

PTP Shows Contribute to Our Success

Part III Growth and Frame

With Steve Reimer, Curt Rincker, Marty Ropp, Jerry Lipsey

In two previous articles, we discussed PTP Show evaluations of skeletal soundness and body composition, specifically, fat and muscle. The purpose of these articles is to assess the potential of PTP Show judge selection of having an impact on SimGenetic genetic change. Obviously, judges' selections at shows have had influence on both the reality and perception of breed types.

Many decades ago, show ring winners were compact, fat, seemingly, slow growing cattle. By the time Simmental and other Continental breeds were available in the U.S., show winner selection had taken a 180-degree turn, and in the 1980s, purple ribbons adorned huge framed, lean cattle that offered birth weight, cow size and marbling challenges.

Today, our PTP Show winners are typically 5 and 6 framed, more muscular and heavier conditioned (more external fat) than cattle exhibited 20 years ago. In Part I, we generally agreed that skeletal soundness is reasonably evaluated by visual assessment of conformation. However, attaching show ring soundness differences to reproduction or production traits is difficult because we do not database soundness scores like weaning weights or ultrasound data. Our common sense tells us that better soundness is related to better animal performance, but there is no doubt, animal performance (growth, stay and carcass) is better related to the EPDs than any normal visual signals we have.

This edition, we discuss growth and frame size. What impact do these traits have on PTP Show success, and what is happening to our Simmental genetic trends? Are shows impacting both our members' and industry perceptions of proper growth and size?

Frame size

It seems frame size is an easy trait to change. Essentially every breed made cattle smaller in the 50s, larger in the 70s, and smaller again in the 90s. And, almost none of these had frame score EPDs, so visual selection was effective. Many university research projects looked at the implications of frame size and did a good job of describing the associated effects of hip or shoulder height (as an indicator trait) on economically relevant traits (ERTs).

We doubt if we have to explain all the details of how adolescent frame size differences impact future growth, leanness, and potential mature size. There's little doubt, that frame size affects the expected growth, leanness and days-to-finish of feeder cattle. We know that among the small, medium and large framed feeder cattle marketed each week, buyers have a perception of some "frame size boundaries" that fit into their feedyard customers' expectations of performance, harvest dates and yield grade potentials. In this regard, we have seen discount prices on feeder cattle that are too small or too big framed.

The downstream market situations we describe above are much different than the circumstances at PTP Shows. Each PTP entry has EPDs defining growth and carcass trait potential, so what role can frame score play? Before we answer some or none, it's appropriate to discuss the factors of frame score measurements, and the variances of the data.

On the Internet, search Beef Improvement Federation (www.beefimprovement.org), click Library, and click BIF Guidelines — 9th Edition, scroll to pages 28–30. There you can read and see all the details of taking hip heights and converting the inches to frame scores. Certainly, nearly everyone reading this has witnessed hip height measurements



being taken at shows or during yearling data collections. Like most other measurements, it's easy to be off ½ inch depending on the chute designs and animals' docility.

Assume you were measuring a bull 330 days old, and you recorded 50 inches. Then the calculated frame score would be 5.97. But what if you measured ½ inch too large or small? 49.5 or 50.0 inches would calculate frame scores of 5.72 and 6.22 respectively. Under these circumstances, at a PTP Show, this bull's frame score might be displayed somewhere between 5.7 and 6.2, and the question becomes, does it make any difference in the judges' or audiences' perceptions?

Exhibitors say they want their entries to be bigger than 5.0, and smaller than 7.0, and we suspect some PTP Show judges would not prefer to put blue or purple on entries which the audience envision as too small or too large. In ASA's recent PTP Shows, there aren't many outside those boundaries. Only one or two animals in the entire 2013 NWSS Open Bulls and Females were smaller than 5.0, or larger than 7.0.

Frame size is not an ERT unless you're trying to market cattle outside perceived boundaries. Without doubt, many bull buyers, feeder cattle agents, or packer buyers will grumble or only offer less for cattle that just seem out-of-bounds on skeletal size. Maybe it's a good thing that PTP show winners have traditionally been our 5 and 6 frame cattle.

Weighing and PTP Shows

We've met some seedstock producers who weighed calves at weaning in the 1950s. Certainly, by the 60s, university extension specialists were "planting the seeds" of what would become of ASA's founding Fathers vision of performance testing and seedstock genetic improvement. ASA tied registration with mandatory weaning weight submission. Even though Red Angus had done the same since 1954, by the early 70s, Simmental breeders lead the entire beef breed industry into tying growth performance to seedstock production.

