

Background & Guidelines on Ultrasound

Editor's Note: *Forty years ago the American Simmental Association was formed on a rock-solid foundation of performance principles, focusing primarily on weaning and yearling weights. Later, it became necessary to address the*

problem of calving ease and currently, the emphasis has moved into the realm of carcass value. One of the primary tools used in determination of carcass genetic value is ultrasound.

By Dan Rieder and Dr. Wade Shafer

In the modern world of the beef industry, ultrasound measurements provide an effective means of improving accuracy of carcass EPDs. If ultrasound data are not submitted to ASA, however, it is essentially of no value for genetic evaluation and breed improvement. "If you are going to spend money to ultrasound your herd, you might as well get your data collected in the manner required for submission to the ASA," said Wade Shafer, ASA's Director of Performance Programs.

The ASA requires that all ultrasound data be collected by an Ultrasound Guidelines Association (UGA) certified scanner and interpreted by a UGA certified reader. That procedure can be easily accomplished by selecting a UGA certified scanner, who will then submit their images to a centralized processing lab for interpretation (see accompanied green section for lab options). The lab then forwards the results to ASA. ASA also accepts data directly from technicians who are UGA-certified to both scan and interpret.

If you wish to submit your data through a centralized lab, go to the ASA web site www.simmental.org and follow the link: **UGA Certified Scanners** for a list of qualified technicians. If you plan to submit your data directly to ASA, follow the link: **UGA Certified Interpreters**. Please note that if you submit data directly to ASA, your technician must appear on both lists.

Submission Requirements

Your technician will require an ASA generated list (barnsheet) of the animals you plan to have processed prior to scanning them. Barnsheets can be obtained by logging onto your Herdbook account and clicking on the barnsheet icon (under the My Herd category).

Several options are then available to sort the animals you plan to have scanned onto your barnsheet. When the appropriate ani-

mals to be scanned are sorted, you can print a copy of the barnsheet for yourself as well as electronically submit a copy to the processing lab of your choice (see descriptions below). Animals must be on file with the ASA to appear on your barnsheet. Ultrasound data on ET calves are now included in the genetic evaluation. Animals must be between 300 and 440 days of age when they are scanned for their data to be included in the genetic evaluation.

Four Certified Labs

There are four qualified laboratories available to interpret ultrasound data. A brief alphabetical summary of each, taken from lab websites and promotional brochures, is provided below.

BioTronics, Inc.

Address: 1606 Golden Aspen Drive, Suite 104, Ames, IA 50010
Telephone: 515-233-4161
Website: biotronics-inc.com

BioTronics has been serving the beef cattle industry with ultrasound technologies to improve composition traits since 1998, and provides Ultrasound Guidelines Council (UGC) software for five different scanners. Several times each year, Biotronics hosts intensive hands-on training programs in the use of ultrasound scanning of cattle for the seedstock and feedlot industries.

BioTronics' affirms that their programs are based upon the research and technology conducted and developed by Iowa State University and backed up by independent and significant studies from other research institutions.

International Livestock Image Analysis

Address: 4594 Union Road, Harrison, AR 72601
Telephone: 870-743-3440
Website: designergenesusa.com

International Livestock Image Analysis was founded in 1995, to meet the unique needs of ranchers, leading beef industry companies and feedlots. Website information describes the company as a "the world leader in beef image analysis software, training and support with deep roots in the ranching community."

The company offers a large selection of the latest and most sophisticated image analysis equipment, supplies and peripherals available. It has released new Automated Interpretation Ultrasound Software and holds the first Certification for Ultrasound using this software.

Getting the most out of ultrasound data

"Since the four laboratories listed below meet UGC requirements, and there is no scientific evidence to support that one lab is better than another in interpreting scans, the decision about which lab to utilize boils down to wherever you feel most comfortable. As a consumer, you may want to check with your field technician or contact the labs directly to develop insight about their services (e.g., expected time to get results to the ASA).

As the companion article explains, there are a few requirements that must be met for your ultrasound data to be included in ASA's genetic evaluation. Meeting the requirements for inclusion is just one step in harvesting its value, however. Using the results properly is tantamount to making the investment pay off for you. I have pulled a couple paragraphs from a previous article to reiterate how best to utilize ultrasound data:

I won't beat around the bush, focus on carcass EPDs! I realize that many gauge the carcass merit of a herd or an animal on ultrasound measurements; though common, this is a misguided practice. Just as with measurements of other traits, ultrasound

scans are greatly influenced by non-genetic factors—including the technician and ultrasound machine used to take the measurements. To top it off, though related, ultrasound and carcass traits are not the same. Because of this, it is certainly possible for a sire's offspring to be great for ultrasound marbling and poor for carcass marbling, for example.

Though ultrasound scanning is a valuable aid in improving carcass traits, the data must be melded into an EPD to harness its value; using raw, adjusted or any ratio format when dealing with ultrasound data is a definite mistake. By incorporating ultrasound information into an EPD, non-genetic factors are removed and the measurement is converted from ultrasound to carcass. Besides achieving these critical tasks, EPDs incorporate all available information on an animal's parents and contemporaries. Simply put, an EPD is the best possible estimate of an animal's genetic merit—it's silly to use anything else.

In a nutshell, make sure your ultrasound data meets the requirements to be included in genetic evaluation and use the resulting EPDs for decision making. ★

National CUP Lab & Technology Center

Address: 413 Kellogg, Box 627, Ames, IA 50010-0627

Telephone: 515-232-9442

Website: cuplab.com

The National Centralized Ultrasound Processing (CUP) Lab and Technology Center is described as "the largest third-party, unbiased interpreter of ultrasound images in the world." This Lab blends applied animal science with the latest developments in computer and database technology, and is managed by people dedicated to the future of the livestock industry," according to its website.

The National CUP Lab, which first began accepting images in 1998, embraces new technology to serve its customers more effectively, cooperating with breed associations and universities in ongoing research to better describe carcass composition.

UltraInsights Processing Lab, Inc.

Address: 1767 210th Ave, Diagonal, IA 50845

Telephone: 641-464-2310

Website: uicuplab.com

UltraInsights owners are among the few technicians involved with Centralized Ultrasound Processing since 1998. Over the years, UltraInsights has been involved in most aspects of CUP, including training of lab and field technicians, collection of ultrasound research data, and working with technicians, breeders and breed associations.

UltraInsights' lab interpretations have been continually cross-checked against actual carcass data, and their lab technicians have attained a high degree of image interpretation accuracy when compared with actual carcass data. A significant number of staff members are certified as field technicians.

