"The Closed Wye Angus Herd Facilitates the University of Maryland's Grassfed Research," *Stockman Grass Farmer,* November 2023

by Christine E. Black

Jeff Bricker, the new Wye Angus program manager for the Wye Research and Education Center, is getting to fulfill an item on his bucket list by working with a herd of Wye Angus cattle, well-known for being bred since the 1950s to thrive on grass and rotational grazing. The program is part of University of Maryland's College of Agriculture and Natural Resources Agricultural Experiment Station in Queenstown, Maryland.

Bricker has worked with cattle all over the world, leading cross-breeding projects in China; working on water irrigation and agriculture projects in Iraq; running ranches in Montana for 22 years; and managing an 800-head herd in California where he was in charge of the Artificial Insemination program, as he jokingly says he was a "bovine gynecologist." He says the Wye cattle have been part of most places he has worked.

"This breed has followed me," Bricker said.

Bricker, in the job for about two months, replaces Ed Draper, who was program manager for more than 30 years. Bricker notes the most impressive part of the University of Maryland program is the record-keeping and databases on these cattle. He pours over handwritten logs, kept on this herd since owner Arthur A. Houghton and James B. Lingle, manager, began the herd with 18 heifers and a bull calf, purchased in 1938. The 18 heifers are all the females that Wye Plantation has ever purchased. In 1978, Houghton gifted the University of Maryland with the herd.

The 650-acre Wye Plantation, that is surrounded on three sides by the Wye River, has been farmed continuously since the 18th century with early owners including William Paca, signer of the Declaration of Independence and one of the first governors of Maryland. Arthur A. Houghton, then chief executive of Stueben Glass, bought it in 1938. Houghton hired James B. Lingle, an experienced cattleman, to manage the plantation. Lingle was determined to create the best beef cattle in the world, superior in size, fine in quality, as well as economically profitable. Lingle began honing the genetics in the herd, selecting for a larger than usual frame with a "rangier" chassis on which to hang more meat without sacrificing carcass quality, according to the program's historical literature.

All sorts of cattle linear measurements and weights were recorded with data being field tested, said Bricker. The genetics were rigidly selected and detailed, he added.

"All of this was assessed long before computers," said Bricker, noting the detailed herd books kept. Only twenty-four bulls were bought over the years with the last one bought in 1956.

Lingle could not find the kinds of bulls he wanted in the U.S. so bought them all from England, Ireland, Scotland, and Wales, noted Bricker.

"All those cattle were eating grass in England, Scotland, Ireland, and Wales," said Bricker. "Corn there is for human consumption."

Today, the Wye Angus Program is a site for research and training of undergraduate and graduate students in beef cattle science and production. Program goals include understanding and improving efficient beef cattle production in a forage-based system to practice and demonstrate how to be sustainable, make profits, and improve the environment.

Bricker admires the discipline involved with the Wye Angus breeding program, that has been part of its foundations since the beginning.

"There's so much history here," Bricker said. "It's surprising that one man figured it out," said Bricker. In the beginning, Lingle noted the kind of cattle he liked, and he just stayed with those qualities no matter what the public opinion was, he added.

"Farmers may chase something shiny out there, but this place doesn't do that," Bricker said. "It settled a long time ago with a type of cattle and determined this type was best – and they do research to confirm that." Hearty, low-maintenance traits are bred into the cattle with no new bloodline introduced since 1958. The genetic similarity in the closed herd enables research studies that would be more challenging in a genetically diverse herd.

One major study conducted is a heifer and bull 140-day gain test after weaning. The test extends from September to the end of February. Bull calves are evaluated at weaning, and those not selected to be candidates for sale are castrated at weaning. Resulting steers are then divided into two groups, one group of grass-fed steers to test and the other group of steers to be tested on a grain/silage ration. The heifers are put on the 140-day test as a group. This is the only time in their lives that they aren't on a 100% grass environment, according to Bricker.

"The testing may seem contradictory to the goals of a grass operation, but not all of our customers are 100% grass farmers," said Bricker. "Feedlot performance needs to be taken into consideration because of this. Our cows have to survive on grass only, but you also need to have the ability to perform in the feedlot with their resulting calves." After warmup periods to get used to a corn, silage, soybean, and mineral mixture, each group is weighed and measured at the start of their respective tests and then is weighed and measured every 28 days until the conclusion of the 140 days testing period to identify how well the cattle gain on a ration that is designed for a specific gain.

