

Cattle Efficiency

By Dr. Bob Hough, RAAA Executive Secretary

The first thing one must do when talking about efficiency is decide who is your customer? We at Red Angus define a customer as a commercial cow/calf producer. Selling commercial bulls is, after all, the reason to have a seedstock industry, and building false economies with artificial prices can collapse as fast as it grew. If you agree that the seedstock industry's customers are commercial producers then the need for fads and extremes disappears, and it becomes of the utmost importance that cattle excel for economically relevant traits (ERTs).

The general areas usually thought of for genetic predictions are revenue traits such as growth and carcass EPDs; however, research has demonstrated that reproduction is from two to ten times more economically relevant than carcass traits. Does that mean producers should ignore carcass traits? No, we all must produce a palatable product, but it does show the folly of placing far less emphasis on reproduction, and the costs associated with suboptimum performance. The other major area that is often overlooked is the cost of cow maintenance. Feed is the major cost in any cow/calf operation. Let's now look at these groups of traits - growth, maintenance, carcass, and reproduction.

Growth has been with us as long as we have had EPDs including weaning weight, yearling weight and milk. What we must wonder is when is enough, enough? Sure, we all want fast growing cattle, but Angus are not Continental cattle nor should they be. The average Angus should be able to have at least a minimal amount of back grounding done to it without worrying about over weights. There is also a growing market for summer calving cows in which the calves will be roughed through the winter then grazed the next summer or grazed on wheat and sent to the feed yard weighing approximately 850 lbs. High growth, high milk cattle are not called for in this situation while in other scenarios the reverse may be true. The bottom line is one size does not fit all.

Maintenance requirements are a cost EPD that can often offset revenue EPDs of growth and milk. Mature cow maintenance is a combination of cow weight, body condition score and milking potential. Research has clearly shown that high milk cattle have higher organ and visceral mass resulting in higher maintenance requirements per pound whether an animal is lactating or not. Also, high growth cattle tend to reach larger mature sizes, thus they are higher maintenance. The point is if you only look at revenue EPDs (growth) and ignore cost (maintenance) you are only seeing half the picture, which is why Red Angus came out with the first Mature Cow Maintenance EPD. In tough environments, increasing revenue cannot be justified by the corresponding increase in expense, while in a lush environment where a producer is rotationally grazing cool season grasses and feeding corn silage in the winter, maintenance requirements are of little consequence. The good news is there are outliers. There are fast growing cattle with relatively small mature size, and there are moderately high maternal cattle that maintain their body condition.

Carcass EPDs have been a tremendous tool but in some cases they have been utilized as an agent for fads and extremes. Let's boil it down. Angus should marble, and the average

Red Angus does this very well. Getting very high marbling cattle is a luxury that injects Angus' strength into a crossbreeding system. Angus cattle are not heavy muscled cattle nor were they meant to be, as it is a maternal breed. Heavy muscling can be gained easily by injecting a modest amount of Continental blood into a cross breeding system. By the same token, we know that we have too many light muscled cattle in our Red Angus population. Light muscled cattle should be correctively mated to produce cattle that are average muscled that then also bring all the other good traits of Red Angus along with them.

I would like to take a moment to discuss ultrasound back fat (BF). At Red Angus we do not produce an EPD that includes ultrasound BF (all other Red Angus EPDs combine ultrasound and carcass data). The reason for this is the genetic correlation between ultrasound BF and ultrasound ribeye area, weaning direct and post weaning gain, which are all positive. Meaning negative selection pressure on ultrasound BF will also result in unintended negative selection pressure on these other traits. When you look at carcass data, carcass BF has a negative (good) genetic correlation with these traits, which is why we only use carcass BF for our BF EPD. This just makes cowboy sense; first, the bulls are lean at a year of age anyway and second, the good doing bulls are not the lean "railly" ones. Selecting for excessive leanness on yearling cattle will, in my opinion, lead you down the wrong path.

Reproduction is our last group of traits. At Red Angus, we describe reproduction with four EPDs - Calving Ease Direct (CED), Heifer Pregnancy (HP), Calving Ease Total Maternal (CETM), and Stayability (STAY) - which we think covers all the reproductive economically relevant traits. It starts with the probability of a sire's progeny being born unassisted, then the probability of getting pregnant if exposed to calve at two-years of age, having that calf unassisted, and then the probability of once entering the herd of staying in the herd until she is a six year old. The old knock on reproductive traits is they were too low in Heritability to make genetic progress. This is simply not true; what we lacked was the statistical models and computer processing power to properly estimate their Heritability. Whether you have the EPDs or not, selection for reproduction works, and inherent fertility is of the utmost economical importance.

Cattle efficiency is like a puzzle with revenue and costs. Revenue in the growth and carcass traits are familiar, highly Heritable and easy to go to extremes with. However, one must always remember the cost side of the equation and the reality that reproduction and maintenance have a huge impact on the bottom line; otherwise, we would all be raising Holsteins. Keeping cattle suited to their environment and avoiding fads and extremes takes a disciplined breeding program. In the end, I think the hardest thing for a purebred breeder to do is say, "my cattle are right for my customers, now I just want to make more of them."