

CROSSBREDS VERSUS PUREBREDS

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Crossbred commercial cows are absolutely more productive and more profitable than straight-bred commercial cows. End of story! We more often hear emphasis and promotion of the direct effects of individual heterosis and what it means to calf weights, because the effects are much more immediate and more easily quantified. By far the greatest positive effects of crossbreeding, however, are in the additional profitability it generates from the commercial cowherd. Sure, we can make poor decisions in a crossbreeding program to create an impractical or unproductive female; but, if we stay within reasonable parameters as far as breed choices and biological types that deliver value, heterosis always wins the day. The only remaining question is how much more valuable is a crossbred commercial female?

Research has repeatedly shown the lifetime production value advantage of a crossbred female over her purebred counterparts of up to 25%. That means that if an average straight-bred commercial female produces six calves averaging 500 pounds at weaning or 3,000 pounds of weaned calf, then her crossbred counterpart will produce about 3,750 pounds during her productive lifetime. Even at \$1.00 per pound, which I hope is not, but looks like it could be in our future, that extra production is worth about \$750.00 of increased lifetime production per cow or an increase of well over \$100.00 per cow per year. There is almost no other practice a commercial producer can adopt that will generate that much additional return to a cowherd enterprise on an annual basis. With the predictions of lower prices, added production costs and subsequent tighter margins for the beef business, these additional returns that come from hybrid vigor will be nearly impossible to ignore.

Where does the substantial added production come from? First, hybrid vigor has an enormous impact on fertility and longevity. Research shows that the average crossbred female will produce an extra calf in her lifetime when compared to her straight-bred counterparts. That means fewer replacements i.e. more calves to market, and a significant reduction in costs associated with female development. The rest of the advantage comes from the additional 10% production advantage per year that you should expect because of reduced calving interval, higher percent of calf crop weaned, increased milk production and faster growing calves.

What, then, are the downsides to using crossbred females? The primary additional cost comes from the approximately 75 pounds additional mature size associated with a crossbred cow compared to the average weight of the purebred parents and the increased cost associated with higher milk production. This added weight and production translates into increased maintenance and lactation nutritional requirements along with a slightly positive increase in cow salvage value. The other significant issue is the increased management required to develop and maintain a planned crossbreeding program for practical replacement female development while still producing a high-value

calf crop with built-in profitability for end users. For \$100.00+ additional production per cow, per year these arguments against using crossbred females are weak at best.

For most US production environments, females that are between 50% and 25% Continental genetics with the remaining 1/2 to 3/4 being British breeding are proving to have the most value. Matching biological type with optimum, profitable production levels for both the environmental resources and the marketing plan is the key. The greater the available nutritional resources, the higher the percentage Continental breeding that can be practically maintained in the cowherd and for challenging circumstances the less Continental that may be practically used. The exceptions are southern climates where a heat-adapted component in the commercial cow herd may be essential. In the case of Brahman genetics, these combinations actually generate slightly higher levels of heterosis than Continental x British crosses in addition to providing necessary environmental adaptability. In these cases, in addition to the British and Continental breeding, somewhere between 1/4 and 3/8 heat adapted genetics maintained in the cowherd seems to be sufficient for climate adaptability without sacrificing significant end product value in the offspring.

Conquering the management issues associated with planned crossbreeding systems can still be a challenge for some. There is a significant body of research that argues for purchasing all replacement females as the most cost effective way for commercial herds to manage crossbreeding systems and female development. For all the data favoring the added profitability of this type of program, uptake by the industry has been slow. Most commercial herds have and will continue to produce their own replacement females from within, primarily because of the cash outlay, supply availability and uncertainty associated with purchasing all replacements. This being the case, how can commercial herds best manage crossbreeding systems to optimize heterosis and promote the uniformity they need in their cowherd to make both management and calf marketing more effective. Composite bulls provide the answer for some to reduce management costs and still take advantage of heterosis.

By using composite bulls such as SimAngus, genetic management decisions and practices are greatly reduced and a 1/2 British, 1/2 Continental cowherd and calf crop can be a reality. For those who wish to maximize heterosis and are willing to more closely monitor breeding systems and replacements, rotational and roto-terminal crossbreeding systems absolutely can provide more hybrid vigor and higher levels of production. However you choose to implement programs to take advantage of the value of maternal heterosis, what's important is that you find a way to collect the dollars that are available by using it. There is no other single production practice that can increase the profitability of a livestock enterprise more than using crossbred females, and it's nearly free.