

Dr. Gosey: Ranchers Wise to Crossbreed Even if Heterosis was Zero

Most ranchers know crossbreeding can increase output, but they may not be aware of the potential 25% crossbred advantage in lifetime productivity of crossbred cows. That's just one point Dr. Jim Gosey, University of Nebraska-Lincoln, stresses when standing on his "You need to crossbreed" soapbox.

"In recent years, many commercial cow herds have changed dramatically as producers have opted to repeatedly top-cross Angus bull on their commercial cows resulting in loss of heterosis and loss of complementary breeding effects," Dr. Gosey states.

The animal scientists cites five reasons why this shift to just Angus might have occurred: 1) A desire to simplify breeding programs (perception that crossbreeding systems are too complex); 2) Use of black hide color as a proxy for market quality; 3) The belief that high percentage purebred commercial cattle produce more uniformity and consistency; 4) Effective marketing of the Angus EPDs and carcass database; and 5) the Angus brand, particularly Certified Angus Beef, impact.

When it comes to marketing, the Angus breed and CAB, plus similar brands, deserve high praise for their work. But a great job of marketing is not the same as saying that Angus is the best breed and Angus on Angus should be used in a commercial beef program. It is simply complimenting the Angus breed and CAB marketing programs for their marketing endeavors.

"Ranchers would be wise to crossbreed even if heterosis was zero, due to the complementary effects of matching strengths of one breed to offset weaknesses of another breed," Dr. Gosey says. "The opportunity to mate bulls and cows of different breeds or paternal/maternal lines to take advantage of complementarity is an important part of the total crossbred advantage.

"Heterosis can impact many traits, but is especially useful in improving performance in lowly heritable traits, such as reproduction, early growth and fitness or lifetime productivity." (Table 1)

Table 1. Average Heterosis in Beef Cattle Traits

| Trait | % Heterosis |
|-----------------------|-------------|
| Calf Crop Weaned | 8 |
| Wean Wt. | 13 |
| Yearling Wt. | 4 |
| Carcass Traits | 3 |
| Lifetime Productivity | 25 |

Dr. Gosey adds that maximum heterosis is realized in the first cross of distinctly different breeds.

Heterosis can be partitioned into three components: individual heterosis—that found in crossbred calves, maternal heterosis—that found in crossbred cows and paternal heterosis—that found in crossbred sires.

"By far, the most important of these is maternal heterosis, accounting for about two-thirds of the total crossbreeding advantage," Dr. Gosey notes.

Dr. Gosey stresses that maternal heterosis has more impact because of the effect on reproductive performance through earlier puberty, higher conception rate, faster breed back, greater longevity and the maternal impact on calf performance. Individual heterosis accounts for the other one-third of the potential 25% increase in lifetime productivity and is realized due to early vigor resulting in more live calves plus greater early calf growth rate.

This animal scientist does not agree with producers who contend that all crossbreeding programs are too complex and that high percentage purebred commercial cattle are more uniform and consistent.

“One-pasture crossbreeding programs exist that can deliver adequate heterosis, are simple to manage, utilize breed differences, can be designed to produce uniform calf crops and can help avoid several important genetic antagonisms,” he states. “One-pasture crossbreeding programs offer commercial producers a practical tool to enhance management effectiveness and increase profitability.”

As for Reason 3, well, what can be said. Black hides should never be a proxy for quality.

Sale manager Roger Gatz of Cattlemen’s Connection agrees whole-heartedly with Dr. Gosey that black hides should not be a proxy for quality. Gatz adds, however, that black and quality can go together and proof is the animals produced by Goldrush Genetics and Rasmussen Gelbvieh.

“Mike and Don have always emphasized quality first and black second. While it’s taken a lot of work to reach this point, the black Gelbvieh in this dispersal are exceptional.”