

PTP Shows Contribute to Our Success

Part II

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

Evaluating and Emphasizing Muscle and Fat in Shows.

This is an ongoing discussion of the possibilities of show ring selections impacting the beef industry popularity of SimGenetics.

There is widespread consensus that selection for show winners decades ago had long lasting, near disastrous impacts on Simmental and Simbrah beef industry demand. Consequently, leaders of the American Simmental Association established PTP Shows in an effort to provide judges and audiences with information crucial to SimGenetic seedstock marketing success.

Since the first PTP Shows of the early 1990s, comments by both spectators and exhibitors always include, “the judge spent all day with his head buried in the paper,” to “those judges paid no attention to the numbers.” We doubt if the controversy will ever end; however, there seems to be less debate in recent years that soundness, size, and composition (the conformation of exhibited cattle) are now days, more industry-friendly. Part I focused on skeletal soundness.

Positioning SimGenetics as the **most-valuable Continental maternal seedstock source** meant we had to account for every EPD that impacts cowherd profits. ASA’s All Purpose Index (API) does that. It is imperative to use an economic index to measure the genetic contributions to cowherd worth if we are to convince the cattle producers of this nation that Simmental influence will improve their financial success. In the April edition of *the Register*, we tried to evaluate if show ring emphasis on skeletal soundness traits had any impact on our downstream customers’ vision of SimGenetic value. This time, we explore how muscling and fatness impacts exhibition success, and if show ring trends are friendly to future beef business demand for Simmental genes.

Our role is genetic contributions to producing better food; obviously we eat beef, which is a perfect combination of muscle and fat. Ideally, our industry will produce great tasting beef with just the right amount of intramuscular fat and minimal external waste fat. We have already committed ourselves to wanting a maternal position in beef systems. Too many believe that defines us as not prioritizing carcass traits, which is completely foolish.

If we plan for more and more U.S. cows to benefit from Simmental genetics, our reputation for contributing to both cowherd profit and ideal carcasses must be unquestioned. The ASA Carcass Merit Program (CMP) is among the best of all breeds. From CMP and member ultrasound data, ASA produces some of the most accurate Backfat, Marbling and Ribeye EPDs in genetic evaluation history. So, where does that put show ring evaluations and comments on maintaining and improving maternal and carcass traits?

Let’s talk fat first: Certainly, visual fatness is more management-driven than the environmental factors that affect muscling. Variation of nutrition, health, weather, let alone, animal age differences make for potentially huge variation in condition (fatness) of both bulls and heifers. Since there is massive fat accumulation in the bovine lower body, we wonder if comments concerning depth-of-rib aren’t more fat-driven than real differences in skeletal dimensions. In any event, we have experienced many years of seemingly preferential placement/preference for deeper bodied, and perhaps, fatter Simmental influenced cattle.

It’s imperative that we digress a moment and think about the fat accumulation consequences of reproductive cattle vs. finished cattle producing Select, Choice and Prime carcasses. Science has proven that proper management resulting in cow condition scores 5 and 6 makes for higher pregnancy rates than cows with scores of 4 or less (condition scores higher than 6 do not improve preg. rates). On the other hand, if we are ever to produce 70% Choice and 70% YG 2 carcasses, we have to control carcass backfat. Is there a clear-cut relationship between breeding animal fatness and carcass fatness?



Of course, there is a relationship if the animals (heifers or bulls) are birth contemporaries. For more than 20 years, breed association databases proved that information from ultrasounded contemporary bulls and heifers provide powerful influences on our carcass EPDs. In the same environment, animals with more “carcass fat genes” nearly always get fatter than those with less genetic drive to fatten. Essentially, every breed association uses ultrasounded contemporaries to produce carcass EPDs.

So, how can SimGenetics have it both ways, that is, pragmatic body fat storage in breeding animals and industry-leading finished cattle carcass yield grades?

Using deductive reasoning, feed and forages are expensive, the most costly item of cowherd enterprises. All of us would like to use these precious resources efficiently, and judges often comment on and seem to prefer easy-keeping qualities. We assume that judges are taking the perspective that all the animals in the class have had access to similar nutrition and environment; subsequently, judges perceive the fatter ones as easier keepers. But is this true?

Not necessarily. Fatter cattle could just be individuals that ate more (hence, no more efficient), grew in a more comfortable environment, or simply offered more feed by owner-exhibitors in order to attract judges to deeper bodied cattle with copious external fat deposits? This appeal for fatter show females assumes they get and stay pregnant easier, i.e. they are easier to keep in condition scores 5 or 6 through all kinds of weather. But, how do judges decide if cattle are too lean or too fat?