"In other words, if you have a ration designed for a bull to gain 3.5 pounds a day, and he gains 4 pounds a day on test, then the bull is displaying greater feed efficiency than the average," Bricker said. The measurements taken are hip height and scrotal circumference on the bulls and hip height only on the heifers. "We do the testing ourselves as there are barns with feed bunks for each specific group of cattle as well as a mixer wagon to weigh, blend and feed a total mixed ration designed for each group on test," Bricker said.

At the farm, various studies are conducted on grass-finished and grain-finished cattle with eight – ten steers tested per year. Dr. Zhengguo Xiao of the University of Maryland Animal

Science Department studies whether grass-finished or grain-finished cattle are more resistant to the gastrointestinal nematode parasite, Ostertagia Ostertagi parasite. Dr. Jiuzhou Song, also of the University of Maryland Animal Science Department, evaluates the difference in the linoleic acid concentration in the meat in grass-finished and grain-finished cattle. Linoleic Acid is an important component in promoting a healthy diet. Song's data suggests that grass fed animals produce tender beef with lower total fat, higher Omega 3 levels, and superior protein content than grain fed animals, Bricker said.

Lingle, the original herd manager, set a goal to have cattle that gained well on grass, said Kevin Morgan, Wye Angus herd manager for almost 40 years. He added that the Wye Angus herd is one of the few that gets regularly tested on grass versus grain finishing. Cattle are moved an average of twice a week, with polywire fences and reels as primary tools. Perennial grasses grown include no-till Fescue, Sudex, Red Clover, and Dutch Clover with Rye Grass as an annual. Fast growing Sycamores create shade for the herd.

With a closed herd, they keep inbreeding coefficient low, averaging five percent, by using older, preserved semen. For instance, the semen used for breeding now is from 1980s bulls.

"That's how we keep our inbreeding coefficient low and our performance up," Morgan said. Breeding program goals include enhancing maternal traits, such as udder and teat structure, milk production, and calving ease. Herd managers target specific carcass characteristics including muscle depth and thickness and marbling ability. To make breeding and selection decisions, they use live animal ultrasound to evaluate carcass composition.

Composed of corn, soybeans, and pasture, the farm is mostly self-sufficient with only mineral and soy bean meal bought. They stockpile Fescue for winter grazing and fed only 20 bales last winter, Morgan said. Calves receive two vaccines when they are ready to wean with remaining cows receiving a booster of Bovi-Shield Gold 5 and a once-a-year dose of DectoMax antiparasitic. Fly tags are applied in May and cut out in mid-July. They also use a larvae-cide in the cattle's mineral.

About 132 cows, 54 breed heifers, and nine herd bulls are part of the Wye Angus herd. The herd includes 16-18-year-old cows and has had a 22-year-old cow who had 20 calves. The herd's current grass-fed steers average 1200 - 1300 pounds at slaughter.

"We select for longevity, good feet and legs, and no udder breakdown," Morgan said. "We have a niche customer base because they're looking for a certain gene pool," he added.

A public auction has been held every first Saturday in April since 1978 with customers arriving from many states, including Montana, Florida, and Maine. The farm has shipped to Canada, Texas, and New Mexico. Five cow-calf pairs, 12 pregnant receps, and 23 bulls were sold at the last auction.

Including Bricker and Morgan, a total of five employees work on the farm, with two summer interns and one or two additional interns during calving season, coming from various states, including Texas, Florida, and Minnesota. In addition to University of Maryland students, Pre-Vet students from Delaware State come to study. The farm often hosts tours with schools, veterans' groups, farmers, and ranchers.

Morgan notes that one of the best aspects of work at the farm is the family atmosphere with workers staying for decades, including Program Management Specialist, Lisa Yoash, who has been at Wye for almost 40 years. With respect for the historical work done and excited for the future, new Program Manager Jeff Bricker is now happy to be among them.

For more information on the Wye Angus Program, contact Program Manager Jeff Bricker at <u>wbricker@umd.edu</u> or Herd Manager Kevin Morgan at <u>kmorgan@umd.edu</u> or visit the website at <u>https://agnr.umd.edu/research/research-and-education-centers-locations/wye-researcheducation-center/wye-angus</u>

The program offers research opportunities for graduate and undergraduate students in the beef cattle science and production. Its main goals are to understand and improve efficient production of beef cattle in a forage-based system to practice and demonstrate how to be sustainable, make profits, and improve the environment.