# Profit $implified...

## Multi-Breed EPD Base simplifies selection

**Availability of time and being able to digest increasing volumes of information have evolved into two of Ranchers' greatest challenges. Perhaps nowhere more pronounced than in making genetic selection decisions. Ranchers must:**

- Find the breed or breeds that fit your production environment and marketing strategy.
- Identify breeders whose management, selection, customer service, and integrity fits both you and your cowherd.
- Pour through the mountains of EPDs and pedigrees then study structure and phenotype to locate those bulls that will move your herd towards production and end product goals.
- Learn it all over again each time a new breed is added through a structured crossbreeding program.

Over the last 3-4 decades animal scientists have concentrated on building predictions (EPDs) for an increasing number of traits (some more relevant to profitability than others), refining prediction models so that the EPDs used to predict those traits are more precise and running biannual genetic evaluation for various breeds. Efforts to simplify producers' selection process have only received more recent consideration – with little to no effort being focused across breed associations. Two summers ago that all changed. Red Angus, who had been running joint genetic evaluation with Canadian Angus for the past decade, pooled that dataset with the American Simmental Association, which already contained significant volumes of Angus and Red Angus data as well as other breeds. The result of this collaboration was the world's largest multi-breed dataset with over 10 million animal records. This summer, Red Angus and Simmental will again combine to give the beef industry something cattlemen and women have been asking for since the advent of genetic evaluation…**EPDs that can be compared across breeds.**

**Starting with the Fall 2012 EPDs, all animals in Red Angus and Simmental's multi-breed database will be described using the same language. That is, their EPDs will be published on the same multi-breed base and scale. Selection for Growth (BW, WW, YW, Milk) and Carcass (MARB, YG, CW, REA, FAT) EPDs will be greatly simplified as commercial customers will be able to directly compare these EPDs across breeds as well as registered hybrids/composites seedstock.**

## Yes, Red Angus EPDs will look different.

**Here are some things you'll notice immediately.**

- The Fall 2012 breed averages (and subsequent runs) for Active Dams, Proven Sires, and non-parent bulls and females will be different from the Spring 2012 (and prior runs)
- The Fall 2012 EPDs for the top 10% of the breed or bottom 10% of the breed for any of these traits in the Fall 2012 will be different as compared to previous runs.

**But, most importantly, the rank between animals will not change.**

- A Power Bull last spring will be a Power Bull on the new multi-breed base.
- A "Carcass" bull will still be a Carcass bull
- A low birth weight bull will still be a low birth weight bull relative to the rest of the Red Angus breed.

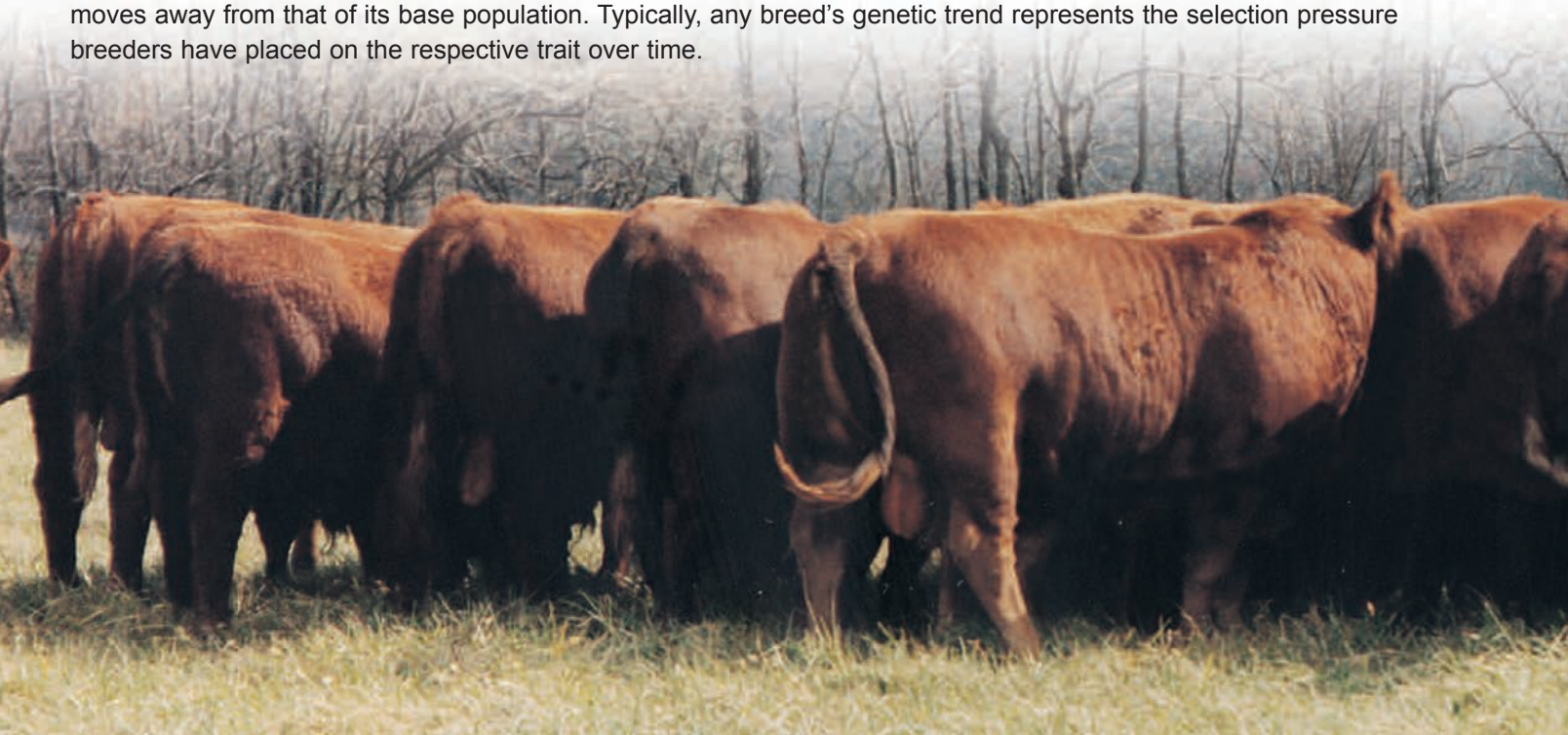
**Table 1 - "Breed Average" Sires EPD on the new Multi-Breed Base vs. Prior RAAA Base.**

