

Target Cowherd Efficiency For Improved Profit

By Ben Spitzer, RAAA Communications/Member Services Director

With the incredible prices currently being realized by cattle producers across the United States, the thought of less profitable times is an unwanted headache that many producers don't wish to think about. After all, why rain on the parade when we're just starting to enjoy it? But, for those who wish to remain in business long term, now is the best time to make critical decisions to be in position for profitability even in the inevitable downturns of the market. Profitable beef production is a balancing act of inputs and outputs. Profitable cattle producers are the ones who are able to maximize output while simultaneously minimizing inputs.



Science has shown that reproduction is anywhere from two to ten times more important to profit than any other measurable trait.

The common denominator of profitable operations through the downturn of the cattle cycle will be efficient cowherds. Each cow in the herd must have a calf, lactate, rebreed within 90 days of calving, and wean her calf at an acceptable weight every year in order to earn her keep. Regardless of your marketing endpoint, whether it be selling calves at weaning, preconditioned calves, stockers, feeder cattle, or retaining ownership and marketing on a value added grid, an efficient cow herd is the foundation of any profitable cattle operation.

The primary trait of any profitable cow herd is reproduction. Science has shown that reproduction is anywhere from two to ten times more important to profit than any other measurable trait. After all, genetics are of little importance if a calf is not conceived and born alive. The most profitable cow at any time in the cattle cycle is the one that will calve unassisted, wean that calf, and rebreed for a 365 day calving interval. Without

having a large percentage of cows that fit these criteria, producers put themselves at an immense disadvantage.

The precursor to a reproductively fit cowherd is heifer fertility. Heifers that will cycle and conceive early are paramount to any profitable operation. The Red Angus Association's introduction of the Heifer Pregnancy (HPG) EPD allows producers to select bulls whose daughters will cycle and breed to calve as two year olds. In the days before RAAA's HPG EPD, producers were forced to use bull scrotal circumference to predict fertility in daughter progeny. Research showed that daughters sired by larger scrotal circumference sires reached puberty at an earlier age. In determining whether you want to look at scrotal circumference or HPG EPD to predict fertility in heifers you must ask yourself: do I want to select for females that reach puberty early, or do I want to select for heifers that get bred and calve as 2 year olds? The bottom line is they need

Target Cowherd Efficiency For Improved Profit

to get bred on time to calve around their second birthday.

Additionally, recent research has shown that scrotal circumference has a direct relationship to size of the animal. Thus, larger animals have larger scrotal circumference, and vice versa. So, if you select larger scrotal circumferenced bulls, you may be inadvertently selecting for larger framed animals.

Once a heifer enters the herd, you must evaluate her probability of staying in the herd long enough to pay for her development and/or purchase price. To help producers evaluate this longevity, RAAA developed the first Stayability (STAY) EPD in the beef cattle industry. STAY gives a prediction through percent probability that a

cow will stay in the herd and be productive at six years of age. Research has shown that, on average, a cow must produce at least five calves to pay for the costs of development and maintenance of that productive female.

One cannot talk about reproduction without also mentioning nutrition. The two are intimately related. Cows on a poor plane of nutrition will sacrifice reproduction before forfeiting any other biological process. It is important to make breeding decisions that will yield low maintenance females for the foundation of the cowherd. Ideally cows should calve in a body condition score of 5 in order to have enough energy reserves to lactate and rebreed.



To help producers evaluate longevity, RAAA developed the first Stayability (STAY) EPD in the beef cattle industry.

Heifers need a buffer and should calve in a BCS of 6 since they will be under more stress after having their first calf. Extensive research has shown that females with a BCS less than 5 approaching the breeding season have a longer post par-

Target Cowherd Efficiency For Improved Profit

tum interval (calving to first estrus or "heat") as well as having dramatically lower conception rates when they do cycle.