If you think this is confusing, it is! The most-proven genetics for Simmental mature-cow reproduction (fertile longevity) are contained in Stay EPDs. The most important genetics for backfat and yield grade are constantly presented in the ASA Carcass EPDs.

Since more than 40,000 carcasses and 100,000 ultrasounds have contributed to the accuracy of ASA EPDs, effectiveness of genetic selection for carcass traits strongly favors EPDs over visual evaluation of one animal in the show ring; even though we contend muscularity is reasonably assessed by conformation (you’ll read this later). Since nearly

all the animals in show ring classes are non-contemporaries, visual evaluation for genetic fatness in shows is very questionable. Stay EPD is a much more powerful predictor of cow fertile longevity than show ring external fat.

A note before we move on to the subject of muscularity. We occasionally hear judges criticize obese animals, typically heifers. For decades, animal husbandry has documented reduced milk and reproduction resulting from over-fattening. In addition, cow condition scores over 6 do not result in increased pregnancy rates. Clearly, there is a law of diminishing returns relative to cow fatness and how much judges should prioritize “easy-keeping” heifers.

The position of SimGenetics’ role in crossbred cows is a “tight-wire act”. Somehow, we must provide cow-genetics that easily accumulate enough fat for cow condition scores 5 and 6; yet, advance our reputation for superior carcass yield grades in their carcass progeny.

Is visual evaluation for muscling effective? There’s every reason to discuss muscling differences in meat animals. By preferentially growing muscle vs. fat or bone, we can greatly influence the efficiency of producing a great tasting, protein-rich food. Carcass yield grades are reasonably good indicators of percentage muscle in market animals, and ribeye area is most commonly used to measure differences in muscle thickness.

Similar to our comments of managing carcass fat, the thousands of carcasses resulting from the ASA Carcass Merit Program provide the solid foundation for ASA’s carcass trait EPDs. If modifying carcass traits is the goal, no information source rivals our EPDs. So, what does that leave for muscling evaluation in shows?

Bull and heifer muscularity, evaluated in terms of body shape is not as strongly affected as fatness by environmental differences. Likely, judges do a good job of detecting muscularity, so the question is, are we having any impact on genetics for muscling through PTP Shows?

Simmental genetic trend for REA has been steeply positive since 1990, and PTP Shows were initiated then. So, isn’t it logical to assume the PTP concept had something to do with the trend for greater muscularity? Contrary to that notion, PTP Show printed programs have seldom provided REA EPDs, so judges had little chance to make decisions from our database information.

In addition, over the same years, Angus and Hereford genetic trends for REA are just as positively steep as Simmental, and they did not routinely use genetic data in shows. The best conclusion is that in the early 1990s, seedstock producers intensified visual selection for muscularity. Our industries apparently decided the 80s commonly used term, “late maturing, long muscled”, was not effectively advancing meat production, and we began to focus on improving muscle shape. There’s proof this was not just a show ring function.

The ASA CMP didn’t produce progeny carcass data impacting EPDs until 1999, but our genetic trend for REA EPD was clearly intensified by then. Clearly, SimGenetic producers were using visual appraisal for sire selection, and this wasn’t just a show ring function. If you review historic sires that had great influence on “performance cattle”, most had significantly positive REA EPDs. Visual appraisal for muscling in seedstock is effective, and it is extremely effective when combined with EPDs.

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Part II

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Questions and Answers:

Question: *How do you decide if an animal (in the show ring) has too little or too much condition? Do you treat bulls vs. heifers equitably in terms of fat evaluations?*

Reimer: Determining the amount of condition on cattle in the showring is obviously done by keying on external fat deposition. Areas like the brisket, topline, tailhead and udder on females are the most pronounced indicators. If you can readily see that extra condition in those areas, they are too heavily conditioned and if the spinal process is visible, they are too lean. I do feel it's more critical for females than bulls because problems with female reproductive performance caused by internal fat deposition can be very detrimental to longevity.

Rincker: Fat will layer from front to back and from the upper rib to the lower rib, so the overly fat cattle will show fat first in the brisket and in the upper rib, and may be deemed overly conditioned when it is visibly detected in the lower rib, and going back into the pins, udder, and cod, in case of steers. Apparent openness of rib and hardness to the top typically indicate a lack of proper conditioning. While we may want breeding cattle to all be in that "ample condition" range, bulls will typically be shown with slightly less fat and condition than females due to a faster gain and the presence of testosterone.

Ropp: First, look in the places where fat is deposited and easiest to see, i.e. the brisket, flank, around the tail head etc. Then the disproportionate appearance of width of body behind the shoulder and over the top is a good indicator as well. Finally, handling an animal over the ribs along the loin edge and in the flank can give you a very good idea of fatness if necessary to do so. It is not particularly difficult to decide whether an animal has .2 inches of backfat, .5, .8 or more. The difference of opinion comes when you make a value judgment based on fat being insufficient, optimal or excessive.