When SimGenetic leaders envisioned the development of PTP Shows, it was a no-brainer to weigh and frame-measure PTP Show entries and provide the judges and audiences with the measurements. The pride of reinforcing the perception that Simmental was a "performance breed" enticed us into taking measurements on cattle that had come from many, many environments. Ironically, every one of our academic and industry genetic consultants warned us that we must never compare non-contemporary data. That's why we must use EPDs. EPDs are the only way to compare non-contemporaries.

Given more time and more experiences, we now know that weights taken at shows are at best meaningless and at worst, misleading because of the very large differences in nutrition, weather and management. The only useful weight information at PTP Shows are Weaning and Yearling Weight EPDs. Even though some show management continue to provide show-day weights, animal scientists have proven conclusively that only EPDs accurately express growth trait genetic differences. Other than salvage value when they've completed usefulness as parents, the only weights that matter when selecting seedstock are genetic weights (EPDs) impacting the economics of producing cattle and beef.

Some time ago, we heard a PTP Judge say, "I don't know what happens where you live, but in my country, we sell cattle by the pound." Unfortunately, the judge was trying to justify using differences in phenotypic weights (taken at the show) to explain the class placing.

Of course, nearly all cattle transactions (except for seedstock) are weight-based, but what this judge forgets was, the only weights that matter in seedstock selection are the progeny weights. The phenotypic weights this judge referred to were far, far less related to the performance of progeny than the EPDs presented.

Weighing cattle at shows only reflects herdsmanship. Providing good nutrition, comfortable housing and excellent health management is good animal husbandry, and undoubtedly, helps cattle grow. However, we can't change the DNA that impacts growth traits with herdsmanship.

We strongly suggest we do not weigh at PTP shows because:

- A. The weights are meaningless and distracting to everyone.
- B. The most powerful genetic information concerning growth rates are Weaning and Yearling EPDs.
- C. Relieving the pressure for impressive phenotypic weights could result in leaner, more practically conditioned entries. Hopefully, fewer cattle in PTP Shows would suffer from the negative effects of obesity on their lifelong reproduction.
- D. PTP show judges and audiences would have more success evaluating the entries because they could be leaner and more real world conditioned.

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Part III

Questions and Answers:

Question: *In recent years, PTP Show exhibitors have seemingly reduced both the frame scores and variance of frame scores of their entries. Do you still use the frame score information to make placing decisions?*

Reimer: I think we are past the use of frame score as much of an influential part of placing decisions. Few entries have scores that would put them outside of acceptable numbers if all other traits were strong.

Rincker: I look at the Frame Scores to confirm what I think I am seeing and while 95% and higher of the PTP cattle are neither too small or too large framed, viewing the numerical Frame Score provides a hard backup for judges to cattle that fall within an acceptable frame score range. I do not directly use the Frame Score to make placing decisions with the exception of cattle that fall well outside of the range.

Ropp: Frame, like everything else is subject to preference and, yes, most judges have a preference, or more often a range for ideal frame size. I've always said that there are in fact only three frame sizes, too big, too small and just fine. This range can certainly be adjusted up or down base on your region of the country, crossbreeding strategy, marketing target and even your vision for the future of this business. It doesn't mean that you necessarily disqualify animals for not fitting into a useful range, but you do begin to discriminate against them to some extent. The other unplanned benefit to measuring frame scores in shows is that it discourages cattle to be "mis-aged", because of the undesirably large frame scores that can accompany this misrepresentation especially in the calf divisions.

Question: *Do you think frame score 4 is too small, and frame score 7 is too large?*

Reimer: It's hard for me to draw lines on the frame score chart for acceptability. As we evaluate cattle that are sub 5 or 7 plus frame, the tolerance for less than ideal physical traits or numerical values becomes tighter yet and they sort themselves.

Rincker: As discussed in the article there can be differences in hip height measurements created by the chute design, head height during measurement, disposition, and even in the method of measuring, that only becomes more accentuated when we adjust for a year of age. For that reason, cattle with assigned frame score values in the 4 and 7 need to be considered to confirm if they truly are outside the acceptable range.

Ropp: Personally, I have more concern about the over 7's (remember that a 7.0 is a "7" and a 7.9 is also a "7") than the 4's because of issues associated with mature size and lack of slaughter cattle marketing flexibility that can accompany frame 7 and higher cattle. A significant amount of the discrimination against SimGenetics in the 80's, 90's and early 2000's were due to these issues. Several factors however have changed since then and need to be considered. First in defense of larger frame size, ideal harvest and carcass weights have risen significantly and beg for a tick more frame to help keep those cattle leaner. Second, on the other side, the breeds we hope to complement with SimGenetics in a crossbreeding program have added a huge amount of frame and mature size to their genetic offerings in the past 20 years.

