The Value of Uniformity

Diversity in the feedlot can be detrimental to quality and profit.

by ***Paul Dykstra***

American consumers have so many choices, it can be confusing. A first-time bread buyer may find the bakery aisle overloaded with countless brands, grains, slice patterns and added flavors, each at a different price. To avoid two-hour journeys down these aisles, most of us have preselected our favorites. We've decided on a combination of quality and price that satisfies. The great part is, we've removed the guesswork. We open the package and get what we expect every time.

In beef production, we're not as fortunate. No matter how much effort we put into selection and consistency, there's just no way each animal can be the same. Diversity may entertain rare breed collectors, but it creates management and marketing challenges at the end of the line. When finished cattle are sold to the packer and harvested, all the cards are on the table. Cattle feeders who measure individual performance from in-weight to carcass quality see the value differences from diversity.

Uniform advantages

You could ask Sam Hands, partner and feedlot manager in his family's Triangle H Grain & Cattle Co., Garden City, Kan. Hands has scrutinized data for decades, even more so since becoming a Certified Angus Beef LLC (CAB)-licensed partner in 1998. Working together, CAB Supply Development staff and Hands are shedding light on how to select and manage cattle for quality and consistency.

Data spanning 1997 to 2004, comprising more than 25,000 individual animals, have been recorded and analyzed for differences in weight, feedlot performance and carcass merit. Results point to the wide variety in cattle that are managed alike, often from the day they are born, and marketed from the same feedlot pen.

Average variation among the 309 pen lots (see Table 1) shows an in-weight range of 338 pounds (lb.) between the lightest and heaviest calves. The cattle grew further apart as they moved through the feeding period. A hot carcass weight (HCW) range of 293 lb. multiplied by the average dressing yield of 64.44% calculates to a whopping 455-lb. range in finished live weight. That's a huge gap, and it's just an average.

Differences in starting weights, fleshiness and frame certainly influenced marketing dates and final weights. But, the cattle grew further apart largely because of differences in average daily gain (ADG), which typically varied 2.82 lb. within a pen. Multiply that by the dataset average of 143 days on feed, and you would get a 403-lb. difference in live weight.

Variation in value

Such variation shows the challenges cattle feeders must meet. But, there is more to the data than this fact of life. A closer look shows some lots were much more or less variable than the average in terms of ADG. The most uniform-gaining 25% of lots varied in ADG by only 1.77 lb., while the bottom 25% differed by 4.14 lb.

We can analyze the dollar effect if these cattle were marketed in 2003-2004 using an average Grid-Max grid price of $135.25 per hundredweight (cwt.) (see Fig. 1). The more uniform 25% of cattle differed in final value by $221 per head due to weight gain alone, while the least uniform pens differed by $516 per head.

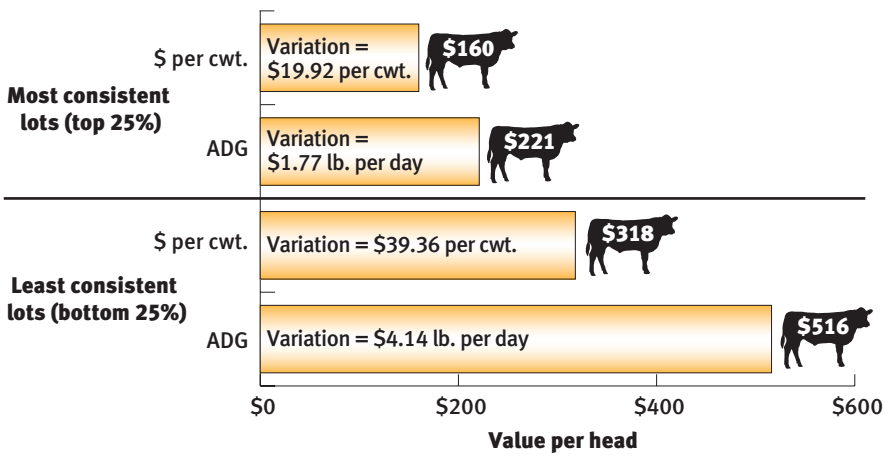
Laying aside the net-value effect of in-weight variation, two points should be clear. First, differences in rate of gain due to genetics, health or other factors result in great differences in individual value. Second, the most uniform cattle stay within a closer range to allow marketing in a narrower time window. That means more individuals reach their carcass optimum end point at the same time, decreasing grid discounts due to outliers for weight and yield grade, and potentially increasing premiums.