Question: *In the same context, how do you decide if an animal is too shallow, just right, or too deep bodied? Does fatness impact your evaluations?*

Reimer: Balance is an important factor in skeletal design and determining ideal body depth. I don't think there is a formula to determine too little, too much or just right. The amount of condition can impact evaluations both positively and negatively.

Rincker: Body depth needs to fit the skeleton and maturity of an animal and, therefore, animals considered "too shallow" and "too deep" were evaluated that way considering their skeletal size, age, and weight. Our SimGenetic cattle today are naturally deeper and softer made as seen in both the showring and in the cowherds themselves and yet can successfully have that body and look without laying down excess fat. That is not to say that some deeper made cattle aren't overly fed or even considered too fat giving evaluators the decision of "true and honest depth" as compared to "deeper due to fat".

Ropp: Certainly fatness affects depth of body, but there are body depth and capacity differences between cattle that are not due to fatness. Even in a group of thin cows or just-weaned calves when fat differences are very small, substantial differences in depth of body still exist. I try to adjust the evaluation of depth based on my evaluation of optimum vs. excessive condition. A relatively lean (.1-.3 in.) animal that has wonderful depth of fore rib and flank is particularly appealing.

Question: *Since the early 1990s, Simmental have increased muscling. When do you know when muscularity is ideal?*

Reimer: Speaking in terms of ribeye area, REA, ideal muscularity seems to be a moving target. Marketing grids may have differing REA targets, depending on the trade being supplied. As we evaluate ultrasound data on yearling bulls, a 14 to 16 inch REA is really a comfortable number for me. In the showring, having enough muscle expression to hit that target REA without inhibiting movement and production would be my target.

Rincker: Our SimGenetic cattle are continuing as a breed for "completeness" and muscle and carcass traits have been included in our selection of "the right kind." So often as cattle, and this is not just restricted to the Simmental breed, but as cattle get more extreme in their muscle, it will begin to impede movement, or affect balance, or create a high lean to fat look that might become questionable on their ability to maintain themselves. Our breeding cattle can accept a wider range of actual muscle and shape and still be acceptable or ideal, if the other phenotypic traits balance up with their muscle shape and mass.



Ropp: I assume you are talking about the overall appearance of muscling and not just ribeye size? The two are actually not as highly related as one might think. Muscling is obviously important. In this country we eat the cattle and high quality muscle proteins are our food production goal. That being said, extremes in muscling are not necessarily ideal from a production standpoint. Light muscled animals, convert inefficiently, have reduced fleshing ability and keeping quality, dress poorly and produce less food than muscular ones. Extremely heavy muscled animals can have issues with reproduction, soundness and subsequent longevity. A balance is important, but as a Continental breed in particular, we must continue to provide an extra degree of muscling to better complement generally less muscular British breeds for successful crossbreeding programs. Remember too that when an animal is nutritionally challenged because of low feed resources, lactation etc. that they lose protein tissues and fat at nearly the same rate. Therefore, more muscular animals actually tend to stay in better condition longer when challenged than light muscled animals.

Question: *Is there less intensity of selection for muscularity when you sort females? Why?*

Reimer: For me, priority for muscularity isn't as high for females expected to be utilized in a breeding program. Physical traits affecting longevity, performance, body volume, femininity and adequate muscularity more closely fit my target.

Rincker: Bulls tend to muscle up more with feed and time than do their counterpart heifers fed similarly and are often presented with more power and shape. However muscularity is a heritable trait so muscle in females is considered when I evaluate. With that said, rarely would muscle be my first discussion point rather it would be a description of the amount or type of muscle with the preference for "ample muscling" that balances with their structure, condition, and growth.

Ropp: Probably, females are less muscular in appearance without the effects of androgen hormones anyway, so understanding how that affects progeny is important. Bulls with below-average muscling are apt to produce steer progeny with insufficient efficiency and cutability. It too makes more sense to breed a muscular bull to a group of average muscled females than an average muscled bull to a group of heavy muscled females from a production standpoint. Besides, almost no one wants to buy a light muscled bull, but there is marketing hope for below average muscled females. In my opinion, however, selecting light muscled females for the sake of so called "femininity" is overrated. Truly feminine females, become pregnant early in the breeding season, calve quickly with no assistance, raise a heavy calf, breed back quickly, stay in good condition given their nutritional environment and stay in the herd a long time without chasing their owner over the fence or up a tree.



Question: *Since carcass weights continue to increase, will REA just get bigger and bigger? Can ribeyes get too big?*

Reimer: As we listen to packers, their most profitable carcass weights have increased because they have a fixed cost per head and a larger carcass yields more saleable product. Acceptable portion size does become a problem on exceptionally large REA's and require specialty marketing.

