



*When it comes to raising beefcattle is science in conflict with conventional wisdom? Or do the two together allow professional seedstock producers to eliminate problems quicker and accelerate herd improvement?*

*John Crouch, performance programs director at American Angus Association, William Beal of Virginia Tech, Doug Hixon of University of Wyoming, and a handful of veteran breeders in our industry were asked to address this issue and share their experiences and ideas with our readers.*

*These breeders realize it's nearly impossible to build a cow herd on the computer. And who would really want to? For one of the great joys of raising good cattle is personal appraisal.*

BY BARBARA LABARBARA

## The Scientific Tools

Expected progeny differences (EPDs) are not only a report card on how well your cattle are doing, they are a guidebook to the future of your herds. There is no such thing as a good or a bad EPD. They describe what an animal is genetically capable of producing based on averages gained through studies of large numbers of cattle.

Growth, milk and carcass EPDs are especially valuable when selecting bulls and replacement heifers because varying degrees of those traits are hard to identify with the naked eye. Only extremes are visibly noticeable.

"EPDs simply measure the transmitting ability of traits that have economic influence on profitability," says John Crouch.

"I don't believe science is in conflict with the seasoned rancher's experience because nine times out of 10, the rancher is right," says William Beal, reproductive physiologist at Virginia Tech. "Looking at it from an applied researcher's point of view, one of the problems is hearsay data or conventional wisdom cannot be published."

Brian McCulloh selects bulls at Woodhill Farm, Viroqua, Wis., based on EPD information and culls his cows and heifers based on performance and conventional wisdom.

"The guys who made the beef industry by doing it the old fashion way need to adapt. They can't continue to be profitable without adopting the EPD concept," says McCulloh. "They will do OK, but the person who sits at the computer, mates his cows and then uses his eyes to cull them will be light years ahead of the greenhorn who breeds strictly by the numbers, or the rancher who decides he doesn't need EPDs. Those things have to work in

tandem. One without the other will not work."

Mark Gardiner of Gardiner Angus Ranch, Ashland, Kan., believes EPDs work with amazing accuracy. "In the past we described an animal with a purple ribbon or by which test station he won," he says. "We never measured genetic merit. Today Angus cattle are the best breed of cattle because we have the largest and, therefore, the most accurate database."

With the publication of the first Field Data Report in 1980, Mark's father, Henry, was gratified that the beef industry had the same tools dairy producers had been using for years. He knew it would allow the Angus breed to move forward.

## Conventional Wisdom

Fertility, udder quality, soundness, disposition and overall thriftiness are traits measured with conventional wisdom. EPDs cannot identify them. The seasoned breeder knows these traits are important to the success of their herd.

"We like to look at our cattle as much as the next guy," says Gardiner. "I can look at a cow and tell you if she is working but I prefer to combine that visual appraisal with her production records. It's like looking at an exam that has both the questions and the answers."

Henry Gardiner was studying, working hard and using artificial insemination in the 1950s. He has not used a cleanup bull since 1964, yet his herd did not have significant gains in weights from 1964 to 1980. He had a good herd but, without data, he kept floating back to average. The eye of the master was not enough.

Beal says milk EPDs are determined indirectly through weaning weight data. If an

individual cow has greater or smaller weaning weights than expected it is factored in as maternal weaning weight or milk EPD.

This beef scientist was skeptical because the information was derived indirectly. So in 1986 a research team at Virginia Tech started milking Angus cows. The cows were divided into the top, middle and lower milk EPDs. They removed the calves overnight, milked the cows and weighed the milk. Milk EPDs and milk production were compared on those individual cows. As expected, cows with the higher EPDs had the greatest production while the others gave according to their rank of middle or lower. Milk EPDs correlated highly with the amount of milk the cows produced.

"That proved to me the two things matched up," says Beal. "A milk EPD is a valid selection tool."

## Proper Use of EPDs

EPDs project differences. Doug Hixon, Extension beef specialist at the University of Wyoming, Laramie, believes they must be coupled and monitored with environment and in-herd record systems. Directional change can be made from that base point.

Hixon says a high percentage of producers who use EPD information to make decisions are using them effectively. Still, he adds, there will always be some who will not use available scientific tools.

"In any operation you must honestly evaluate your own cattle," adds McCulloh. "Make sound decisions on milk, growth, birth, weaning and yearling weights. Keep the ones that work and terminate the ones that don't."

A total of 4,237 bulls are listed in the new Angus sire summary with EPD

information, according to Crouch. There are in excess of 100,000 bulls in the entire database. "EPDs project the average performance of progeny; hence, on either side of the bell curve are animals whose performance does not coincide with the EPD," Crouch explains. "These animals are called 'out liers,' and result from normal genetic variation within the population. There will be situations where the milk EPD is high and the cow is dry."

"It's most frustrating to have a cow that you know has milk and her EPDs do not match her performance," adds Beal. "The reason may be due to environment, not genetics."

## Producer Objectives

McCulloh says his duty as a breeder is to produce cattle that perform above average. He is looking for a wider spread between birth weight EPD and yearling weight EPD while monitoring his mature cow size. In his environment milk EPDs from 12 to 15 pounds are helping him accomplish that goal.

