

# Spinning the EPD Wheel

*Balancing multiple traits in a selection program takes planning.*

BY LYNNE HINRICHSEN; PHOTOS BY CHRISTY JOHNSON

Producers have significant information available for selecting cattle to use in their herds. All the data and advertising resources can be overwhelming, leading producers to ask, "How do I decide which bull is right for my cows?"

Whether a person is a registered breeder or commercial producer, the bottom line is the same: to make the herd profitable. Selecting herd sires or replacement females should be based on multiple traits rather than any single trait. Expected progeny differences (EPDs) are the most basic tool for taking guesswork out of breeding decisions.

Although many producers are aware of the pitfalls of single-trait selection, a reminder is in order, especially for new producers. Cattle producers new to the business may be confused by all the new terms and goals being discussed among seasoned producers. A reminder to all producers can help realign sights toward the same beef industry targets. These targets revolve around our industry becoming more consumer-oriented and providing the commercial sector with a strong base of proven genetics that will enhance the national commercial cow herd.

Producers can use EPDs to select seedstock that will improve overall herd performance, increase the percentage of cattle meeting *Certified Angus Beef*<sup>™</sup> specifications and increase herd profitability through value-based marketing. Supply development staff of the Certified Angus Beef (CAB) Program turned to three diverse sources to explore how.

**Henry Bergfeld**, manager of Ohio-based Summitcrest Farms, has focused on using EPDs to gain more predictable herd performance and to increase the percentage of his cattle meeting *Certified Angus Beef* specifications. Bergfeld has been collecting carcass information on cattle since the early 1960s. With ranches in Ohio, Nebraska and Iowa, the Summitcrest herd totals 1,500 cows, including 1,250 registered Angus females. Summitcrest has been stacking EPDs for many years with great success.

Our second source is **Ron Bolze**, director of progeny tests for carcass merit with the CAB Program. His primary responsibilities are in sire evaluation, analyzing carcass data and applying the information to increase the supply of cattle meeting *Certified Angus Beef* carcass specifications.

**John Crouch** is director of performance programs for the American Angus Association and deals with EPDs on a daily basis. He and his staff are responsible for putting together the *Angus Sire Evaluation Report*, working on Angus Herd Improvement Records (AHIR) and analyzing performance data sent in by producers.

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### Individual game plans

Even with the success of the Summitcrest program, Bergfeld remains very pragmatic in goal-setting and selecting paths for reaching those goals. He is also realistic when helping producers determine individual program needs.

Every producer's needs are different, says Bergfeld. The question producers should ask, he says, is, "Just why am I in the cattle business anyway?" While the answer may vary from producer to producer, Bergfeld says the one common purpose is ultimately to produce beef for consumption.

"In the early to mid-80s," says Crouch, "our industry began to realize we are in the cattle business to produce a quality end product. The CAB Program has brought this awareness worldwide in establishing the demand for a quality product."

If the goal is to produce a high-quality and consistent end product for the consumer, then where does a producer begin to put together the pieces for atop-performing herd?

Cattle selected for replacements in any herd must be analyzed for a variety of traits or a combination of several traits, but never for any single trait. Most producers have learned a valuable lesson in single-trait selection — it almost never works.

Producers have seen this scenario in the past from selecting EPDs for extreme growth to low birth weights to high milk production.

"After chasing all those other traits we are now putting the emphasis on marbling. Let those who want to chase the rabbit go," says Crouch. "The others who have seen what can happen by chasing these rabbits will look for bulls with a balanced set of EPDs and fit the bull to their cows."

Bolze further explains how producers have learned from the past by giving a lot of credit to the commercial sector and its needs. He uses frame score to illustrate his point.

"It took the commercial man and his resistance to buying extreme-frame-size cattle to get the seedstock producer to change. Today, things have changed to where most seedstock producers recognize the need for balanced trait selection," says Bolze. "The needs of their bull-buying clientele and the need to reduce their own individual costs dictate that moderate-framed, easy-fleshing cattle with a balance of performance and carcass traits will be the kind of cattle that can work in most programs."

### Expanding selection criteria

Early on, like most programs, Summitcrest considered two factors in



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selecting cattle — weaning weight and yearling weight. Bergfeld says the selection for extreme growth was an attempt to catch up to the continental breeds since they would gain more pounds. Adding to the continental acceptance factor was the lowering of the grading standards in 1976. At the time, no packer, feeder or consumer was paying for quality, so producers had little concern for quality grade.

