"A Pound of Gold is Worth More Than a Pound of Lead"

Recently a Gardiner Angus Ranch (GAR) customer harvested a group of steers that contained sons of GAR Progress and GAR Sunrise along with a third sire group. The third sire will be referred to as a "Reference Sire." The carcass EPDs available at the time of sire selection, the carcass measurements after harvest and the average values of the carcasses from steers in each group are depicted in Table 1.

GAR Sunrise and the reference sire had less carcass data submitted to the American Angus Association (AAA) prior to sire selection. Hence the accuracies associated with the EPDs for carcass weight (CW) and marbling (MARB) were lower for these two sires. Likewise, because the $B calculation includes these two breeding values, the relative reliability of the $B indexes for the reference sire and Sunrise would also have been lower at the time of the customer's sire selection.

Table 1. Sire Carcass EPDs, Steer Carcass Measurements and Steer Carcass Values for Three Sire Groups

			CARCASS EPDs			CARCASS MEASUREMENTS					CARCASS VALUE	
Sire	No. Grps	No. Carc.	CW	MARB	$B	CWT	Quality Grade PR	CAB	CH	Sel	$/cwt	$/head
GAR Progress	18	58	23 (.69)	1.87 (.73)	$98.95	907lbs	25%	75%	-	-	$263.76	$2,392.30
Reference Sire	4	6	34 (.43)	.44 (.54)	$101.78	900lbs	-	27%	56%	17%	$254.69	$2,292.21
GAR Sunrise	6	13	40 (.51)	1.21 (.58)	$127.83	972lbs	25%	37.5%	37.5%	-	$261.70	$2,543.72

Conditions:
- $8/cwt Choice/Select spread
- $20/cwt Prime premium
- $5/cwt CAB premium
- $160/cwt Live market price

GAR Progress

GAR Sunrise

Steers sired by GAR Progress and the reference sire yielded similar carcass weights, but a higher proportion (100%) of the carcasses from Progress progeny graded in the upper two-thirds of the Choice quality grade or as Prime and received a premium ($13/cwt for CAB; $28/cwt for Prime) compared to those carcasses from the reference sire group (27% CAB). In fact, 17% of the carcasses from steers by the reference sire graded Select and received no premiums on the value-based grid.

Because of the differences in marbling and quality grade, carcasses from progeny of the reference sire returned an average of $100.09 less than those from steers sired by Progress. The difference in carcass value was larger than expected and in the opposite direction than predicted by the $B index values for Progress and the reference sire prior to sire selection. The $B index, expressed in dollars per head, is designed to predict the expected average difference in future progeny performance for postweaning and carcass value compared to progeny of other sires. At the time the sires were selected, the reference sire was expected to sire steer progeny that would return the same or slightly more per head (+$2.83) than the Progress steers. Instead, the failure to reach higher quality grades caused the steers from the reference sire to be considerably less valuable.

A difference in value between carcasses of similar weight from the two sire groups reemphasizes the concept that "a pound of gold is worth more than a pound of lead." Having a breeding value that predicts such a difference is of obvious value. In this case the carcass EPDs, and thereby the $B index, of the reference sire were derived from very few carcass progeny records (6 carcasses), and therefore, of low accuracy. The lack of carcass data undermined the predictive value of $B index for the reference sire.

This highlights the importance of collecting an adequate amount of carcass data in a structured evaluation to increase the accuracy of the carcass EPDs and the selection index. Simply put, six carcasses were not enough.

The comparative results of the carcass measures and carcass values from progeny of GAR Sunrise and the other two sires is different than the comparison of progeny of Progress and the reference sire. Sunrise had more progeny data than the reference sire but far less than Progress. The accuracies for the MARB and CW EPDs at the time of sire selection were slightly, but not significantly, higher for Sunrise than

for the reference sire. Based on the EPDs and the $B index, progeny of Sunrise were predicted to have greater carcass weight and higher carcass value per head than the other sires, but the marbling EPD was intermediate to that of the reference sire and Progress.

Carcasses from Sunrise-sired steers weighed 65 to 72 lbs. more than those from steers of the other sire groups. The marbling of those carcasses allowed them to achieve higher quality grades than those recorded by steers in the reference sired group, but lower than those recorded by steers in the Progress-sired group.

Perhaps the old adage should be changed to read, "a pound of gold is worth more than a pound of lead" and "it's good to have more gold!"

Grades of the Sunrise-sired carcasses were high enough for 62.5% to receive the Prime (25%) or CAB (37.5%) premiums. The combined effect of the desirable carcass characteristics and the greater carcass weight in this group led to a carcass value that exceeded that of steer carcasses in the Progress-sired group by $150.42 and in the reference-sired group by $251.51. Perhaps the old adage should be changed to read, "a pound of gold is worth more than a pound of lead" and "it's good to have more gold!"

The EPDs and $B index values for GAR Sunrise were obviously better predictors of the carcass traits and carcass value than the values available for the reference sire prior to sire selection. This was true even though the accuracies associated with the EPDs for Sunrise were not high and were similar to those of the reference sire.

Table 2. Sire Carcass EPDs for Three Sire Group s after Additional Carcass Data Collection

			CARCASS EPDs		
Sire	No. Grps	No. Carc.	CW	MARB	$B
GAR Progress	25	92	26 (.74)	1.82 (.77)	$103.03
Reference Sire	11	64	18 (.68)	.33 (.73)	$69.84
GAR Sunrise	12	24	49 (.57)	1.21 (.63)	$139.39

Why did the genetic predictions for Sunrise prove to be more reliable? One possible factor may have been at play in the case of carcass data collected for GAR Sunrise versus the reference sire. Although the carcass data for Sunrise at the time of sire selection was limited (13 carcasses), in each case the Sunrise progeny were in a contemporary group with proven sires of high carcass merit in a structured progeny evaluation. This structure and the accuracy of the genetic predictions for the contemporaries in those evaluations may have enhanced the value of the carcass data collection process for Sunrise.

The final chapter of this story is the change in the EPDs and the $B index that has occurred for these three sires following the addition of more carcass data to the AAA database for each sire (Table 2).

As a result of the additional progeny data, the accuracies associated with the carcass EPDs for all three sires have increased. With the additional data, the differences in EPDs and differences in the $B index reflect the differences in carcass merit and carcass value recorded when the steers from the GAR customer were harvested. In part, this is due to the fact that the customer's data contributed to the evaluation of the genetic breeding values. As a note, carcass data from an additional 20 groups of animals has also been submitted. As more carcass records are collected, better characterization of Angus sires and greater reliability is the result. Bottom line, this "stuff" really does work!

GARDINER ANGUS RANCH