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Carcass Ultrasound 101

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The Value of Carcass Ultrasound in Heifers

The beef trade press has done a tremendous job of polling and listening to bull buyers across the land. Seedstock producers have a much better idea of what will get them to nod their head at an auction than a decade ago. In 2003, *The Western Livestock Journal* reported that carcass traits influenced over half (56%) of their readership's bull buying decisions and 3 out of 4 polled were willing to drive up to 499 miles to find their next herd sire. We can argue and guess what those poll questions would produce in 2009, but the fact remains, many bull buyers look at carcass information and are willing to travel to find what they want. If the poll was repeated today, I think an entirely new question should be: "Do the carcass attributes of a bull's mother influence your buying decisions?"

Most breed associations have or will be moving genetic evaluations from a "sire model" to an "animal model" within the next year. In the most basic terms, this means that EPDs will now be determined by performance and carcass information from the sire and dam, instead of just the sire. As a result, collecting ultrasound information on purebred females in the herd has never been more important. Regardless of the size and scope of your operation, carcass ultrasound data from females is currently the "genetic fast lane" to help you reach your end product goals. Fortunately, there are a number of ways to use the information to your herd's benefit.

Beef Improvement Federation (BIF) Guidelines recommend that heifers be scanned between 320-410 days of age. However, each breed association is different with many accepting ultrasound data from heifers older than 14 months of age. It's important to schedule heifer scanning within the acceptable window of your breed association(s) and at an appropriate time for your operation. Many seedstock operations scan bulls early to satisfy sale catalog deadlines and bull buyer demands; heifers are simply scanned later. This allows the operation to focus labor resources on bull sales and give heifers additional time to develop. Commercial operations utilizing ultrasound technology should schedule scanning at least 30 days prior to breeding. This allows ample time to receive the information, make culling and/or breeding decisions, and order semen or buy bulls accordingly.

The heifer ultrasound contemporary group can be analyzed an entirely different way than bull ultrasound data. For bulls, disappointing results are often too late. The dollar investment in developing a bull forces most producers to sell them anyway. There is absolutely no genetic progress realized if a producer only scans bulls and does not use the information to go back and

cull females. Given this scenario, a producer would be forced to cull a bred cow based on the poor carcass performance of one male progeny; a difficult economic decision at best. If one assumes a heifer will have a bull calf at age two, the only carcass information available on the cow by the time she's three will be the 50% she attributed to the bull calf. By the time the next genetic evaluation (which determines her new Carcass EPDs) is published, she should be nursing her second calf and be cycling back for her third. In most cases, the cow would be a bred 4-5 year-old before mistakes can be noticed, let alone fixed. In short, when a retained heifer finally becomes profitable (beyond age 5) you may be inclined to cull her for poor carcass performance.

The alternative is to scan heifers prior to breeding. Heifer ultrasound contemporaries have a distinct advantage over bulls due to the lack of aggression or libido due to the effects of testosterone. It's very difficult to determine if testosterone is detrimental to a bull's scan data, but bulls in a low-stress environment have been known to scan better than their flushmates in a confined bull test setting. Some evidence suggests scanning a heifer during her heat cycle may also impact scan results due to the added stress and activity of estrus, but no targeted research exists. In comparison, 3 days of stress due to standing estrus should have far less impact than bulls that fight or run fences every day in a pen. Outside of this, the disadvantages of scanning are the same for both sexes...added stress, time, and labor.

If a heifer scans poorly, some profitable options are still available to the producer. She can be immediately sent to the feedlot and be marketed as USDA Grade "A" beef at 15-20 months of age, still under the age restrictions for exported beef products. Producers can also assess her carcass merit and find a bull that best compliments her shortcomings. In either case, genetic progress is much faster, and a more uniform calf crop should be evident after the first calves reach the rail. Many commercial producers develop "threshold trait levels" and cull anything that falls outside an acceptable window. Genetic antagonisms between reproductive and carcass traits must be closely monitored. For example, setting a fat thickness threshold of <0.35 inches may actually cull females that offer the highest rebreeding rate. Cows must still be suited to their environment regardless of the size of their ribeye or potential to grade Choice.

The last 12 months have brought significant swings in input prices as well as the demand for beef worldwide. The global economy has caused beef producers to cut expenses in order to stay profitable. Unfortunately, some operators decided not to invest \$15-20 to scan each heifer in 2009. While a decline in heifer scanning is understandable given economic conditions, the above scenarios should help illustrate the immense value in heifer ultrasound data. When viewed as a marketing tool, ultrasound information helps seedstock producers sell bulls. When viewed as a tool to enhance profitability, ultrasound data on heifers ensures you can produce a bull that somebody wants.