Remember that when big framed cattle were in vogue, the British breeds they were designed to use with were 1-3 frame cattle, not today's 4-7 framed British genetics. With today's crazy high feed prices the effect of mature size on the cost of cowherd maintenance is a huge issue as well. Thirdly, we have added significant muscling to today's cattle so even a 4 frame steer today, with above average thickness can easily produce a 1,000 pound carcass and run right up against levels of discount. This was not as common 20 years ago.

It is important to remember too that frame size is not an exact measurement, but is a solid guide. Therefore, allowing for a half frame size error up or down is logical especially in young cattle where frame size that day is merely a good estimate of where it may end up at maturity.

Considering everything, middle 4 to maximum 6 seems logical, but that is just my opinion.



Question: *We agreed from previous discussions that condition score 5 and 6 cows are easier to get and keep pregnant. Since positioning SimGenetics, as the most-valuable Continental maternal seedstock source is our goal, aren't conservative framed cattle preferable?*

Reimer: Without question, nothing about the cattle business is more economically important than reproduction. Initially, the race to larger framed cattle was to increase performance and decrease fat, the mark was overshot through years of single trait selection. The change from the 1980's era showring winners to more functional producing cattle has been through an evolving balanced multi-trait evaluation that has lead us to more moderate framed cattle that still excel in performance.

Rincker: I do think that our SimGenetic cattle have evolved to what is by far the largest majority of the cattle being moderate framed and easier to keep and maintain. The bigger frame score cattle have to be more intensely managed to keep and maintain both body condition and reproductive efficiency. Ultimately cattle profitability will get and keep our herds within the right frame score range.

Ropp: On the cow maintenance side, most would agree 100% and some would preach much smaller is actually preferable. Cattle feeders do not agree however and they are beginning to use their checkbooks to show their preferences for cattle that are somewhat larger (5.0 to 6.9) for frame size, though they still are not particularly interested in very large framed cattle. This discourse is important to understand moving forward and cries out for more crossbreeding system use.

Question: *Why have we continued to weigh non-contemporary cattle at shows? Is there a lack of trust in our Weaning and Yearling EPDs?*

Reimer: Weight and frame score numbers taken from non-contemporaries at shows do have debatable accuracy levels for a variety of reasons but they still have value. It is not a lack of trust in the EPD's but a fact that those numbers will also change as more data is applied.

Rincker: I believe we have weighed in the past to measure actual performance and in many cases the Weaning and Yearling EPDs confirm it. Tradition is why we have weighed, and yet today and going forward the higher accuracy values achieved by our 50K testing will result in more EPD reliability and likely transitioning away from weighing our breeding show cattle.

Ropp: I can only see one or two good reasons to weigh cattle at shows and one is to highlight the fact that the industry discussed "ideal" of an 1100 to 1300 pound cow



is not being selected for in this arena. There has been a long running, mostly positive trend toward selecting cattle with more body depth and greater thickness. When this type of cattle are fed at the level that most are for exhibition, typical weight ranges for bred heifers often are between 1350 and 1900 pounds. Perhaps some downward pressure on the extreme weights associated with our bred heifer divisions could be a possible move by more industry-focused evaluators.

Question: *If you review recent PTP Show data, it is fairly common to see some entries with low YEPDs (Purebred average is 91). Is there any reason extreme high growth cattle are not commonly exhibited?*

Reimer: Cattle that excel dramatically in yearling growth, often present less than desirable traits in other areas. Most judges will utilize cattle that are structurally sound, balanced in their numerical values with as much strength in those numbers as is available to them and excel in phenotype. Apparently the selection process applied by the breeder has eliminated the "extreme high growth" cattle for a reason.

Rincker: As a breed we are getting better regarding our YEPDs and yet we are challenged by the top cows being bred to leading bulls in some cases regardless of their genetic strength for growth. Exhibitors select cattle for the showstring with phenotypic superiority and as long as those cattle are within the "acceptable range of EPDs" with no so-called "outliers" in the number columns, they get shown. High growth EPD cattle that also look the part in type and kind are my strong preference when evaluating a PTP Show.

Ropp: I don't know. It does seem harder to keep high growth genetics from losing "show phenotype" when given ideal nutrition and management to grow at the rate they are capable of. Some of today's most popular breeds for exhibition barely have any value from a growth and food production perspective. In fact their slow growth allows them to be exhibited for a longer period of time and may actually enhance their exhibition value because of that retarded growth rate. ♦