

Genetics in Blue Jeans

Shorthorns work....conception to consumption

By Virginia Wilkinson

When the New York Times and San Francisco Chronicle recently heralded, “Beef goes Green” when describing a call and response to a return to basics in the beef industry, Adams Creek Ranch in Yoncalla, Oregon already knew that there’s opportunity in serving the consumer who recognizes the value of all grass fed beef. They knew, as do many farm families, of the nutritional benefits of on farm-raised products. With nutritional endorsement now coming from outside the industry, such as can be explored on the www.eatwild.com website, the demand for niche products which reflect the values of a growing segment of a discerning public is something Adams Creek is postured to serve.

Owner/operators Don Wilkinson and Harold Boucock had already been going down the road less traveled, becoming proficient at growing ample, top quality forage and sorting/selecting beef animals who produce choice carcasses entirely on grass. Western Oregon is the backdrop for the ground operation, and Shorthorns have evolved as the foundation for the genetics that make this symbiosis a natural success. Recent developments in genetic testing have endorsed the wisdom of putting Shorthorns at the heart of the operation.

Raising and finishing calves entirely on grass (pasture, grass hay and silage made on owned and leased properties) requires that all the components are maximized and compatible. On going is researching and proving acclimatized forage varieties that support a sustainable volume and quality forage base for the cows and calves. Another is fine-tuning pasture fertility that benefits from applied controlled grazing of the grasses. Fencing techniques, water supply and paddock allocation to simultaneously support the differing seasonal and production requirements for bulls, cows, pairs, replacements and steers, all the while managing for silage and dry hay production from the same land base.

When the cycle of orchestration was right in all these areas, the many challenges of direct marketing a niche product took center stage. A passion for studying and applying the relationships of livestock genetics dictated that selection for traits that produce a consistent product was essential for our target consumer.

Marbling ability and complementing the health benefits and unique flavor with tenderness was being sorted on the rail as carcasses were independently graded at our local processor. Simultaneously, we were seeking commercial buyers who would participate in the commercial carcass evaluation system for a portion of our calves who went through the traditional stocker/finishing program. Because these animals had a foundation on grass, we were interested in the breed-sponsored program to identify and follow calves through the traditional feedlot and provide carcass data post slaughter. We met with little success with this program as although the buyers all talked about the cattle fitting the grid, they weren’t really interested in knowing the actual outcome on the rail, much less offering any incentive for calves that did well out of the feedlot.

During this process, we were using mostly black bulls over a variety of crossed cattle and keeping black replacement heifers. After a season of calving problems and disappointing performance in a portion of the calf crop overall, culling time and planning for the next

breeding season called for the selection of genetics which would take us to the consistent qualities we would require. It was a gratifying validation of a personal preference when the Shorthorn breed rose so significantly to the top of the list we considered.

Our initial intension with a Shorthorn bull was to put him over a portion of the cows to put some desirable maternal traits into future replacements. Additionally with the Shorthorn/Angus cross, the calves are generally black, a more commercially acceptable product for the traditional buyers. We were looking for genetics in blue jeans....purebred cattle raised and selected in our hill country style “commercial” conditions where they work and live outdoors rather than in a show string. Our search took us to Northern California and after observing the conditions and the quality of animals selected in conditions similar to ours, we wound up buying two bulls and two pair! We shortly thereafter invested in a group of heifers as well.

The Shorthorn looking calves next season soon became a problem, because the traditional buyers took a discriminate view of red, white and roan feeders. However we watched those straight bred cows in comparison with the commercials we had over the season, and noted they were better mothers, easier keepers, had good milking ability and excellent temperaments for rotational grazing and handling. We also cross bred some of them to a black bull, and kept straight bred and Shorthorn cross replacements. We also crossed back over the black cows with the Shorthorn bulls in the same manner. Since the management was the same across the board (ear tagging, weighing and tracking), and everything was on an all grass program, our observations were validated with records that told the true story.....the Shorthorn was emerging as a winner in our operation.

Because of the discrimination of the buyers, we tended to keep shorthorn calves over to fill the fledgling portion of our locker beef direct marketing program. We even had one of our Shorthorn steers (a neighboring 4-H's first steer), place third in the carcass evaluation at our local County Fair...no hide discrimination involved at that stage! Our beef customers and the grader at our locker kept remarking how tender and acceptable the Shorthorn product was, and that while they were certainly rising to the top of our program, there were still some differences between their carcasses as well.

About this juncture, we became aware of the GeneStar genetic testing program developed in Australia. Touting themselves as having developed the leading edge gene marker technology for the beef industry, they use a DNA based diagnostic test to identify genetically elite individuals for traits that are difficult or slow to change with selective breeding. Marbling as a production trait was identifiable through the analysis of a simple hair sample.

We tested all of our bulls, and found that 3 of the six potential Shorthorn sires we had available scored “1-Star” (carried one gene out of the possible 2) for marbling. When we got our tests back, there had only been 150 or so animals tested of the Shorthorn U.S. genetics, and out of all those tested, there was only one 2-Star and a hand full of 1-Star rated animals. We therefore had a higher percentage of our herd bulls than most other herds tested carrying the gene, and a “leg up” on the opportunity to increase the frequency of the high marbling gene for the benefit of our program.

In January of this year, GeneStar came out with a genetic tenderness test and conducted breed evaluation trials to measure the frequency of the tender and tough variants of the gene in different breeds. As physically demonstrated with peak shear force on the LD muscle, tender and tough were identified in an initial trial. A second trial of more than 5,000 straight bred cattle from 7 breeds were similarly analyzed, and the Shorthorn sire

group yielded a remarkable 97% 2-Star tenderness score, 19% higher than the Angus and 27% above the Hereford and the absolute top of all the breeds tested.

We re-tested the Shorthorn bulls we still owned as well as some young prospective herd sires for the tenderness gene, and they all had 2-Stars except for our senior sire, who rated a 1-Star. The tests and trials have been found to be valid on both grass/forage and lot-fed finishing systems. So it's the genetics that make the difference in both systems, and the genetics that are boosting our advantage in our "niche of choice." But the same genetic advantage can serve the traditional commercial feedlot calves as well.

We made the decision we will only buy bulls testing at a 2-Star for tenderness and a minimum of one star for marbling, and when more animals are tested and enough bloodlines are identified, we will only accept 2-Stars for both traits. Along with high EPS for growth, milk and maternal traits, this will allow us to intensify both marbling and tenderness in our direct-marketed animals through sire selection alone.

This selection will also intensify these genes in the cowherd since we are putting replacement heifers from these bull back into the herd. Although we don't know which of the current cows are carrying these genes without testing, certainly some are carrying the extra genes for marbling. And since the frequency of the tenderness gene has proven to be highest in the Shorthorns, the cows should have an advantage for tenderness as well.

Being on a whole herd reporting program (tracking birth weights, weaning weights, yearling weights, calving ease, etc) allows us to build our own herd EPDs and monitor herd trends in each of the important production areas. It's useful as a yardstick for production and complements the work on the carcass merits with some of these other external tools such as the GeneStar testing.

A product high in nutritional quality is the bottom line result of genetics at work in nature's design for domesticated food animals. Many are coming full circle back to the realization that we can't alter, speed up or adulterate her work. For us, in addition to the increased profitability of our specialty product, there's a definite comfort for the producer and animal in a pasture-based program...rather like those favorite blue jeans that just feel right...it fits!