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## BeefTalk: Crossbreeding, or Should We Say Effective Breeding Systems



**If excelling in calf growth and maintaining a cost-effective cow herd is the goal, crossbreeding is an option.**

By Kris Ringwall, Beef Specialist

NDSU Extension Service

Herd size and fence are determining factors when bull selection is used, at least when the concepts of crossbreeding and breeding systems are discussed.

If the goal is to excel in calf growth and maintain a cost-effective cow herd, crossbreeding the available breeds of cattle certainly becomes a discussable point.

### 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.

The Question of the Day - What gift did Mother Nature give beef producers?

## columns

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**[BeefTalk: BeefTalk: Crossbreeding, or Should We Say Effective Breeding Systems](#)** (2016-12-29) If excelling in calf growth and maintaining a cost-effective cow herd is the goal, crossbreeding is an option. [FULL STORY](#)

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Within the last couple of decades, the purebred focus has improved and standardized many of the cattle breeds available to the cattle producer. Sire selection within a breed has been perfected, offering multiple sires that excel in numerous traits. The sheer number of identified traits exceeds the needs of the commercial producers, which is why selection indexes were developed.

Selection indexes are being refined within breeds. These indexes may well lead to the development of maternal and paternal genetic lines that allow for more effective sire selection to meet the needs of the terminal producers and maternal replacement producers in the industry.

A review of the poultry and swine industries indicates that paternal and maternal lines can be developed and very effectively utilized. Yes, the business structure within the poultry and swine industries is completely different, and generally, history would say producers in the beef industry have little desire to move toward a more corporate structure.

So what opportunities are available for individual beef producers to capitalize on terminal calf production while maintaining a cost-effective cow herd? Recently, Dickinson Research Extension Center researchers evaluated and pondered the results of this very question.

For ease of discussion and simplicity, the larger

from the start. [FULL STORY](#)

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cattle had a 10 percent advantage when a cattle system is evaluated based on calves as the unit of production, but when based on acres as the unit of production, smaller cattle had a 10 percent advantage in total herd revenue. These percentages are going to vary depending on the various aspects of individual cattle operations, but the conclusion certainly notes the opportunity for producers to try to capture both sides of the question: growth and cost-effective maternal production.

So what should a producer do? Begin by selecting sires within the current breed of use that would meet the desired criteria. The challenge is finding a pool of sires that excel in maternal and terminal production. In fact, one could say they are relatively unavailable.

Growth and carcass traits co-exist. Growth and milk co-exist. Growth and controlled birth weight co-exist. But the challenge of growth and the combination of the right replacement traits is more difficult. The solution may be reaching out to other breeds or lines within a breed.

Either way, one big stumbling block always appears; that is, the need for different bulls means more pastures and more fences. (More on that at a later date.) For now, remember these so-called crossbred calves can excel in growth. They are vigorous from birth throughout life. They withstand the stresses of the environment better and are

just all-around better calves.

The crossing of cattle breeds or selected lines of cattle opened a new dimension in the daily grind of raising cattle. Producers loved the freshness of vigor, thus a new term - hybrid vigor or heterosis - was developed. That technically referred to the measureable and nonmeasurable advantage in the calf, which was greater than the average of what one would expect based on the average measureable performance of each parent breed.

For producers, this was a gift from Mother Nature. Thus, this was the beginning of crossbreeding in commercial cattle production.

Commercial production systems soon were developed to explore and document the advantages of crossbreeding, and more refined breeding systems were established. Rotational and terminal crossbreeding systems were put on paper and made the educational sessions of the time.

The classic, the black baldy, was produced and named. The Hereford and Angus-crossed calf excelled, and when the females were kept as replacements, these crossbred cows had improved fertility and successful pregnancies. This was good.

But for many people, being good is never good enough. If the traditional English-bred cattle would respond to crossbreeding, why not search the world and bring in more breeds? Producers did,

and brought in new breeds that were distinctly different from the traditional breeds.

Another classic was created: The black baldy cows were bred to imported Charolais cattle, and calf growth simply mushroomed. These so-called "terminal" calves excelled in red meat production and feedlot performance. These classic Hereford-Angus crossbreeding programs were well-documented and the advantages are real.

Perhaps Mother Nature's gift should be opened again. And just maybe some fence could be added to the list.

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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