Applying the carcass data to Grid-Max premiums and discounts, we can see great value diversity within pens due to carcass quality as well. The average range in price within each lot was $29.80 per cwt. as a result of premiums and discounts derived from quality grade, yield grade, *Certified Angus Beef*® (CAB®) brand acceptance, weight and other discounts. The average 808-lb. carcass would have been worth $972.43 on the low end up to $1,213.21 for the best carcass in each lot. That's a difference of more than $240 due to carcass merit alone.

The bottom line

Unfortunately, for those who must deal with the deluge of diversity, the effects of variation in starting weight, condition and frame; ADG; and final carcass value all come into play on the bottom line. The feeder has little control over most of these variables once the animals enter the feedlot, and cattle within

Fig. 1: Total value differences within lots due to variation[a]



[a]Based on 808-lb. average carcass weight.

each pen are managed the same. That points to the great need to control diversity within cow herds and procurement points of origin.

The good news is the best cattle excelled in both gain and carcass quality. The top 25% ADG pens put on 4.10 lb. per day while achieving a CAB-acceptance rate of 18.6% and 67.8% Choice. The poorest gaining 25% managed only 2.93 lb. ADG, 14% CAB-acceptance and 59.6% Choice. That's not part of the discussion on uniformity within pens, but it illustrates that one can select for high-performing cattle while maintaining and even improving carcass traits.

Effective grid marketing requires sorting for these weight and carcass "readiness" variables so that each calf can be sold near its ideal finish point. Sorting weaned calves at delivery or later in the feeding phase helps to optimize days on feed and maturity for two or more sort groups from a single source. Admittedly, it takes more labor and often makes for poor use of pen space, adding costs for custom feedlots.

During the eight years represented in this study, the 25% of pens with the most variability were marketed, on average, during a period of 60 days. The most uniform 25% of pens were sold within a seven-day window. Certainly, market conditions would have dictated some timing decisions, but physiological differences, such as market readiness, among individual animals clearly played a role in this feedlot, where cattle are frequently sold on a grid.

Variation works for the industry to a certain point. We need fed cattle harvested each week of the year, which supports differing calving seasons and management regimes. However, the industry needs producers, as single sources of calves, to raise cattle that are as alike as possible. Calves should be of similar genetic background and born within a tight calving season. If a ranch is large enough, it might produce several loads of calves a year with some loads differing from one another, but containing like individuals within each load.

What's more, feedlots can help themselves through discriminating procurement of cattle and working with their retained-ownership customers to minimize the extremes. That's not to say only the uniform sets of calves will end up as neat and tidy groups at the feedlot and the rest will somehow vanish into thin air. But, working together, the industry will create fewer outliers and recognize them sooner. Uniformity clearly has advantages in the feedlot, on the rail and in the eyes of the consumer. After all, everybody wants to get what they pay for.

Table 1: Averages and ranges in variation within feedlot pens for economically significant factors

Variable	Average	Average variation	Range in variation: Top 25% (least variable)	Range in variation: Bottom 25% (most variable)
In-weight, lb.	761	338	209	490
HCW, lb.	808	293	211	384
ADG, lb.	3.53	2.82	1.77	4.14
Total carcass value, $	$1,092.58	$459.14	$345.77	$584.86
Carcass price, $ per cwt.	$135.25	$29.80	$19.92	$39.36