At the Gardiner Angus Ranch, Mark and his family are striving for as much growth as possible with the following criteria: 1. acceptable birth weights; 2. accelerated growth; 3. limitations on mature size; and 4. acceptable carcass weight.

"We may go a different way in the future, but right now we need as many pounds as possible in an acceptable package," says Mark. "That package has to have a live calf that will grow as fast as possible to the end point, then quit growing so we have a cow that will live in our environment. EPDs allow us to do that. They give us a product that earns us and our customers the full market value."

## Science or Savvy cont.

Dick Janssen of Green Garden Angus, Ellsworth, Kan., says they have built their entire product by using EPDs. He believes they can help you accomplish anything you want. The first step is to decide what end product you want and be diligent in pursuit of that goal. Janssen's objective is a cow which is reproductively efficient in her environment.

### Real World Experience

EPDs can help producers better match genetics to their environment, but it's important to remember that regional differences in EPDs do exist. The bull whose only data comes out of the Northwest is likely to look better than a bull whose data comes from the Southeast. When a bull is used nationwide, that begins to change.

In the upper Midwest feed grain and by-products are more plentiful than in some other parts of the country. McCulloh, whose farm is in southwest Wisconsin, has chosen a specific set of EPDs which reflect his environmental reality. How much growth cattle have is dictated by the environment.

When Mark Gardiner got out of high school in the late 1970s, they were weaning male calves with an average pay weight of 523 pounds at 10 months. Today, with basically the same forage system, the pay weights on their weanlings have increased by 300 pounds; steer weights by 400 pounds. It's a direct result of using disciplined EPD selection. At the same time, lower feed consumption resulted in a decrease in cost of gain **proving** the economic value of using EPDs.

At Wye Angus in

Maryland, cow herd manager Dean Bryant says his experience with carcass EPDs has found the high marbling bulls produce higher marbling offspring.

"It's the same with ribeye and carcass weights," he reports. "The changes within carcass traits are greater than EPDs project though they are in the right direction. For example, a ribeye may be an inch larger than the half inch you expected."

Henry Bergfeld of Summitcrest, Summitville, Ohio, says his visual appraisal backs up what his EPDs are telling him. Milk is the easiest trait to see. Yearling weights alone cannot always tell you about mature size but combined with mature daughter hip height, results are predictable. He can visually see size, muscle and ribeye improvements in his cattle.

Summitcrest started collecting carcass data in the 1970s but did not get serious about it until the mid-1980s. At that point they began feeding all of their cattle and gathering data from their steers. They used the information in their program and shared it with the American Angus Association to create carcass data on a number of bulls. Today with the use of EPDs, they can identify bulls which will produce the kind of ribeye and carcass consumers demand.

### More EPD Benefits

"EPDs cut corners for the seedstock producer," says Hixon.

From past experiences a producer knew when a daughter of a certain bull went into production whether she exhibited adequate milk **far his** environmental constraints. EPDs create

better odds because sires can be eliminated based on genetic prediction data before the trial and error stage. EPDs provide a larger selection of bulls and one can be chosen without traveling all over the country.

Janssen corrected a calving problem using EPDs. McCulloh decreased the length of his calving season as well as the range in weaning weights. He now has a more consistent, uniform calf crop. In 1984 he was working with 16 cow families, today there are five cow families in his herd.

"Predictability is one of the major advantages of EPDs," says Bergfeld. "With today's information I know what an EPD bull will produce on any given set of our cows."

EPDs are one of the best marketing tools available today. Many good commercial cattle people will not visit a herd that does not have scientific data.

"Today, with disciplined selection, we have calves born to virgin heifers that will out grow the growth trait leaders of five years ago," says Gardiner. "At the same time, we have increased our feedlot efficiency. We have had nearly a 100 percent increase in gain and did it with 57 percent less feed. The good news is it will get better."

In the 1970s their bulls gained 2.7 pounds a day. Last year's bulls gained 5.3 pounds. In the late 1970s their bulls were converting approximately 7.48 pounds of dry matter basis per 1 pound of gain. Today they have pens recording feed conversion rates as low as 4.28:1.

### What Will the Future Bring?

Cattle breeding has changed more in the past five years than it did in the previous 20. EPDs are not a fad, they are a reality. Work is being done to include conventional wisdom such as disposition and soundness in standard EPDs. The future will see a wider spread between professional seedstock producers who combine conventional wisdom with scientific data and those who do not. Producers will feel the difference in the marketplace.

Someday a system that creates more information faster may replace EPDs. But for now they are the best tool the beef cattle industry offers.

The great thing about using both EPDs and conventional wisdom is looking back at what could have been — then looking forward at what can be. The eye of the master has read the data and the odds of success have increased.

### Recommended Reading

Refer to pages 1, 6, 8 and 9 of the Spring Sire Evaluation Report, which accompanies your March Angus Journal, to learn more about expected progeny differences and growth and maternal evaluation.

John Crouch's article, "Understanding and Applying Carcass EPD," published on pp. 148-150 in the November issue, is also an excellent source,