

Postweaning Performance And Carcass Data: Now That I Have It, What Do I Do With It?

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"Knowing where you are so you will know where to go." This statement seems to be in vogue. It sounds great. From a practical and scientific standpoint one would have to agree. Right? Now that the statement has been accepted, how does one accomplish this from a beef cattle management point of view?

There has been much in the popular press concerning the results of Strategic Alliance, Beef Quality Audit, Computer-Assisted Retail Decision Support and other programs identifying the industry average cattle type and problems, as well as suggesting the path that the industry as a whole should follow to correct such problems. However, no one has the industry average herd. How does an individual cattleman characterize his cow herd? If you do not know what your cattle are doing in the feedyard and on the rail, then steps should be taken to find out. Retrieving feedlot performance on ones cattle is no easy task. If you are not retaining some ownership in your cattle to slaughter, it is even more difficult. Retained ownership allows for periodic performance updates and close-out sheets that will provide some information. Carcass data is even more difficult to obtain. Various programs have been tried by groups such as USDA. The old ear tag system of the 1980s never worked very well. Today, the National Cattlemen's Association operates the Cattlemen's Carcass Data Service (303-694-0305) and many states, breed associations, and universities sponsor feedout programs.

When the decision is made to participate in one of these programs, cattlemen next must decide how to select cattle to truly represent the genetics of the cow herd. Which calves? How many? Remember that you are trying to create a baseline that represents your cow herd, so do not send the worst or best, but a truly random sample. The more

variation you have in your herd, the more calves you will need to represent the population. The problem is that there is little that you can see at weaning that represents the traits of interest. What are the traits of interest?

Health status/history - Although health is not a "trait", it could be more important than the following traits. It is important to have a positive reputation relative to cattle health. Health cost can easily eliminate all net profit for a given individual.

Dry Matter Feed Intake - The key to profitably feeding cattle is feed intake. As daily feed intake goes up, profitability goes up. Steer calves should consume 3% of their body weight. Once cattle reach full feed, capacity will not increase even though body weight does. Slaughter weight steers should be consuming 2.25% of body weight. 2.85% body weight mean intake during the feeding period is a realistic goal.

Feed Conversion - The ability to convert feed to gain is one of the most discussed feedlot traits, but is seldom measured for seedstock, making selection for conversion difficult. 6.5 to 6.85 on a dry mater basis is a realistic goal.

Average Daily Gain - EPDs for feedlot ADG do not exist, but there is a highly positive correlation between yearling weight and postweaning ADG.

There are many factors that affect ADG. Good cattle should gain over 3#/d.

Carcass Weight - We may find that a steer calf that will produce a carcass which will fit the .25 inch trim specifications will have a live weight similar to his mother at a 5-6 condition score.

Premium prices have been offered for 550-700# carcasses for several months. 700-850# carcasses have received a \$2-3 dock. Lighter and heavier carcasses have received larger penalties.

Ribeye area - Ultrasound ribeye area can be

used to select sires with the desired amount of REA. REA on a carcass weight basis is used in USDA Yield Grade formula (600# carcass needs an 11 square inch ribeye), but the retail market suggests that 14 square inches should be used as a maximum.

Fat over the Ribeye - Although FOE is affected by genetics, the feeder determines how much subcutaneous fat is on cattle at slaughter. Some cattle deposit fat at heavier weights because of frame size/mature weight, but any animal can be fed to the obese state or slaughtered with little fat.

The post-slaughter segments of the beef industry desire little FOE (<.3"), but feedyards are still populated with very fat cattle. The Beef Quality Audit listed the average FOE at about .6", but I saw many cattle over .8" FOE during a trip to Texas in March. The Beef Quality Audit reported 21% Yield Grades 4 and 5. What happened to the move to leanness?

Marbling - Marbling score is the most important trait affecting product value, highly heritable, but almost impossible to measure in a live animal. Ultrasound may change this in the near future.

The retail and white table markets are still USDA Quality Grade driven. Choice is still in demand, but becoming harder to find. Chicago Mercantile Exchange contract specifications for live cattle include 55% Choice and 63% Dressing Percentage. The Beef Quality Audit reported that 45% of the carcasses graded less than Choice.

NOW THAT I HAVE THIS DATA, WHAT DO I DO WITH IT?

The feedyard performance data that you obtain has limited use. Feed efficiency, and to some degree feed intake and ADG, is negatively affected by increasing time on feed and the resulting increase in weight and fatness. **Most feeders feed cattle to an excessive level of fatness.** Why? Custom feeders are paid for feed sales. The longer the cattle are on feed, the more money they make. The value of feedyard-owned cattle is determined by dressing percentage and indicators of fat if the cattle are sold on a live basis. A Yield Grade 3.9 is worth as much

as(or more than) a Yield Grade 1.5. This could change if cattle are sold on a value based cutout system and/or the proposed changes to the Yield Grading System are adopted. Some feedyard managers put cattle on the show list (sale list), based on old terms like full brisket, heavy flank, etc.. Other factors affecting slaughter date include dry matter feed intake. Some feedyards continue to feed cattle until dry matter intake drops below 1.7% of body weight. Cattle have become very inefficient by this point and are very fat. Feedlot performance traits should be measured to a slaughter endpoint designated to fit the industry needs. Retaining ownership of the cattle and the authority to decide when to slaughter the cattle will improve the quality of the performance data acquired from the feeder. Feeders are honest people doing a great job with the existing marketing system. They are in the business to make money, and are only doing what they can to maximize their profit within the law.

