THE ART OF BREEDING PROPER LIVESTOCK part 2

By Will Winter, DVM

Once again we pick up the story regarding the art of selecting the absolute best specimens of livestock in order to achieve the desired results. We will try to discover the secrets of professional-level bovine genetic selection. In almost every case, the goals involve creating maximum digestive efficiency, good temperment, excellent fertility and maternal nurturing, as well as the best in carcass quality. In our circles, we place particular emphasis upon the ability to thrive on grasses and forage without the need for the addition of concentrates. While we are at it, we want extremely vibrant, long-lived cattle that can be very healthy without medical crutches such as wormers, vaccines and antibiotics.

In Part One last month I introduced my most important professional bovine genetics mentors, Gearld Fry and Steve Campbell. I feel incredibly lucky to be able to stand beside them as we look at and measure cattle. I realize that there are many, many other experts out there with their own criterion. Most certainly, there are always more than one way to hug a cat! Take from my words what fits and ignore the rest.

FOOLING THE EYE

I also mentioned last time that the initial examination of cattle is extremely valuable. What you see standing in the field, even by squinting the eyes, can reveal true genetic strength, but, perhaps more importantly, primal flaws. The reason this is true is that *the human eye naturally goes to the flaw*! When you see a person with a huge mole or wart on their face, you fight with your eyes to avoid staring, when you see a person with a hump-back, only a true jerk (or a child with their pure guileless innocence) continues to stare. Fortunately, we can turn this natural born trait into something valuable. For practice, look at pictures of cows and bulls in ads and photographs and pay attention to where your eye wants to go. It will always be directly to the most severe flaw!

On the other hand, the eye can also be fooled. According to Gearld Fry, most of us can grow fond of certain not-necessarily-valuable traits, such as a favored coloration, bangs over the eyes, or pretty eyes. For this reason, our common sense, our objective reasonings, can be led cat-astrophically astray. And, being human, we tend to fall for this time after time. This is where linear measurement comes in. We go from the subjective to the objective.

Again, you are not going to be a linear measurement ex-pert at the end of this article, nor is it even necessary that you learn. But you can get a good start here. I even rec-ommend that people in the position of evaluating breeding cattle acquire a set of instruments and begin to practice.

Steve Campbell developed his skill set by measuring 275 cows on his first outing, using borrowed calipers from Gearld. Sure he had an inborn knack for this, but by the end of that experience, he was ready to buy his own instruments, get more books, and start measuring every bovine he could get his hands on.

FEMININE COWS and MASCULINE BULLS

Starting with cows, we can ascertain that measuring the rump is the number one way to determine the fertility of any cow. I remember Gearld telling me that in a crowded church, the women sitting together will be touching in that lower area, whereas men sitting close together will be touching each other's shoulders. Right? Well, at least that's one rule I never forgot. This is as it should be. So we want the cow's rump to be at least 2.5" wider than the length of her rump. More is better, the wider it is, more fertile the cow, 3-5" being optimal. Not only will she be more fertile, she will be easier fleshing and easier calving. All these traits are intimately connected.

When it comes to measuring bulls, we want to know how much wider the shoulders are than the length of the rump. Now I always assumed that a wide-shouldered bull would be indicative of the likely difficulty in delivering their calves, but yet, due to one of the most amazing facts that you will ever read, this is actually the opposite! And here, we see that we are actually mimicking Mother Nature, where only

the most masculine bulls are the ones that do the most mating and, of course, these are the ones with the best outcomes. Isn't that interesting that nature favors wide diversity with both extremes, masculine and feminine, therefore there must be something intrinsically valuable, something worth emulating in our own programs. Picture in nature, the mature bison bull in all his massive glory, the huge rack on the bull elk, the bushy mane of the male lion, or the gaudy radiance of the male peacock or turkey tom. Every wise female awaits the strongest, most glorious male in the herd or flock. After all, our best rotational grazing schemes work best when we adhere as close as possible to the crystal clear rules of nature.

But, back to shoulder width and calving ease, here's where it gets interesting. We know that "sissy" bulls tend to generate late calves. And gestation length is a major factor in calf birth weights. Did you know we can change the gestation length, and thereby affect calving weights, by significant amounts of time? For bulls at one year of age, for every inch that the shoulders measure wider than the length of the rump, we can cut off 2.5 days of gestation time. If it's 2" wider, we save five days, and in the rare case when it's 3" wider, we save 7.5 days. When we do this we can achieve a calf that is not only fifteen pounds lighter at birth, but one that rapidly catches up and will quite often exceed the growth rates of those born heavier. There is no known down side to this statistic.

It gets even more interesting when we seek out the utmost in masculinity. Dr. Sarcke of Penn State University probably even shocked himself in a study. He and his associates mixed equal volumes of semen from four different bulls of varying quality with regard to masculinity. When this mixed semen was given to cows, genetic testing showed that over 75% of the calves were sired by only one of the bulls! It was the most masculine of the mix!

