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## Quality beef demand outstrips supply

One look at USDA statistics on the production of Choice and Prime beef over the past several decades and one thing is clear: The industry is producing fewer head of Choice cattle than needed to fill the market demand—fewer than at almost any point in the last 50 years.

According to recent studies, consumers are willing to pay as much as 50 percent more for beef USDA Prime than Select grade steaks. That willingness to pay has not gone unnoticed by packers or feedlots, which are taking advantage of grid pricing to source more quality cattle while passing premiums to producers for those cattle.

There are a number of factors influencing the volume of Prime and Choice beef being produced. Among the pertinent ones are genetic selection for traits antagonistic to carcass quality, aggressive implanting regimes and the use of Continental breeds in crossbreeding programs to increase carcass size.

### Statistics show decline

According to USDA statistics, in 1956, 5.7 percent of all cattle slaughtered graded Prime and 57.1 percent graded Choice. A decade later, the share of Prime carcasses stood at 6.4 percent, while Choice jumped to 76.1 percent of all cattle graded. In 1976, USDA altered the grading standards to today's levels, widening the Choice grade to include what we now call low Choice. The percentage of Prime and Choice beef peaked that year, with 9.8 percent grading Prime and 79.5 percent grading Choice. Only 6.4 percent graded Select. However, it was all downhill from there for Prime beef.

By 1986, as more Continental cattle were introduced into a primarily English-influenced cattle industry, the percentage of carcasses grading Prime slipped significantly, while the devalued Choice grade numbers soared. The percentage of cattle grading Prime decreased to 3.3 percent while those grading Choice rose to a peak of 93.6 percent.

The beef industry read consumer preference for poultry as a call for leaner beef, and producers moved aggressively toward crossbreeding schemes that produced larger, leaner carcasses. The percentage of cattle grading Prime in 1996 fell to just 2.4 percent. Choice grading cattle declined more than 30 percentage points, to just 60.4 percent of all graded carcasses. Select grading carcasses rose from 2.8 percent just a decade prior, to 37.1 percent. Since then, despite serious producer efforts in the past several years, the industry has failed to recover from the decline. It has not been able to respond adequately to demand or capture the premiums left on the table for Choice and Prime beef. Last fiscal year, U.S. beef producers saw just 3.1 percent of all carcasses grade Prime and only 57.2 percent of carcasses grade Choice.

Given the current level of demand for high quality beef, and the premiums available, the question is how can beef producers take advantage of the opportunity?

Steve Suther, director of industry information for Certified Angus Beef (CAB), said one of the driving forces behind the creation of the CAB brand was the idea that the industry needs to focus on the reason consumers purchase beef—its flavor, which is a result of marbling and one of the primary drivers of quality grade.

“Maybe it was too convenient that the industry suddenly had a Continental-influence herd and more health professionals urged consumption of leaner beef. Only later did we realize lean beef can still be well marbled, and it needs to be, to satisfy most consumers,” Suther said. “CAB enjoyed dramatic growth in market share while the downward spiral in marbling for commodity beef was losing overall consumer demand for beef in the 1980s and ‘90s. In this decade, we have seen the CAB acceptance rate fall from nearly 20 percent of evaluated cattle to just 15.6 percent last year, even though the tools and incentives are available for change. If the industry does not regain its focus on quality, how confident can we be about maintaining growth or even stability in consumer demand?”

### **A change in breeding**

Producers must first look at how cattle production has reached its current point, starting with the change in genetic selection since the 1950s. A quick comparison of a photograph from a steer show then with one in the past few years reveals a distinct difference in phenotype. In fact, in some cases, cattle from the same breed, particularly those of Angus or Hereford breeding, don’t even appear to be the same species. Those differences, coupled with the arrival of crop price supports for corn, which lowered grain prices, led the industry away from grass pastures to feedlots for growing and finishing cattle. The change meant cattle could be finished in a fraction of the time and the race was on for faster growing, more efficient cattle. The result was a push among producers toward the use of Continental genetics, which added muscle and frame to smaller English cattle while reducing both external and intramuscular fat.

The cattle produced were ideally suited to the feedlot environment. They gained weight quickly on the popular, high corn-based diet without becoming overly fat. Cattle could be readied for slaughter much more quickly, reducing input costs and making the industry as a whole more profitable as cattle were pushed through the production chain more quickly. Average slaughter age of cattle dropped from a range of more than four years to today’s standard of 14-16 months. Although production speed and subsequent profits increased, carcass quality, primarily intramuscular fat, declined. That was probably due to the combination of more Continental genetics, poorly understood physiology of marbling deposition and lack of coordination between industry segments. At any rate, one consequence of pushing the new type of animal through faster was a lower marbling score and a larger, leaner, lower grading carcass.