Until the release of the Maintenance Energy (ME) EPD by the Red Angus Association of America, producers had a hard time identifying genetics that would produce "easy doing" cows until it was too late. Using ME EPDs as part of your selection criteria for genetic decisions can make a positive change in profit by developing a more uniform cowherd with fewer differences in body condition from cow to cow due to maintenance energy. Cattle producers used to have to rely on the hit and miss method of developing young cows hoping for the

best and then culling those cows that either were too thin to rebreed or just couldn't hold up nutritionally with the rest of the herd. The ME EPD allows producers to have another selection tool at their disposal that gives a glimpse of what daughters of potential sires will be like in production before making those breeding decisions. The ME EPD is derived from cow body weight at weaning time coupled with body condition score (BCS) and Milk EPD. All weights are adjusted to a constant BCS to give a basis for comparison. Milk EPD is included because, even when dry, a high milking cow has more visceral mass that must be maintained, thus, she has higher maintenance energy requirements. Low maintenance energy requirements



Producers should also consider the production environment in which they operate in order to increase profits.

are vital to the success of your cattle operation. Since feed and pasture costs account for over 60 percent of total annual cow costs, it would be logical to assume that cows that will produce the same

Target Cowherd Efficiency For Improved Profit

product (calves) while requiring less forage to do so will increase your profit potential through decreased feed costs.

Many producers might be somewhat confused on how to best use ME EPD selection criteria. ME EPD should be used as a deciding factor among bulls with similar revenue traits (WW, YW, carcass). ME EPD is a very useful tool only if used properly (See example at end).

Producers should also consider the production environment in which they operate in order to increase profits. Daughters of a bull with a milk EPD of 25 would not work as well in an arid region such as New Mexico as they would in Tennessee. While heavy milk production may yield a heavier calf this year, what do you gain if she does not rebreed? Look at your environment and what you can realistically produce with the inputs available.

There has much discussion of frame size and what the "ideal" frame size might be. One would intuitively believe smaller framed cows are better, right? Not exactly, as we need to look at the end product and work backwards. The consumer demands that we produce beef that is of a consistent size and quality. Industry standards for beef carcasses are on average looking for 750 lb to 800 lb hot carcass weights. This allows for consistent size and ease of fabrication. With a 63 percent dressing percentage, a 1250 lb finished steer would yield a 788 lb carcass with their heifer mates having a carcass of approximately 688 lb. A good rule of thumb is for your brood cows to be about the same weight in a BCS of 5 as the finished steer you are trying to produce. A 5 to 6 frame cow seems about right on target for most parts of the country.

While all of these traits are individually important to profitable production in and of themselves, one must realize it is the combination of all of these traits and many others tailored to your environment and production goals that truly pave the way for profitable beef production. The development of, and diligence to, a planned breeding program selecting for economically relevant traits is the only way to ensure long term profitability in the beef industry.

- continued on page 28 -

An Example: Correct Application of the ME EPD

The data in Table 1 shows that daughters of bull A will, on average, require 15 fewer Mcals of energy each month (or $15 \times 12 = 180$ Mcals of energy each year). However, this does not mean that bull A sires more efficient cows, because energy requirement is just the input portion of the efficiency equation. When we try to maximize efficiency, we have to include the level of output. For this example, our output is weaning weight.

Table 1.

| Bull | ME EPD |
|------|---------------|
| A | 5 Mcal/Month |
| B | 20 Mcal/Month |

Table 2 shows ME EPDs for bulls A and B along with their Total Maternal, Heifer Pregnancy and Stayability EPDs. Now we can get a feel for which bull will produce the more efficient cows. Daughters of both bulls will have similar genetic merit for total pounds of calf weaned. However, daughters of bull A will require less feed to produce at the same level as daughters of bull B. Therefore, bull A will likely produce the more efficient daughters. Interpretation of the EPDs won't always be that simple, but it will always follow the same general principles.

Table 2.

| Bull | ME EPD | HPG EPD | ST EPD | Total Maternal EPD |
|------|---------------|---------|--------|--------------------|
| A | 5 Mcal/Month | 7 | 10 | 40 |
| B | 20 Mcal/Month | 7 | 10 | 40 |

More information on ME EPDs is available in the following ARA Magazines: October 2001 (pg. 20), February 2002 (pg. 78), March 2002 (pg. 32), October 2004 (pg. 26), July/August 2005 (pg 28) and December 2005 (pg. 40). ■