeks past typical harvest, while the Continentals may not change much."

Guggenmos sees the YG 1 as an impractical goal, and aims at the "upper 2s," while Kasten figures the ideal is 3.0.

That's about right, says Brian Bertelsen, director of field operations for U.S. Premium Beef (USPB) in Dodge City, Kan. But grids talk louder than any other statements about ideals, he says. One reason the USPB grid does not pay a big premium for YG 1s or 2s is that "YG 1s have so little insulation that they are subject to more shrinkage in the chilling process."

"Another reason is, we get what we pay for," Bertelsen says. "Lower YG, on average, comes with lower quality grade, so a YG 1 or 2 animal could be considered underfed for our grid." That perspective is best applied to uniform cattle, sorted to outcome, he adds. "The ideal may be a Prime YG 2, but our grid says that with more days on feed you get more dollars for more pounds — the ideal part is that you would have a wide marketing window."