### **Larger carcasses**

The move by the industry toward larger carcasses in itself also helped to lower the number of carcasses grading Choice. According to a number of studies, the relationship between growth and yield grade are complementary to one another, but have been shown to be antagonistic to marbling. The result is a situation where producers are forced to seek a balance between growth traits and carcass marbling. The decision appeared simpler in the 1980s when consumers demanded leaner cuts of beef. Producers were given free rein to produce a larger, leaner carcass. The corresponding increase in the percentage of cattle grading Select dragged down the percentage of Choice and Prime carcasses.

However, in many instances, the drive for larger carcasses with some level of disregard for finished product quality continues today. Larry Corah, vice president of supply development for CAB, said the reason for larger carcass production is the result of a muted market signal from packers and their willingness to accept larger carcasses without penalizing producers.

“The relationship between higher cash fed cattle, relatively low cost of gain and expensive replacements has met with packer signals for heavier carcasses and a lenient approach to over-finished Yield Grade 4s and 5s, even on the grids,” said Corah.

Part of the reason lies in excess packing capacity, according to CAB Packing Director Clint Walenciak, who said the increase is “due to the large excess in plant capacity and their need to keep the chains moving with more pounds of beef on each hook.” The situation could change in a matter of weeks, but we know it takes several years to change the output from a cowherd.

Between 1986 and 1996, the ratio of Select carcasses increased from 2.8 percent to 37.1 percent of annual beef slaughter. The downside of the change was not only a serious increase in carcass size, but also a decrease in tenderness, which led to a slide in consumer demand for the product.

“Producers who make a living at it will tell you they will change when they see the money,” said Corah. “Now they can see the money, but it has been just as available for many producers who sell calves that will be no better than Select grade. That is because of where we are in the cattle cycle. We will get past the short-term industry signals that muffle those underlying consumer signals to produce Prime, Choice and the CAB brand. Then, if producers want to add value to each calf, they may be more interested in changing genetics and management.”

### **Rise of grid premiums**

The rise of grid marketing of cattle has provided two important tools which had been lacking in the business and, at some level, contributed to a decline in carcass quality. The first, and perhaps most important, is carcass data. Although even today producers complain about the difficulty in obtaining carcass data unless they retain ownership, grid marketing allows producers to determine with better accuracy how their cattle perform under the hide. Grid premiums are also being more widely reported than ever before, making them a more valuable tool for producers, said Suther.

“We are seeing more reporting of those signals, and Cattle-Fax recently began quoting the value of Certified Angus Beef cutout from Urner-Barry Yellow Sheet data. Those numbers show the CAB-Choice spread is often wider than the Choice-Select spread, but they are additive, which should send a huge signal to producers,” he said.

However, Suther believes they are still under-utilized because of strong cash fed cattle prices at this point in the cattle cycle.

“Although we talk about this age of value-based marketing, most cattle are still sold without regard for the grid premiums. Selling on grids is said to have eclipsed 50 percent a few years ago, but then the cyclical strong cash market began to win back a larger share. Only a small fraction of the finished cattle sold are in the original owners’ hands, so there is a major disconnect between grid signals and producers. We really need more CAB cattle, and the market will reward that, but breeders are not usually feeders, and vice versa,” Suther said.

The other benefit of grid marketing is the premium received by producers who consistently meet high quality standards. These two pieces of the marketing puzzle allow today’s producer a greater advantage over those in the past who could only guess at how their cattle would perform on the rail. As an additional benefit, producers have a financial incentive to produce a higher quality carcass. As time goes on, quality premiums will continue to grow at a faster rate than premiums for yield grade, making it advantageous for producers to obtain and utilize carcass data in their breeding decisions. At times in the recent past, the premium for Prime and Choice cattle has reached as high as \$40 and \$20 per hundredweight of carcass, respectively. That makes an 800-pound Choice carcass worth an additional \$160 over Select, a significant opportunity for producers consistently able to hit that mark.

## **Genetic selection's impact**

It is clear there are significant financial benefits to producers who can meet the increasing demand for high quality beef. But, while that is an attainable goal, it is important to note there are factors that work against marbling, and subsequently, quality grade.

The best news for producers seeking to bump up quality grades among their cattle bound for the feedlots is the fact that marbling, the biggest factor in quality grade, is highly heritable when used as a selection tool in breeding programs. The bad news is, marbling traits are often antagonistic with traits for a lean carcass or growth traits. However, Corah believes those antagonistic traits are less significant than other genetic decisions made by cow/calf producers.

