

Cowherd Genetics

by Clint Berry, RAAA Commercial Marketing Director

It's that time of year...bull sale season. Cattlemen across the country are selecting new herdsire(s), hoping to add quality, consistency and value to their calf crop. Producers can spend hours combing through sale catalogs, attending production sales and private treaty events or working directly with their seedstock suppliers to find the right genetic packages at affordable prices.



Balanced trait selection with a preference to achieve environmental fit and marketing targets is the key to a profitable program.

Most cattlemen find this an exciting time; the opportunity to add fresh, new genetics to improve their cowherd. However, before those genetics can be successfully added, there are several questions that must be answered. The base genetics of the current cowherd must be understood. Not only the type and kind of cows making up the herd (cross-breds or purebreds, uniformed or mix-n-match), but also an understanding of how well the cowherd fits their environment and the producer's marketing and management plans. You have to know where you are and where you are going before selecting the successful genetics to move your program that direction. Once these steps have been addressed, a rancher can begin the selection process to add the superior genetics they are craving.

Red Angus cattle feature as "standard equipment" several convenience traits that include increased environmental adaptability through better heat tolerance with their red hide, docile temperaments and the ability to help unify a crossbred calf crop, increasing its marketability. The Red Angus Association also provides EPDs based on the philosophy of Economically Relevant Traits (ERT) which allows Red Angus to concentrate on providing genetic selection tools that directly affect a

commercial cattleman's profitability. Ensuring that unnecessary or redundant EPDs are avoided and simplifying the description of efficient beef production. Red Angus EPDs are divided into four main categories: Reproduction, Growth, Maintenance and Carcass. Selecting genetics that improve your cowherd requires a balanced selection in each of these categories.

Over the past decade and a half, both Carcass and Growth have received the greatest attention from the beef industry. Mainly because of the ability to measure the differences expressed through genetic change. Unfortunately, these traits return fewer dollars back to the ranch when compared to genetic improvement in the areas of Maintenance and Reproduction. There have been numerous university studies conducted in environments and markets spread across the country, and a consistent conclusion is that improved reproduction returns a minimum of four times the amount of additional growth and as much as ten times the amount when compared to improved carcass traits. When it comes to Maintenance, the value of genetic improvement is simple math. The single highest cost of production for ranchers is their annual feed bill. Whether they are a low cost producer that grazes year round or a pro-

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ducer that harvests crops and feeds six months out of the year, the cost to keep the cowherd fed is the greatest expense. Taking that fact into account, the industry standard says that a cow's maintenance requirements are 70% of the feed consumed. So basically, 70% of the highest cost of production goes strictly to the maintenance requirements of the cowherd, before any additional performance (reproduction, growth, carcass) can take place. It's easy to see how reducing the maintenance requirements of the cowherd can multiply the profitability of any operation. So when selecting herd sire(s), the easiest returns to see are the increases in Growth and Carcass, but the greatest return on investment comes through selecting for improved Maintenance and Reproduction traits.

The Red Angus Maintenance Energy

(ME) EPD allows producers to select bulls that will sire daughters that have lower energy requirements. Released by Red Angus in 2004, it's the beef industry's first look at the cost side of the production equation. The ME EPD predicts the differences in energy requirements of mature daughters of an individual and is expressed in Mega-calories per month. That translates to the differences in feed required to maintain body weight. The reduced cost of production is magnified over the course of the year and can quickly add up to differences in tons of feed required. The data components of the ME EPD are mature weight, body condition scores (BCS) and milk production. BCS and mature weights are taken at weaning time; this allows the mature weights to be standardized to body condition, allowing comparisons of similar weighted cattle with different BCS.

The Milk EPD is used in the equation because higher milking cattle have greater visceral organ mass, the machinery that makes the milk, this must be maintained even when the cow is not lactating.

Reproduction is made up of four traits and each are expressed in probability, meaning the higher the EPD, the more likely the positive observation. Calving Ease Direct (CED) predicts the probability of calves being born unassisted out of two year old heifers. Selecting on actual birth weight alone is flawed because it is directly affected by non-genetic factors such as weather and management. While the Birth Weight (BW) EPD takes into account these differences, CED goes a step further by including BW plus other factors such as gestation length, calf shape, etc. Producers retaining their own replacement heifers expect these

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females to calve on their own. Calving Ease Maternal (CEM) predicts the probability of a given animal's daughters calving unassisted at two years old. CEM takes into account not only BW, but most importantly, actual calving ease scores reported from Red Angus producers. Heifer Pregnancy (HPG) predicts the probability of heifers conceiving to calve at two years of age. HPG is figured through the differences of heifers exposed to breeding vs. the heifers that actually calve. While most breeds rely on scrotal circumference measurements or SC EPDs as an indicator trait to fertility, Red Angus utilizes HPG to select for fertility through pregnant heifers. Stayability (STAY) EPD predicts the probability that a bull's daughters will remain in the herd until at least the age of six. Age six is the industry standard of the break even point on replacement females. If RAAA fails to receive a calving observation on a female listed on a member's inventory, she receives a negative observation which directly affects the STAY EPD for the animals in her pedigree. Females that don't stay productive in the herd cost cattlemen money as well as contributing to a higher rate of replacements that producers must retain instead of being cash cropped.

Taking time to understand, select and implement genetics that will positively affect both Maintenance and Reproduction will add more dollars to a rancher's pocket. While Growth and Carcass traits are important to balance in the equation and add value to the calf crop, the greatest improvement in profitability will be realized by placing selection pressure on the traits that are not as easily measured. Balanced trait selection with a preference to achieve environmental fit and marketing targets is the key to a profitable program. Don't be afraid to require your animals to "do it all", that is the strength of Red Angus. ■