Most modern bulls have adequate genetic ability to perform at acceptable levels. Therefore their progeny should meet minimum parameters in the feedyard. In the Texas A&M Ranch to Rail program, 72% of the cattle that did not meet the minimum standards set by Dr. John McNeill did not meet feedyard performance standards. However, the lower level of growth performance could have been caused by health problems. Respiratory problems during the first 30 days and digestive problems later in the feeding period can severely cloud the issue of feedlot performance evaluation.

Researchers at Oklahoma State University reported that steers grazing wheat prior to feedyard placement had higher ADG than cattle backgrounded using other methods and direct placement cattle. Also, they reported that backgrounded cattle had higher feedyard ADG than direct placements, but that prolonged grazing on native summer grasses caused a decrease in feedyard ADG verses cattle grazed for a short time on native pasture. My point is that feedyard gain is affected by previous management, which should be considered when evaluating feedlot performance data.

How do I use progeny carcass data to make improvement by management changes? The USDA Yield Grade is controlled by the feeder. Fat over the ribeye is the most important factor affecting YG. If the average FOE for your cattle is over .4", you should find another feeder or communicate to the feeder that they should be slaughtered earlier. Most cattle have at least average muscle, based on USDA YG standards, if slaughtered at the optimum weight and fat. REA is highly heritable, and can be measured by ultrasound in the live animal. Thus sires can be selected to increase muscle by using ultrasound measurements and Expected Progeny Differences if the bull is an Angus or Canadian Charolais. Many other breed associations are presently collecting data, and REA EPDs for those breeds should be available soon.

Before you determine if your average carcass weight needs attention, adjust for FOE. If your cattle have a carcass weight of 800 pounds and FOE of .8" then little to no adjustment would be needed. However, if your cattle had .8" FOE and 600 pound carcass weight, I would suggest increasing the size of your cattle. Angus, Simmental and the Canadian Charolais have Carcass Weight EPDs

Many feeders still believe that there is a close relationship between age and marbling score, and FOE and marbling score. These relationships have not been well documented with the cattle in the current population. How do we know that the marbling score in a carcass at .8" FOE was not there at .3" FOE? Angus, Simmental and Canadian Charolais currently have Marbling EPDs listed in their sire summary. Most other breeds are presently collecting carcass data and will have this information available within the next two years.

Wilson and others at Iowa State University used field data from the American Angus Association and analyzed data from 10,733 carcasses slaughtered between 1974 and 1992 and sired by 699 bulls born from 1967 to 1989. They adjusted the records to an age-constant basis, and reported heritabilities: marbling=.26, carcass weight=.31, ribeye area=.32. Trait correlations indicated that reduction in age-constant external fat

can be made without reducing marbling. Bertrand and others at the University of Georgia concluded that in the Angus breed that a threshold number of days on feed may be necessary for genetic differences in marbling to be expressed and that routine selection can change carcass quality while holding FOE constant. Additional research is needed to identify this threshold or FOE for different breeds of cattle after which appreciable marbling is not deposited.

RECOMMENDATIONS

1. Decide which target to hit. For which market shall you produce cattle: (a) White Table Cloth (b) Retail (c) Lean ?
2. Your herd must have a high reproductive rate (weaning rate over 85%; weaning rate = females exposed / calves weaned) in order to have the flexibility to change genotype to match product goals.
3. Selection will be used via the sire.
 - a. If producing replacement heifers, select sires that maintain mature weight, milk level and reproductive performance required by environment. Breed lower 30-40% of cows to terminal bulls selected for carcass weight, REA, marbling score using EPDs.
 - b. If using a terminal breeding system, major selection pressure may be placed on postweaning performance and carcass traits. Purchase performance tested bulls that gain over 2.5#/day on a diet that is sufficient to segregate differences in performance but will not cause negative side effects. Sexed semen will facilitate rapid improvement.
4. Selection for weaning weight will probably provide your gene pool with adequate postweaning performance, so put most selection pressure on marbling score unless you are targeting the Lean market.

5. If cattle are maintained healthy, most modern cattle have adequate feedyard performance.
Retain partial ownership in your cattle with the feeder. Maintain authority to decide when some or all cattle will be slaughtered.
6. Use carcass data to **CULL** females that do not meet certain criteria, not to select the best females.
7. Precondition calves for 30 days if you are retaining ownership.