PERFORMANCE REPORT

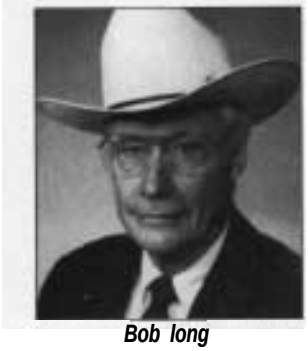
BEEF LOGIC *by Bob Long*

USDA Feeder Grades Do a Good Job

Feeder cattle are not created equal. They vary by virtue of differences in weight, age, sex, color, breed, genetic potential for growth, genetic potential for carcass characteristics, previous treatment, condition, location, and price.

This tremendous variation creates serious problems in acquisition of cattle groups of predictable and uniform performance.

A further complication is the failure of the cattle industry to adopt a standard description or universal grading system. Terms such as Okie #1, 1 1/2 and 2, crossbreds, exotics, natives and "a little ear" add to this confusion. Unfortunately, unless you have previously done business with the person using the above terms it is impossible to know the meaning of the description.



Bob long

Another difficulty in evaluating feeder cattle is the industry's emphasis on breed. The fact that a feeder steer is white, black or red with a white face does not tell enough about him and the old maxim "there is more difference within breeds than between breeds" certainly holds true.

An additional problem in evaluating feeders is the use of weight. Obviously, weight times the price established determines cost of purchase; but the fact that a steer weighs 600 pounds is of little value in predicting his performance; "6 weight" cattle may be fat or lean, large or small framed, heavy or light muscled, healthy or unthrifty, and old or young.

A substantial improvement in describing and evaluating feeder cattle can be realized if the industry would use USDA feeder grades accurately and as they're intended to be used. This system is designed to be used on cattle of similar age and sex. It's a two-pronged system based on frame size and muscling.

In the case of frame size it is known that skeletal growth in young animals takes priority over fat deposition and even maximum muscle growth. Therefore, regardless of plane of nutrition, comparing animals of the same age and sex, frame size has probably increased according to genetic potential and is a good measure of what the mature frame size will be. When compared at the same age, the larger the frame the larger it will be at maturity and the longer it will take to reach that point.

Also, it is a fact that animals must approach physiological maturity before they deposit enough fat or marbling in the muscle to qualify for the USDA Choice quality grade. This is the basic reason for the USDA feeder grades which separate cattle into large, medium and small frame sizes. If cattle of the same age and same previous treatment are sorted into uniform frame size groups and fed the same typical high energy diet, each frame size will reach the Choice grade after a different length of time on feed. The larger the frame size the longer the feeding period required to reach slaughter condition.

Further, all cattle within such a uniform frame size group will reach slaughter condition or a uniform degree of marbling at the same time. Therefore, if cattle are not sorted for frame size going into the feedyard there is no way to market the group at the right time. Some unsorted cattle will "grade" and some will not; some will be overdone and some will not be ready to process.

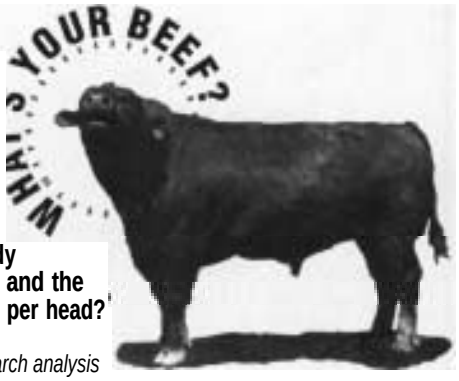
The second portion of the USDA feeder grading system is a score for muscling. This system sorts the cattle into three groups called 1,2 and 3. The number 1 refers to heavy muscling. Number 2 refers to medium and 3 refers to light muscling. Unfortunately, USDA refers to this muscle score as thickness, due to objections from certain breeders, but muscle is what should be used. This muscle score is completely divorced from frame size so the three muscle groups within eachframe size give a total of nine feeder grades as follows:

Large Frame #1	**Medium Frame #1**	**Small Frame #1**
Large Frame #2	**Medium Frame #2**	**Small Frame #2**
Large Frame #3	**Medium Frame #3**	**Small Frame #3**

Use of muscle score is necessary because muscling predicts USDA yield grade at slaughter. Fortunately, heavier muscled cattle not only have largerribeyes but are trimmer and leaner at the same degree of marbling. Therefore, sorting cattle for muscling gives a group of carcasses uniform in yield grade.

In summary, sorting cattle of the same age and sex into uniform frame size groups, treating them alike and slaughtering them at the same time will result in a similar quality grade. However, if different degrees of muscling are within a frame size group the cattle will vary in yield grade with the heavier muscled cattle being superior.

My next column will further explore advantages and disadvantages of USDA grading system from the standpoint of slaughter weight, carcass weight and length of feeding period required.



Are other important genetic traits and production considerations being overlooked in the industry-wide effort to remedy beef quality defects and the infamous $280 loss per head?

Following is a research analysis from Bryan Melton, visiting professor of economics and animal science at Iowa State University, Ames. Melton presented a research paper titled, "Relative Genetic Emphasis for Profitable Beef Production" at the National Cattleman's Association mid-year meeting in Denver, which addressed our question.

Since the completion of the 1992 National Beef Quality Audit, sponsored by the National Cattlemen's Association (NCA), considerable interest has focused on the quality characteristics of beef and its by-products.

Given the finding of an estimated $280 loss for every steer and heifer processed in the United States due to quality "defects" the intensity of interest is understandable, if not potentially exaggerated.

