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BeefTalk: Crossbreeding: It Works for Feral Pigs



The discussion of hybrid vigor has a place for beef producers.

By Kris Ringwall, Beef Specialist

NDSU Extension Service

Crossbreeding, bringing together parents that are distantly related but capable of producing viable offspring, has increased hybrid vigor within domestically raised livestock.

Extensive research has shown positive improvement for several production traits, particularly survival traits that are lowly heritable. Interestingly, sometimes if one looks at what others are intentionally or not intentionally doing, one can learn a lot. The same is true about crossbreeding.

The concept of domesticated livestock mating with

Images

The Question of the Day

What gift did Mother Nature give beef producers?
 Answer — Hybrid Vigor or Heterosis

Technically referred to as the measurable and non-measurable advantage in the cross bred calf that was greater than the average of what one would expect based on the average measurable performance of each parent breed.

What gift did Mother Nature give beef producers?

columns

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The concept of domesticated livestock mating with their wild relatives is not new and generally not encouraged. The reason comes back to the increased hybrid vigor of the offspring and their tendency to out-compete the parents.

In native environments, hybrid offspring can be very detrimental, particularly when reproductive capacity increases. For example, feral pigs are a very real, current and major problem. They are aggressive, productive and reproduce copiously.

The domestic pig (*Sus Scrofa*) is capable of producing viable offspring when mated to several subspecies. The vigor of the offspring borders on aggressive and environmentally destructive, so laws have been enacted to control feral and/or hybrid pigs.

In fact, several species of wildlife are protected from hybridization with closely related subspecies because the hybrids will, at times, outperform both parents and actually lower the population of the original parents. This hybrid vigor is real and not something to be taken lightly.

In the canine world, dogs, coyotes and wolves can produce a hybrid that may have a selective advantage over the original parents. Florida is fearful of the potential hybridization of pythons. Although one may not think of snakes as domesticated, they are, some more so than others.

use of releases

The news media and others may use these news releases in their entirety. If the articles are edited, the sources and NDSU must be given credit.

Two snakes - the African rock python (*Python sebae*) and the Burmese python (*Python molurus bivittatus*) - keep making the news, primarily because of the fear they may crossbreed. When confined to their normal habitat, one in Sub-Saharan Africa and the other in southern and Southeast Asia, they do not cross. They fit their environment.

Like beef producers who traveled the mountain passes and waterways, who also co-mingled different breeds and subspecies of cattle, those who appreciate raising snakes worry the same may occur. Imagine a snake the size of a Burmese python with the aggressive nature of the African rock python. Not a good thing.

Fortunately, the actual crossing of these and most subspecies that result in viable, reproductively sound offspring is very rare. But the point is made: Hybrid vigor is real. Much effort was made in crossing American bison with domestic cattle. Although not all the offspring are viable, enough viability existed to create the Beefalo breed, or cattle with bison and cattle DNA.

I could continue, but the concept of hybrid vigor is accepted as real. And if not, then go try to herd some feral pigs. So, the discussion of hybrid vigor certainly has a place for beef producers. The beef industry can tone down the extremes of hybrid vigor and keep the good points: increased calf vigor that improves livability, increased

reproductive potential and associated decreased costs.

The premise of a good beef crossbreeding program was to keep the production unit, the cow, smaller and refine costs to make the cow practical but productive. The advantage came with a terminal sire, or one that would maintain all the pluses achieved with heterosis (the crossing of unrelated breeds), plus add unique traits associated with the selected breed of terminal sire. This was good. And the beef cattle breeding systems were expanded to handle more breeds.

Programs maximized production through terminal sires or more sophisticated rotational breeding programs and allowed for the inclusion of new breeds on the maternal side. Crossbreeding works.

Seedstock producers have improved their genetics through selection for increased production attained through selection for growth and other traits. The lowly heritable traits, however, still maintain the advantages attained through heterosis.

So why the point? In the genetic world, remember that measurable and non-measurable advantages are evident as diverse genetics are crossed. That is simply fact, but the concept of developing crossbreeding systems has taken second seat to selection, potentially shrinking the

tool chest.

As new, cost-efficient beef systems are explored, a large tool chest is needed. Those early black baldy concepts were real as producers look to manage the right cows, cows that are reproductively superior, biologically efficient and wean calves that exceed the cows' ability to grow.

Now is a good time to think about terminal beef cattle systems.

May you find all your ear tags.

For more information, contact your local NDSU Extension Service agent (<https://www.ag.ndsu.edu/extension/directory>) or Ringwall at the Dickinson Research Extension Center, 1041 State Ave., Dickinson, ND 58601; 701-456-1103; or [✉kris.ringwall@ndsu.edu](mailto:kris.ringwall@ndsu.edu).

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Attachments



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