"Our customers sold their cattle by the pound. Weaning and yearling weights are still very important traits, but we need a system with balance," says Bergfeld. "You do not have to single-trait select in any area. Cow-calf producers and registered breeders need to find some balance."

Today the Summitcrest program has stacked generations for performance as well as carcass merit. At Summitcrest, a lot of the decisions for replacement females are made at weaning time. Bergfeld says he looks at the cattle phenotypically and then incorporates the EPDs. He likes his females to fall between 6.0 and 7.0 for frame score but will take cattle a little larger or smaller. His dream herd would be 6.25 to 6.75 for frame sire.

### Reproduction first

Understanding where the Angus breed has been is the first step to making progress for the future. The trends on EPDs have evolved as measures for additional traits have been established. From total performance traits to maternal traits to carcass traits, the producer must continually incorporate all traits into the selection process.

While most producers put an emphasis on the bull side of the genetic equation, equal credit or blame falls on the female side. Therefore, our panelists share their thoughts of how reproduction fits above other selection tools we have available. This

is not to say the performance and carcass numbers should be tossed aside. Instead, the numbers will assist the producer in making decisions after the reproductive traits are considered.

"People have taken the beef cattle industry and made something very complicated out of something very simple," explains Crouch. "Reproduction is probably the least heritable trait we deal with and, at the same time, it is the most important."

Crouch suggests focusing on the following criteria during selection:

- Eliminate from the herd the females that do not breed or reproduce within a given amount of time;
- Consider growth after weaning until a steer is harvested and
- Consider the whole maternal complex.

After these traits have been selected for and the cattle are working well with the natural resources available, then one can begin to select for carcass merit.

### Finding the middle ground

Bergfeld likes to look for the middle-of-the-road type female — a female that can keep herself in decent condition, maybe even lean toward the harder-doing end as long as she keeps performing and is functional. Summitcrest females must be able to perform anywhere since Summitcrest's customer base is very diverse and operates under differing environmental conditions.

Summitcrest must be heading in the right direction. The farm has a high percentage of Pathfinder cows in the herd. Bergfeld does not like to boast about this achievement, but the proof is on paper.

Cow herd productivity is measured in a number of ways, according to Bolze. He

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stresses it's a combination of measured maternal traits, such as milk production and calving ease, and traits less likely to be measured, such as udder quality, disposition, fleshing ability and moderate frame score.

Many producers ask Bolze for his opinion on a particular trait. "Anytime I talk about selection for a single trait, like marbling, I tend to temper those comments by explaining all those other traits that Angus females have excelled in for all these years. These traits have made the Angus female the base for most of the commercial cow herds," says Bolze.

## HENRY BERGFELD:

*Whatever the situation, a producer can make important selection decisions by finding bulls with proven numbers and building from there. Summitcrest used this formula to build its breeding program, using proven sires or testing their own sires and making fact-based decisions on the returned information, says Henry Bergfeld, manager.*



He also agrees with Bergfeld that females need to work in all types of environments. His view points to the same middle-of-the-road cattle and places additional emphasis on management.

"I would run the same cow in Virginia on lush, green orchard grass in late summer as I would in the New Mexico desert, but I would just run more of them," says Bolze. "It becomes a stocking rate issue and not a debate to advocate large swings in EPDs."

## Find acceptable ranges

The use of EPDs becomes an even greater management tool to assist producers in bull selection once the cow herd's needs have been targeted. Angus producers have the best selection of bulls in the breed's

history and an EPD system that can find bulls to fit any producer's needs. Bergfeld says we could select one Angus bull to serve as a terminal cross sire, but there are other bulls to choose from if you are producing replacement females.

Every producer needs to determine individual needs and match them to the cattle's environment. Whether a person is looking at calving ease, weaning weight or marbling, finding an acceptable range is more important than finding the extreme.

Bolze also emphasizes staying away from the extremes in selecting bulls. He suggests placing outside ranges on EPDs for various traits and encourages commercial bull buyers to purchase bulls from seedstock producers who manage cows in a similar way that they do.

So where do the most talked about numbers of today—carcass EPDs—fit into the selection scheme? After selecting for balanced performance EPDs, the next emphasis should be on carcass merit. The trend has swung back to the high consumer demand for a quality beef product. The key to regaining consumer confidence and business relies on producing a more acceptable product.

Summitcrest has accumulated data on more than 2,700 carcasses, which includes testing more than 35 sires, using 20 or more progeny for each.