“It does seem that much of our current cowherd is incapable of producing calves that hit the high-quality target, but I doubt that it has much to do with the actual antagonisms,” Corah said. “Those are real, but many quality-focused breeders have successfully defeated them. Yet, many of them also tell me, with some frustration, that most of their bull customers buy on looks alone. If they look at numbers, that is often limited to actual weights rather than the statistical tools, such as expected progeny differences (EPDs) and indexing, that have been developed to guide selection. The primary antagonism that gets in the way is more related to competing messages from the different breed and breeder interests. The free marketplace of ideas can be confusing.”

Corah said studies have shown producers don't need to choose between maternal and carcass characteristics when selecting bulls for their herd.

“The mixed messages often imply it is necessary to choose either high quality beef or growth or maternal efficiency. In the late 1990s, Twig Marston's exhaustive research review at Kansas State University showed no link between cowherd function and selection for marbling. More recently, John Lawrence, Iowa State University economist, has reported that cows from the university's high-marbling herd are more efficient than the lean focus herd,” Corah said. “A look at the top 10 percent and bottom 10 percent of sires ranked for grid value of progeny in the American Angus Association database shows no real difference in dollars returned for weaned calves, so you have to ask how real the perceived barriers are today. Some organizations may have an interest in trying to maintain the illusions, especially if their cattle can't deliver the full package.”

Cattle bred for rapid growth tend to marble at a lower rate than those selected for moderate growth, even in traditionally easy-marbling British breeds known for the trait. As growth characteristics increase—yearling weight for example—there is an inverse effect on intramuscular fat. More of the energy consumed by the animal is put toward muscle growth rather than fat deposition. Because marbling is highly heritable, selecting bulls with good EPD numbers in the trait can produce significant increases in carcass quality in rapid fashion. Corah encouraged cow/calf producers to work with feedlots to obtain post-weaning feedlot performance data on their calves, then cull from the bottom of their herds and make better selection choices on grid market values.

“You can choose bulls that will improve quality grade without sacrificing other traits, and they are easier than ever to find with all the tools such as EPDs and dollar indexing,” Corah said. “To make any progress toward higher quality beef, a producer must set goals, focus on predictability and work in tandem with the next segment of the industry as much as possible.”

Conversely, ignoring marbling EPDs, or highly favoring growth EPDs, can negatively affect carcass quality. As producers over the past few decades have worked to increase carcass size by favoring increases in weaning and yearling weights, they have unintentionally lowered carcass quality.

## **Effect of implants on quality**

Growth promoting implants have also been implicated as a factor in the decline of high-end carcass production. Implants can give a big boost when it comes to increasing gains in the feedlot, boosting feed efficiency by as much as 10 percent and average daily gain (ADG) by as much as 20 percent.

While there is ample financial reason for feedlots to use implants, animals harvested at a constant weight show a higher average lean-to-fat ratio than non-implanted cattle. The result is the same as selecting for high-growth cattle. More energy is expended by the animal for muscle development leaving less for fat deposits in the form of intramuscular fat, decreasing the potential for a high-grading carcass.

“We manage to derail a lot of potentially Choice cattle in this country by inappropriate implanting, inefficient marketing that stresses calves and lack of proactive calf health management,” said Corah.

Recent studies have shown there is a difference in overall marbling, and therefore quality, if implants are administered at the wrong time. Because marbling deposits begin forming at a young age, it is important they not be administered until daily caloric intake is well above growth needs. For example, cattle bound for a grass backgrounding program where caloric intake will be minimized, and ADG below two pounds per day, should not be implanted at the time they are turned out to grass.

However, once those same cattle move into a feedlot where caloric intake will exceed that needed for growth, an implant will have less impact on the deposition of intramuscular fat. The result will be a boost in weight gain and muscle mass, with less impact on overall carcass quality grade at slaughter. It is in a feeder’s best interest to determine whether the added boost to daily gain warrants any potential loss in quality grade when determining what implant regime will best fit their operation.

## **Summary**

Consumer demand for high quality beef has never been higher, and production of Prime and Choice beef has never been lower. Now is the time for producers to evaluate their operation for ways they can increase the quality of the animal under the hide. As the cattle cycle begins to trend toward higher numbers of cattle and lower prices, the opportunity to seize premiums and increase profitability is within each producer’s grasp. A look at premiums available for high quality cattle will show that increasing marbling scores may be the fastest and most reliable way to put more money in the bank on sale day, regardless of how cattle are sold. — John Robinson, WLJ Editor