Beef Logic

by Bob Long

Ultrasound — not a foolproof answer

An earlier "Beef Logic" column devoted to the improvement of carcass quality and cutability stated, "Recent technological advances dictate the use of ultrasound as a selection tool in progressive breeding program." However, conversation with breeders, review of ads in breed journals and study of sale catalogs suggest that the way ultrasound is sometimes used is not what this author had in mind.

The above recommendation to use ultrasound was immediately followed by the following statements.

Positive results from the use of ultrasound depend on the following:

1. Modern, real-time ultrasound equipment must be used.

Obviously, scientific instrumentation requires the use of up-to-date, operational equipment that has been properly adjusted and calibrated by a qualified technician.

2. Measurements and interpretation must be handled bv certified personnel.

Beef Improvement Federation (BIF) has a rigorous certification program which identifies qualified technicians and periodically checks proficiency.

3. The cattle compared must be of the same age and sex; and have been exposed to the same environment.

As in any performance measurement, comparisons must be made only among animals from a proper contemporary group. For example, the ultrasound data collected from a group of herd bulls with differences in age, nutrition and management is worthless. Likewise, it's a waste of time and money to scan a cow herd with great variation in age, reproductive status and stage of lactation. Equally misleading is unadjusted data from any single individual. Yet examination of any breed journal is apt to reveal an ad listing ultrasound composition data on a certain animal with no information as to how, when, where or by whom it was taken. Such data is not only meaningless but if presented by a breeder who knows better becomes down right fraudulent.

4. The plane of nutrition must have been adequate to allow genetic differences to be expressed.

The goal of measuring body composition is to determine differences in marbling, muscularity and fatness among individuals which have been fed and managed as if for slaughter. A low plane of nutrition results in differences in fatness too small to measure and marbling may be nonexistent. Therefore, its composition of bulls that have spent a post weaning gain test on pasture or a low plane of nutrition.

5. Ribeye area must be associated with live weight in order to measure degree of muscling.

The development of epected pogeny differences (EPDs) is one of the most important advancements in animal breeding technology. It's encouraging to observe the increase in use of carcass EPDs by beef cattle breeders.

However, a major concern of this author with the use of current EPDs as a tool for carcass improvement is the ribeye area. This measure is taken from the carcass in square inches and adjusted for age. However, the size of the ribeye of a carcass offers little information unless its unadjusted and associated with actual carcass weight.

Many breeders incorrectly assume that using a bull with a positive EPD for ribeye area will result in heavier muscling and improved cutability. Since the size of ribeye alone tells little about the composition of a carcass, its logical to conclude that EPDs for ribeye should be based on area per unit of weight not size of ribeye alone or at least some measure of muscle to bone ratio.

The accuracy of ultrasound is of concern to some scentists and breeders particularly in the determination of marbling. Be informed that ultrasound researchers do not check accuracy of marbling measurement by comparing ultrasound estimates with marbling score but with percent fat content of the actual Lonqissimus Dorsi muscle from the carcass in question.

Doyle Wilson of Iowa State reports that 70 percent of ultrasound estimates are within 1 percent of actual. This means that within a contemporary group ultrasound can correctly separate the top one-third from the bottom one-third allowing culling of the lower end and an increase in average marbling of the group or herd.

This inability to precisely measure individual animals with confidence dictates the necessity of progeny test on sires before extensive use. Further, ultrasound data is not currently used in the computation of carcass EPDs so use it with caution.

We Welcome Your Input!

Our Beef improvement section has been expanded to include more information for today's performance-minded breeder. Both "Beef Logic" by Bob Long and the "What's Your Beef?" columns serve as a forum for Angus breeders and industry experts to express their opinions on current issues and topics of breed improvement and performance programs.

Send or fax your comments to:
Editor, Angus Journal
3201 Frederick Blvd.
St. Joseph, MO 64506
Fax (816) 233-6575
E-mail: journal@angus.org