Bergfeld stresses that producers need to know how their cattle fit into the industry. Despite several opportunities available to gather information through structured feedlot and carcass tests, many producers have never taken this step. Therefore, producers who have never gathered carcass data may have to rely on interim EPDs to assist them in selecting the next line of genetics.

Whatever the situation, a producer can make important selection decisions by finding bulls with proven numbers and building from there. This kind of formula built the Summitcrest breeding program through the use of proven sires or by testing their own sires and making fact-based decisions on the returned information.

## Ranking the carcass traits

Our three sources each differed slightly in their ranking by importance of carcass traits, but all agreed on the importance of staying away from extremes and selecting on all traits versus a single trait.

"Of course marbling would be first in carcass traits. In terms of Prime cattle or those reaching the upper two-thirds of Choice for the CAB Program, marbling has to be at the top of the selection process," says Bergfeld. "Not that every producer

needs the highest-marbling bull in the lot but bulls above breed average would add herd value."

Bergfeld's second consideration is ribeye area. Since ribeye area is in direct correlation to overall muscling, the producer should analyze the need for muscle in the herd.

## JOHN CROUCH:

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The third area to consider, according to Bergfeld, is percent retail product, which combines muscling and fat thickness. He focuses on a positive number for ribeye and a negative number for fat. He also believes fat thickness can be controlled through management in the feedyard.

Bergfeld has been quoted as having the genetics to produce cattle that consistently meet the CAB Program's carcass specifications 80% of the time. Singularly focusing on this same goal may not be the most efficient course for producers to take, since single-trait selection on bulls for marbling could result in a loss of weaning and yearling performance. The plus side is when the packer will compensate producers for what may be lost when more of the cattle meet *Certified Angus Beef* carcass specifications.

Crouch puts all EPDs on an even playing field. He encourages producers to keep all traits in proper perspective and use bulls that provide the most balanced set of numbers.

"Perception is total reality," states Crouch. "A negative number gives people an excuse not to use a bull. People need to understand what is average in the Angus breed. The only problem occurs when you stack negatives on top of negatives."

The average marbling score in the Angus breed is Small 85 (low Choice). This figure is up from 10 years ago when it was Small 15 (low Choice). It is only a matter of time before the average will move into the

Modest score (average Choice, the minimum required within Certified Angus Beef specifications).

When asked what repercussions may occur if the breed ever reaches a point when all bulls are similar in their EPDs, Crouch explains that nature does not allow this to happen.

“We may have quite a few bulls with equally balanced EPDs, but we will not be overrun with them. This is due to two things: generation interval and the number of genes attached to the chromosomes in cattle,” explains Crouch. “If we mated one bull to one cow two years in a row, there would be one billion, two hundred-fifty million recombinations of genes from those matings.”

As producers target a more balanced set of EPDs, says Crouch, the consistency may not be apparent right away, but cattle will be getting better.

Bolze also places carcass traits all on the same level. Like Bergfeld, he says producers need to know where the cow herd is in terms of the industry. In addition, he advocates the use of bulls that are moderate in all traits and encourages producers to side-step extremes.

Most producers are aware of the value-based pricing grids available. Bolze cautions

## RON BOLZE

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those producers who focus on the high-marbling bulls thinking the grids will provide big payoffs. The grids do work on higher-quality carcasses most of the time. Still, every attempt must be made to avoid potentially huge discounts on light or heavy carcasses, dark cutters and Yield Grade 4 carcasses. Producers must be certain the grid prices will offset a loss in production traits if the focus has been placed on a single trait.

Bolze agrees with Bergfeld when ranking most carcass traits. He does not place a huge emphasis on marbling, but says to keep it in line with the other traits. He then suggests using higher ribeye bulls on Angus-based cows and not worrying about ribeye on exotic-cross cows. Again, fat thickness is driven by management and can be considered the biggest factor in the yield grade equation.

Bergfeld notes the success of his program is contingent on the success of the CAB Program. He knows the genetics and beef that repeatedly sell are the greatest measurements of success. He explains that the CAB Program’s success is based on providing consumers with what they want and that is why the Program continues to grow while other branded beef marketers are having problems.

The American Angus Association has issued a goal of a 30% *Certified Angus Beef* product certification rate within the next 10 years.

If you have questions concerning cattle selection contact, Ron Bolze, director, progeny tests for carcass merit, at (785) 462-6404 or John Crouch, director, performance programs, at (816) 383-5100. 