CATTLE PERFORMANCEMENT ENHANCEMENT COMPANY

The Sortin' Stick

May 2005

Volume 4 Issue 1

2004 NATIONAL ANGUS CARCASS CHALLENGE
OFFICIAL WINNERS

Forty purebred Angus heifers recently won grand champion honors in the 2004 National Angus Carcass Challenge. Stan and Brad Fansher had them fed by Sam Hands at Triangle H Grain & Cattle Co., all of Garden City, Kan.

No one should be surprised that these heifers won, since their sisters won reserve champion honors in the 2003 NACC. These heifers were selected from a group of 150 by ultrasound. The tool is available to anyone, but in this case it was in the hands of its developer, John Brethour of the Kansas State University Ag Research Center in Hays, Kan. John is also part owner of CPEC (Cattle Performance Enhancement Co.), who has the exclusive marketing rights to the technology from Kansas State University. This is the same technology John used to win the Best of the Breed contest in 2002.

NACC is an annual beef value contest, sponsored in 2004 by CAB, Drovers magazine, Merial SureHealth, Farnam Co., John Deere FoodOrigins and the American Angus Association. Groups of at least 40 steers or heifers sired by registered Angus bulls have to be fed in CAB-licensed feedlots, according to NACC coordinator Rod Schoenbine. Winners of the contest were announced Jan. 15th in Denver at the National Western Stock Show. The top prize of $5000 and a new John Deere 4x4 Gator was awarded to Fansher Angus Ranch.

The grand champions in the heifer division and the third place steers all came from the Darnall Ranch, with its large commercial Angus herd and CAB-licensed feedlot near Harrisburg, Neb. All the cattle were home-raised with similar genetics across the board, all tracing back to the Performance Breeders on both the cow and bull side.

CPEC

NACC WINNERS ANNOUNCED

Ultrasound sorting 80 days pre-harvest is routine at Darnall's 20,000 head feedlot, so the scans were taken into account as cattle were grouped for the NACC. Nothing special was done to enhance grade. "We aggressively implant everything", Gary Darnall says, with the final one being a trenbolone acetate (TBA) compound**.** Darnall Feedlot is a licensed user of the CPEC technology.

Fifth place in both the steer and heifer categories came from James Fuqua's Lazy U Ranch, Quanah, Texas, with cattle being fed at Flint Rock Feeders, Gruver, Texas. James operates a 500 cow Angus seed stock operation and the U Lazy 2 Cattle Co. network of allied customers. He is part owner of Flint Rock Feeders, who is a licensed user of the CPEC technology. Both entries were sorted using the patented CPEC software.

Other winners were Woodstone Angus Ranch, champion steers; Jimmy and Kenny Thomas, reserve champion steers; and Mason Fleenor, fourth place steers. Deller/Pluhar, reserve champion heifers; Jimmy and Kenny Thomas, third place heifers and Mark Feller, fourth place heifers.

PROGRESSION IN QUALITY GRADE WITH EXTENDED FEEDING
KSU Ag Research Center-Hays 2005 Roundup
John R. Brethour

There is considerable controversy whether cattle continue to attain higher quality grade with extended feeding. Many authorities contend that they reach a plateau after a certain duration of the finishing phase and grades do not improve after that point.

We divided 46 predominately Angus, 14-month old heifers into two equal groups based on ultrasound marbling and backfat estimates and initial weight. One group was harvested on May 6th and the second fed six weeks longer. They received a high energy ration comprised primarily of rolled milo during this period. Full carcass data was obtained on both groups.

The results indicate that most feeders would consider the first group ready for harvest because they graded 78 percent Choice. However, there was a significant increase ($p<.01$) in marbling score with extended feeding and that group graded 96 percent USDA Choice. There was an even larger difference in the proportion grading Premium Choice (Average Choice and higher; equivalent to Certified Angus Beef) which doubled from 35 to 70 percent.

Unsurprisingly, the heifers got fatter with 42 days extra feeding and backfat thickness increased from 0.55 to 0.69 inches ($p<.01$). This resulted in all but two carcasses in the second group grading YG 3 or YG 4. Yield grades in the first slaughter group were very desirable because 61 percent were YG 2.

Several years ago we used serial ultrasound estimates to develop a model of the increase in marbling score as a function of days on feed. That model indicated that marbling of cattle with higher initial marbling scores increased faster than those with low marbling. The results of this study appear to validate that model which projected a 42 day marbling increase from 5.95 (average marbling score of first slaughter group) to 6.71 (compared to the observed average for the second group of 6.58).

This study concludes that cattle with genetic marbling potential continue to increase in marbling and attain higher quality grades when fed longer.