Best of all, success begets more success. For example wide shoulders on bulls will put wide rumps on female offspring. Likewise, the wide rumps on the cows will put the desirable wide shoulders on the male offspring. With consistent and accurate selection, one can achieve a herd with high levels of desirability within several generations of selecting and culling. On the other hand, if there is no bona fide plan at hand, it's a life time of random guesses.

So, how accurate is it if we select and cull based primarily on the numbers game of linear measurement? Steve Campbell says that it's best to wait until the cattle are one year of age. They can certainly be measured at any age but if we measure at eight months of age Steve estimates a 75-85% level of accuracy, not bad, but certainly not as good as one year of age measurements which he rates as 90-95% accurate.

As one example of accuracy, Gearld and Steve were hired to evaluate a herd of 1400 Red Angus cows. They sorted them first by “trained eyeball” after which they put 275 of the cows in the top bracket and of which they commenced to measure. By measurement and via ultrasound of the loin, they found 225 to be of excellent quality. These cows were sent to the gourmet grass-fed beef program and were without exception fine animals providing year after year of excellent production. The other 1175 animals were put on winter hay for another three and a half months. At the end of that time the majority of them had not gained any significant weight on the hay, so just over 900 of them, the least efficient, went to other ranchers for concentrate feeding-style production programs.

If we did this type of intense sorting on any random 150 cows, Steve estimates that we could upgrade a profit differential ranging from a $20K potential loss if there was poor selection on up to a $50K gain with wise selection! It’s fairly easy to spot the difference in quality on grass because the worst examples, the poor-doers, will usually be nibbling grass from sun-up until after dark, grabbing all they can get. We see efficient cattle who are done eating by late morning then chewing their cud and lying in the shade for the majority of the day. Steve says that with a mixed-quality herd, we feed to the “new herd” standard and then let them sort themselves out. In other words we don’t want to disguise the inefficient cattle by providing “too much” grass. When we feed towards the middle, the

lesser individuals will get thin and sort themselves out. If we didn't do this, the upper bracket animals would just become too fat. In that way, we can judge feeding rates by looking at the good ones, micro-managing them, then letting it sort out from there.

WHICH MEASUREMENTS MATTER THE MOST?

We mentioned earlier the incredible importance of the heart girth measurement (just behind the front legs) and that it should always be greater than the top line measurement (from the pin bones to the poll). These will be the easy-fleshing cattle who do well with low inputs. So how do the expert "see" heart girth? Steve says that every inch of depth will add 2" to heart girth. They also want to see a round, not sharp, shape to the bottom of the chest. The front toes should also point straight forward. If the bull is toed-out, that means that the shoulders are not wide enough for the body. However, a pigeon-toed bull will be very masculine. We also don't want to see a backbone that rises above the shoulder blades. With cows, we don't want to see them cow-hocked (think dairy cow) because this frequently means that the rump width is inadequate for fertility and for calving ease.

Since it's virtually impossible to offend every single cattle breeder in just two segments, I'd like to add Part 3 next month, in which I will delve into the perhaps even more controversial aspects of cattle breeding and management

such as determining glandular function via haircoat swirls, pregnancy detection without palpation, and some breeding scheduling and nutritional preparation for conception. There's no point in discussing genetics if there is not a plan for good epigenetic in place so that the full genetic expression can manifest. Saying that all this is a combination of science and art, means that we will probably never have all the answers! However, that is why it is so much fun! See you here next month!

REFERENCES/REPUTABLE SOURCES:
There are so many books and so little time. However, you will never be sorry you invested in any or all of these classic texts. You can improve your library here at the Stockman Grassfarmer bookstore, also check the 109 books on cattle at the AcresUSA bookstore. Anything by Allan Nation (*"I Did It My Way"*), Gearld Fry (*"Reproduction and Animal Health"*, co-authored by Charles Walters), Johann Zietzman (*"Man, Cattle, and Veld"*), Jan Bonsma (*"Man Must Measure*"), François Guénon (*"A Treatise on Milch Cows"*), and many others. Run with the big dogs or stay on the porch.

Talk to the man, Gearld Fry, Rosebud, AR, bovineengineering.com 501-454-3252 wgfry@windstream.net

To order a set of hand-made caliper instruments or to get top-notch consulting, Steve Campbell, Fruitland, ID, tailormadecattle.com, 208-315-4726, trianglec3@gmail.com

Jim Elizondo,Crescent City, FL, Especially for advice for cattle on grass in hot climates, fcedemexico@hotmail.com 832-776-0886

Kit Pharo, Cheyenne, CO “Solar” bull sales (as opposed to “diesel” bulls), and free opinions on everything, kit@pharocattle.com 800-311-0995

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