Rincker: We are increasing our carcass weights and have added seven pounds per year for the past 50 years! Our ribeye size has increased incrementally during that same period and using average muscled cattle at one inch of REA per 100 lbs. of live weight, it only makes sense that our 13 and 1,400 lb. cattle have an additional inch or two REA over our 12 weight cattle from what seems like just a few years ago. As long as our processors continue to tool up for larger carcasses on the rail, if our heavier weight cattle retain their feed efficiency, and if we keep below grid deducts for heavy carcasses, carcass weight and therefore ribeye size may continue to see some increase, challenging our foodservice industry with bigger ribeyes.

Ropp: It stands to reason that may happen, especially with no adjustment to the USDA Yield Grade formula to help heavier cattle stay out of the YG 4 and 5 categories. Insufficient numbers of slaughter cattle are increasing the demand for tonnage replacement that heavier carcass weights provide. It is simple. If slaughter cattle numbers are reduced by 5%, you need about 5% more carcass weight per animal (40-50 pounds/head) to replace the lost product. Actually it probably takes more than that with the increased fat that accompanies heavier weights, but it is close. The industry says ribeyes can get too big, however, I only know of one packer who discounts for large ribeyes. Some retailers have gone to cutting large pieces in half or reducing thickness to deal with these issues, the latter of which can really cause preparation issues. It too can be an issue getting enough intramuscular fat in larger ribeyes to reach premium Choice grades.

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Part II

Questions and Answers:

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Question: *Relative to your view of breeding better cattle and better beef, what is your best comment about the status SimGenetic of muscling relative to our role in crossbreeding?*

Reimer: SimGenetics bring a positive contribution to yield grade and the opportunity to extend market weights at those yield grades.

Rincker: Yes, our breed is recognized as one that can provide muscling and cutability while at the same time our CMP Program has also identified SimGenetics' ability to meet grid requirements for marbling. In particular, the last decade has seen an even wider acceptance of our breeding bulls and females to be used to both maximize heterosis in terminal scenerios and yet also provide "breed complementation" to herds attempting to enhance quality and breeding for better cattle.

Ropp: Simmental genetics add muscling and cutability when combined with British breeds and that is a very good thing. With such a large number of British breed commercial cows in the country, Simmental muscling can help improve everything from the keeping quality of cows to the reduction of discounted, over-fat carcasses at the end of the production system. Muscle is about 2.25 times more energetically efficient to lay down when compared fat and that too provides big feed savings where energy has become the highest price component. Simmental does not, however, change ribeye size as greatly as some of our Continental competitors do which may actually be a benefit long term. Our CMP data shows that an average Simmental bull adds about 1 square inch of ribeye to an Angus cow versus breeding her to an Angus bull. This helps greatly with retail yield, but should not push ribeye sizes up to a point of risking discrimination by the retail and food service industry. ♦

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Tentative Schedule

Monday, July 29
Flights must arrive at Tulsa Airport before 3 p.m.

1 p.m. - 4:30 p.m.	Check-in (OSU Village E lobby)
5 p.m.	Welcome and Opening Session (An Sci Arena)
8 p.m. - 10 p.m.	Pizza and Pool Party (The Rec)
12 a.m.	In-room curfew

Tuesday, July 30 -- Hidden Oaks T-Shirt Day

6:30 a.m. - 7:30 a.m.	Breakfast
8 a.m.	OSU Feedlot Tour
9 a.m.	OSU Purebred Unit Tour
10:30 a.m.	Industry Sessions (Food and Agricultural Products Center)
11:45 a.m. - 12:30 p.m.	Lunch
12:30 p.m. - 2 p.m.	Resume Industry Sessions
3 p.m.	Griswold Cattle Company Tour
5:30 p.m.	Dinner, Tour, and Workshops at Reproduction Enterprises, Inc.
9 p.m.	AJSA Board of Trustees Leadership Activity
12 a.m.	In-room curfew

Wednesday, July 31

6:30 a.m. - 7:30 a.m.	Breakfast
8 a.m.	OSU Outdoor Adventure Course
12 p.m.	Lunch
1 p.m. - 5:30 p.m.	OSU Outdoor Adventure Course
7:30 p.m.	Dinner
8:30 p.m. - 11:30 p.m.	Scott Shelby Concert (Student Union)
12:30 a.m.	In-room curfew

Thursday, August 1
No flights prior to 1:30 p.m.

7 a.m. - 8 a.m.	Room Checkout (OSU Village E lobby)
8:30 a.m.	Breakfast and Closing Session with Kim Brock and Dr. Clint Rusk (The O Club)
10:30 a.m.	Buses depart OSU for Tulsa Airport