| Trait | BW | WW | YW | Milk | Marb | YG | CW | REA | FAT |
|---|---|---|---|---|---|---|---|---|---|
| Multi Breed Average Sire | -1.2 | 55 | 83 | 19 | .39 | .00 | 18 | .13 | 0.0 |
| Prior RAAA Base Average Sire | -0.5 | 33 | 62 | 17 | .09 | -.02 | 37 | .07 | 0.0 |

As you can see a "Proven" sire that previously had a 62 YW EPD now has an 83 YW EPD…but he is still only average. Obviously, he's the same bull, so he's still an average bull…his 21 pound increase in YW EPD mirrors RAAA's 21 pound increase in the YW EPD BASE.

## What is BASE?

For decades, each breed association has presented their EPDs in their own language (the base). Base is no more than a reference point for any trait against which subsequent generations of animals are compared. While some breeds pick a given year (several generations of cattle ago), as their base year, RAAA has historically set the base as the average EPDs of a specific group of high accuracy sires. Either case is intended to assure that the base population that future calf crops are to be measured against remains stable (does not change). That is the extent of the "science" involved with setting the base. A breed's genetic trend for any given trait is reflected by the rate at which its breed average EPD moves away from that of its base population. Typically, any breed's genetic trend represents the selection pressure breeders have placed on the respective trait over time.



## How this came to be...

Presenting RAAA and ASA EPDs on a common base was a recommendation of the Strategic Plan developed by the Multi-breed Technical Advancement Committee (MB TAC). This committee is populated with Red Angus and Simmental Breeders, Association breed improvement staff, and some of the leading quantitative and molecular geneticists from academia, and USDA-Meat Animal Research Center (MARC).

The committee's purpose is to guide advancements in the multi-breed genetic evaluation conducted through the collaboration of RAAA and ASA. RAAA and ASA Board of Directors accepted the MB TAC's recommendations, and requested a joint meeting of their Breed Improvement Committees and moderated by the chairman of the TAC for the purpose of developing a common EPD base for all traits predicted through the multi-breed genetic evaluation. Currently, this involves growth and carcass traits, with the ultimate goal of moving all traits to the multi-breed genetic evaluation model, and presented on a common EPD base. The joint committees recommended, and both RAAA and ASA Boards approved, the multi-breed common base represented by the "Average EPDs" shown in Table 1.

Of course, Table 1 represents an animal whose EPDs are breed average for all traits. In reality few such animals actually exist. Buf Crk Cherokee Canyon 4912 has sired more registered progeny than any Red Angus bull in history. Table 2 – shows his EPDs on the new Multi Breed base compared against his EPDs on the prior RAAA Base.

**Table 2: Buf Crk Cherokee Canyon 4912 EPDs on "Old" RAAA Base vs. "New" Multi-Breed Base.**

| Trait | BW | WW | YW | Milk | Marb | YG | CW | REA | FAT |
|---|---|---|---|---|---|---|---|---|---|
| "Old" RAAA Base<br>Buf Crk Cherokee Canyon 4912 | -0.7 | 45 | 69 | 14 | .19 | -.20 | 40 | .67 | .01 |
| Percentile Rank (Old) | 44% | 18% | 38% | 65% | 29% | 6% | 43% | 2% | 44% |
| "New" Multi Breed Base<br>Buf Crk Cherokee Canyon 4912 | -1.4 | 67 | 90 | 16 | .49 | -.18 | 21 | .73 | .01 |
| Percentile Rank (New) | 44% | 18% | 38% | 65% | 29% | 6% | 43% | 2% | 44% |

We see that Cherokee Canyon's WW EPD increased 22 pounds, his YW EPD increased 21 pounds, his Milk EPD is now 2 pounds higher, his CW EPD is 19 pounds lower, and his MARB EPD increased by almost 1/3 of a Marbling Score...But his rank within the breed didn't change. This example will be the same for every animal in the RAAA database. But, just like "Cherokee Canyon" they will not "rerank" relative to other similar animals (non parent bulls, active dams, proven sires, etc.).