The most disconcerting aspects of the National Beef Quality Audit aren't the results themselves, but the long-term decisions industry members may make bass on their misinterpretations of

the results. There's already evidence that some beef producers (and researchers) are changing their priorities in an effort to remedy quality defects and thereby capture the perceived economic benefit.

In doing so, these producers must divert at least some of their attention from other characteristics (or traits) and production considerations that are equally or more economically important — potentially to the long-run economic detriment of their own farming or ranching operations and the beef industry at large.

One man's trash is another's treasure

People of different age, education, ethnicity or socio-economic status have different preferences regarding product quality. In some markets price effect of a qualitative genetic change is small or even negative, while in other markets it's large.

Beef producers are endowed with a resource bundle, including both genetics and variable or fixed inputs, that is unique. The profit effect of a genetic techonological change may differ dramatically from one producer to another, depending upon the level and mix of resources applied to capitalizing on the genetic change.

For example, a producer with surplus feed would realize much less economic benefit from improved feed efficiency than one who is feed deficit. Economic values are thus most appropriate to individuals and are themselves individualized values.

What's good for industry may not he good for the producer

For the industry to achieve the genetic changes that are in its long-run, overall best interest, the cow-calf producer must be differentially compensated for the efforts and cost required. Current structures don't achieve this. The emphasis in selection for a cow-calf producer is skewed toward re-weaning traits.

Recent strategic alliance programs have attempted to address this issue, but only in a limited (and somewhat idealized) fashion. Considerably more research and effort will be required in the future to address this issue in the context of the broader beef industry.

Results of our Iowa State University study also highlight potential flaws in the National Beef Quality Audit and its interpretation. The relatively small values and selection weights associated with consumption characteristics, and especially those reflecting consumer judgments of quality, seem to contradict the 1992 National Beef Quality Audit's finding of an average loss of $280 per head attributed to "quality defects."

Many have erroneously interpreted this amount, representing nearly 25 percent of total slaughter value, to be the amount of profits foregone by the beef industry because of carcass quality. In fact, the losses estimated in the 1992 National Beef Quality Audit don't correspond to profits. Instead, they're more indicative of foregone revenues. They don't take into account costs incurred by industry to capture these additional revenues and thereby arrive at an estimate of net profit to potentially be lost or gained in the industry.

For example, injection-site blemishes are estimated to account for a loss of $1.74 per head. While unnecessary or poorly placed injections occur, the study doesn't consider the necessary injections that may save an animal's life or enhance their performance, or the cost (in terms of dead, sick, or poor performing animals) borne by the industry if injections weren't given.

In other words, if the opportunity cost of an action taken to increase revenues exceeds the revenues to be gained, the producer and the industry will be worse off.

Economic view of multi-trait selection

Animal breeders have long recognized the inherent deficiencies of the "single characteristic" model of genetics in animal production. In practice, commercial and seedstock producers are concerned with many characteristics. However, their efforts to achieve simultaneous changes in multiple characteristics are often hampered by differences in heritabiliiy of the traits and the genetic correlations that exist between them.

The choice of characteristics to be valued is even more difficult. Each different observation of an animal may be viewed as measuring a characteristic. However, if you take this view literally the number of possible characteristics approaches infinity and quickly becomes so large as to be practically meaningless.

For example, the weight of an animal at 200 days of age is typically not the same as its weight at 210 days of age. Hence, the two might be viewed as different characteristics, although as a practical matter they're more likely to be different observations of the same (underlying) genetic characteristic.

Further evidence is provided for the consumer characteristic of taste and tenderness. Iowa State University's study shows that meat tenderness, flavor and juiciness explain about 85 percent of the variance in consumer judgments of meat acceptability. Furthermore, a 1 percent increase in tenderness increases the overall acceptability of the meat by .4 percent.

This finding is in general agreement with other studies which have found tenderness to be a major factor influencing consumer acceptability of meat. However, this study also demonstrates that consumer judgments regarding meat acceptability don't explain the majority of price differences. In fact, neither overall acceptability nor a combination of tenderness, flavor and juiciness explained the more than 28 percent variance in meat price.

Other factors, such as price of substitutes, income, or socio-economic concerns must account for much of the difference in meat price. These can't be remedied nor changed by the beef producer.

The low correlation between meat quality characteristics and price support the ISU study's contention that such characteristics shouldn't receive large emphasis in the breeding program of a profit-maximizing operation or industry.

Producers must judge consumers' true preferences by what they'll pay for, not what they say. Price differences don't sup port major emphasis being devoted to many meat quality characteristics.

Alternatives to breeding exist as a means to remedy beef tenderness problems. These include both mechanical and biochemical means at virtually every stage of production.

Iowa State's research results suggest the industry average cost of remedying tenderness problems (in the estimated 15 percent of the carcass exhibiting these problems) would be 90 cents to $1.35 per head. However, the National Beef Quality Audit suggests the value of remedy is $2.89 per head. If the revenues foregone by a profit maximizing industry or an operation in that industry, due to tenderness problems were $2.89 per head, it's rational for that operation to expend 90 cents to $1.35 per head to remedy it because a net profit of $1.55 to $2 per year would result.

Given these existing alternatives aren't widely employed, we conclude the potential revenue to be gained from improved tenderness is less than $2.89 per head, and in fact, is less than $1.35 per head.

Iowa State study raises more questions than answers

In a larger sense that may be the study's greatest contribution to the industry. It recognizes the U.S. beef industry is not one-dimensional and, as a result, there's not a single-characteristic panacea to the problems confronting the industry.

The correct solution requires a balance that can't be achieved by a quick-fix nor by remedies that fail to recognize the inherent economic consequences.

WE WELCOME YOUR INPUT!

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