

Sort Cattle for Gain and Grade

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After the genomic test GeneMax™ (GMX) was introduced in early 2012, Angus producers set about using it. Many

saw a marketing advantage for sorting and selling cattle with a genomic profile for gain and grade potential. Others set about using the technology to increase female quality in their own herds, while selling the steer half of progeny based on those average GMX scores.

Certified Angus Beef LLC (CAB) and Angus Genetics Inc. (AGI) market the test developed by Zoetis. CAB recently published a “Black Ink Basics” technical summary that explains how it works in high-percentage Angus cattle using a blood or hair sample.

“Economic weighting of the DNA test data determines the GMX Scores of 1 to 99,” said Gary Fike, beef cattle specialist for CAB, who presented results of a Kansas field trial at the Midwest Section of the American Society of Animal Science meeting in Des Moines, Iowa, last spring. “Higher numbers represent more potential for gain and marbling, and each component is ranked separately by percentile groups from 1 to 5.”

That trial featured 173 Angus steers from one Kansas ranch fed in two pens at Pratt (Kan.) Feeders, and harvested when they had a visually estimated half-inch of external fat on two sorting dates at a Dodge City, Kan., packing plant (see tables).

Results show big differences in carcass quality, Fike noted. An odds-ratio analysis indicated cattle with high or mid-high GMX scores were nearly five times more likely to qualify for the *Certified Angus Beef*® (CAB®) brand than those with the lowest quartile GMX scores.

For more information or to access the “Genomics Can Sort Cattle for Ability to Grow and Grade” technical bulletin, visit www.cabpartners.com/educators.

Table 1: Marbling score and average daily gain by GMX score groups

GMX score group	No. head	Feedlot in wt., lb.	Days on feed	Avg. GMX score	Avg. GMX marb.	Marb. score*	Avg. GMX gain score	Avg. daily gain**
High	83	811.5 ^a	142.0	90	4.52 ^a	538 ^a	4.64 ^a	4.33
Mid-high	32	827.5 ^{a,b}	142.0	70	3.19 ^b	518 ^{a,b}	4.06 ^b	4.36
Mid-low	30	854.1 ^b	143.9	52	2.63 ^b	479 ^b	3.53 ^b	4.27
Low	28	838.9 ^{a,b}	143.2	25	1.61 ^c	466 ^b	2.86 ^c	4.22

^{a,b}Means within a column with unlike superscripts differ (P<0.05). Outcomes adjusted for varying in weights.

*400 = low-Choice; 500 = middle Choice, minimum for *Certified Angus Beef*® brand acceptance.

**ADG calculated based on 63.5% dress yield.

Table 2: Carcass measurements, CAB acceptance and dollar values by GMX score groups

GMX score group	HCW, lb.	Rib fat, in.	REA, sq. in.	Calc. YG	% CAB	Odds ratio*	Carcass value, \$ per head
High	915.1	0.52	14.44 ^a	3.41	69.88	4.96	1,923.94
Mid-high	915.4	0.52	14.63 ^{a,b}	3.55	65.63	4.62	1,926.42
Mid-low	910.8	0.48	15.21 ^b	3.22	43.33	2.35	1,893.21
Low	908.8	0.47	14.90 ^{a,b}	3.23	28.57	1.00	1,894.07

^{a,b}Means within a column with unlike superscripts differ (P<0.05).

*Odds of qualifying for CAB in each treatment group comparing calves with GMX scores of 4 to 39; 95% confidence intervals.



Editor's Note: Steve Suther is director of industry information at *Certified Angus Beef* LLC.