These New Multi-Breed EPDs look favorable for Red Angus… As you have noticed, the new base certainly presents our genetic predictions in a more positive light. The prior bases used by both Simmental and Red Angus undervalued both breed's perceived genetic merit relative to other breeds. Thus, the (New) Multi-Breed base doesn't over exaggerate Red Angus; rather it presents the breed transparently and on a more equal playing field vs. other breeds.

## Study Percentile Ranks...

A powerful tool to rely upon in the learning of the new Multi-breed base, are the Red Angus EPD percentiles which are presented along with all active animals' EPDs. Notice that the differences in EPD values that we saw between the (Old) RAAA Single Breed Base and the (New) Multi-Breed Base in Table 1 for that "Breed Average" Animal are the same differences that we saw in Table 2 for Cherokee Canyon. And, those differences are exactly the same in the percentiles as demonstrated in Table 3.

**Table 3: Percentile Rank Table of (New) Multi Breed Base vs. (Old) RAAA Single Breed Base.**

| "NEW" Multi Breed Base | BW | WW | YW | Milk | MARB | YG | CW | REA | FAT |
|---|---|---|---|---|---|---|---|---|---|
| 1% | -7.2 | 88 | 136 | 35 | 0.91 | -0.26 | 54 | 0.72 | -0.06 |
| 10% | -4.5 | 73 | 112 | 28 | 0.68 | -0.15 | 38 | 0.45 | -0.03 |
| 20% | -3.4 | 67 | 102 | 25 | 0.58 | -0.10 | 31 | 0.34 | -0.02 |
| 40% | -1.9 | 59 | 89 | 21 | 0.44 | -0.03 | 22 | 0.20 | -0.01 |
| 60% | -0.5 | 51 | 77 | 17 | 0.33 | 0.03 | 14 | 0.07 | 0.01 |
| 80% | 1.0 | 43 | 64 | 13 | 0.19 | 0.09 | 5 | -0.08 | 0.02 |
| 90% | 2.1 | 37 | 54 | 10 | 0.09 | 0.14 | -2 | -0.19 | 0.03 |
| 95% | 3.0 | 32 | 46 | 7 | 0.01 | 0.18 | -8 | -0.28 | 0.04 |
| "Old" RAAA BASE | BW | WW | YW | Milk | MARB | YG | CW | REA | FAT |
| 1% | -6.5 | 66 | 115 | 33 | 0.61 | -0.28 | 73 | 0.66 | -0.06 |
| 10% | -3.8 | 51 | 91 | 26 | 0.38 | -0.17 | 57 | 0.39 | -0.03 |
| 20% | -2.7 | 45 | 81 | 23 | 0.28 | -0.12 | 50 | 0.28 | -0.02 |
| 40% | -1.2 | 37 | 68 | 19 | 0.14 | -0.05 | 41 | 0.14 | -0.01 |
| 60% | 0.2 | 29 | 56 | 15 | 0.03 | 0.01 | 33 | 0.01 | 0.01 |
| 80% | 1.7 | 21 | 43 | 11 | -0.11 | 0.07 | 24 | -0.14 | 0.02 |
| 90% | 2.8 | 15 | 33 | 8 | -0.21 | 0.12 | 17 | -0.25 | 0.03 |
| 95% | 3.7 | 10 | 25 | 5 | -0.29 | 0.16 | 11 | -0.34 | 0.04 |

Percentile Ranks are an easy reference of how any Red Angus animal ranks as compared to respective Red Angus sub-populations, i.e. Sire Summary Sires, Active Dams, Non-Parent bulls, etc. It's important to realize that although the Multi-Breed base allows for the direct comparison of Red Angus and Simmental EPDs, the percent ranks for Red Angus animals will continue to simply compare the genetics of Red Angus animals against other Red Angus. Thus, an animal that was in the top 10% for growth under the old Red Angus base will still be in the top 10% for growth in the new Red Angus Multi-Breed base.

**Red Angus' success has resulted from its commitment to provide tools to beef industry which ensure the sustained profitability of the ranch families who are our primary customer. Our Association's willingness to grow and adapt allowed innovations such as THR and the FCCP to propel Red Angus to its current status.**

**Describing Red Angus and Simmental seedstock will provide our commercial customers with the industry's most reliable and user friendly genetic selection tools and is one more strategy implemented to ensure success of our industry stakeholders.**

*Ranch Tested. Rancher Trusted.*

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