Table 1. Increase in grade over 42 day extended feeding period. 23 Hfrs per slaughter date. Divided equally based on live ultrasound marbling estimates.	Group 1 Initial Harvest May 6	Group 2 Extended Harvest June 17 42 days later
Average initial wt.	1042	1056
Average initial ultrasound marbling score*	5.47	5.53
Average slaughter weight	1042	1165
Average Carcass weight	675	747
Average Backfat thickness, in.	0.55	0.69
Average Ribeye area, sq. in.	12.41	13.18
Percent Choice and higher	78%	96%
Percent Premium Choice and higher	35%	70%
Percent Prime	13%	17%
Average Marbling Score**	5.95	6.58
Yield Grades		
YG 2	61%	8%
YG 3	39%	69%
YG 4		22%

*Marbling Score: 4.00– 4.99, slight amount, Select; 5.00– 5.99, small amount, Low Choice

**Marbling score projection over 42 days from ARCH marbling model is 6.71 (from an initial value of 5.95)

John Brethour's Career

_The Kansas State University Agricultural Research Center—Hays recognized John Brethour for his 47 years of dedicated service to Kansans as a beef cattle scientist at its annual appreciation dinner on April 12, 2005.

John has devoted his entire career to advancing the science of beef cattle production and helping the cattle industry of Kansas remain viable and competitive. Many of his accomplishments have put this research center and KSU on the map nationally and internationally.

The crowning achievement of his long and productive career is the characterization of muscle tissue with ultrasound and applying the results to the precision feeding of beef cattle. The computer software, for which he holds U.S. Patents, and the interpretive techniques he developed to accurately establish optimum days on feed to reach a specific carcass quality grade have set the standard for this technology.

John was honored in 2004 by Beef Magazine when he was selected as one of 40 individuals who have made notable contributions to the U.S. Beef industry. This recognition was associated with the 40-year anniversary of Beef Magazine.

John's life's work has revolved around beef cattle. His phenomenal memory and analytical skills allowed him to retain the lessons of life well. As a result, his command and understanding of the interrelationships among the science, business, and economics of the beef cattle industry are unique. In addition, his research and astute observation powers have given him a keen understanding of the interactions among the various phases of the beef production cycle from conception to slaughter. That has enabled him to help producers, who participate in only one or two phases, to manage their operations to capitalize on opportunities unique to those phases.

John is one of those rare individuals who never lost the zeal for learning and never developed resistance to change. His enthusiasm for new ideas is just as intense today as when he finished graduate school. That is one of the keys, along with his superior intellect, to his success and continuing contributions, even at age 71 when most people have long since retired. While his training is in beef cattle science, with an emphasis on ruminant nutrition, he has never been intimidated by the challenges of venturing into new fields of inquiry in order to pursue a multidisciplinary approach to problem solving and to develop new technology that would benefit the beef industry. He invests whatever effort is required in self study and communication with recognized experts to become competent in these fields. He is a voracious reader and comprehends and retains what he reads. As a result, John has truly been a

John Brethour's Career

pioneer in applying the supporting basic scientific disciplines of such diverse fields as linear programming, computer science, chemistry, physics, medicine, mathematical modeling, statistics, ultrasonography, etc., to beef cattle nutrition and reproduction.

The proof of John's success and recent impact comes from the beef industry itself. John used ultrasound to manage and select six steers that placed first in the 1999 Western Stock Show carcass contest in Denver. John was awarded first prize ($100,000) in the national 2002 Best of the Breed contest sponsored by the National Cattlemen's Beef Association. Not only did he win first place, but the top eight entries out of 140 used his technology. More recently, John's success was recognized in the competition sponsored by the 2004 Beef Empire Days in Garden City, KS where his ultrasound technology selected cattle with carcasses that captured Grand Champion heifer and Grand and Reserve Champion steer. Today, 18 commercial feedyards routinely use John's technology. In addition, 50 veterinarians and consultants apply John's technology on a fee basis.

The potential economic benefit to the industry from John's ultrasound research is massive. Several studies have documented that precision feeding, based on his ultrasound work, increases feedlot profits $15 to $20 per head while improving beef quality. There were 28 million fed cattle slaughtered in the US in 2003, so the potential benefit of this technology is over $500 million annually. Adoption by the industry is growing rapidly and the number of cattle scanned is now close to 20,000 cattle per week.

John is not only a premier scholar and researcher, but is also a generous benefactor of this research Center. At his direction, all prize money and royalties derived from his contest awards and patents are re-invested in the program. As John prepares for a well-earned retirement, and on behalf of the Hays faculty and staff, John's collaborators, colleagues, and friends, I thank John for his generosity, his professionalism, and his monumental contributions to beef cattle science and the economy of Kansas and beyond. We wish you and Carol the best. Pat Coyne (13 April 2005)

The full story of John's appreciation dinner can be viewed at
www.wkarc.org/research/arch/cattle/appreciationdinner.htm

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