Learning and Networking at NC Angus Association's Field Day

Cortney Holshouser, NCAA Executive Secretary

The North Carolina Angus Association held its Field Day on September 16th at the Upper Piedmont Research Station (UPRS) in Reidsville. It was a beautiful, sunny day with perfect Fall weather. The day started with a welcome from North Carolina Angus Association President Mike Moss and Field Day committee chairman Mark Wilburn. Mike emphasized what a great opportunity the day would be to highlight the research being conducted at UPRS and to understand what's going on and how it affects us as breeders.

Dr. Daniel Poole, NC State University Professor led us in a tour of the farm and the cattle working facilities. The research station runs 140 mama cows, all Angus. It is a historic herd in that it has been involved in research projects for many years, some conducted by the American Angus Association. Dr. Poole explained that the research station likes to capitalize on different varieties of forages such as Eastern Gammagrass because it is a warm season perennial that needs lots of water, ideal for this part of the country. They also plant corn in their winter pastures to utilize the nitrogen from manure. One challenge the station faces is the number of public visitors they receive on their walking trail and their perception of production agriculture.

Dr. Poole demonstrated the new Arrowquip chute, noting its low stress handling design. The chute paired with their sweep system made from an old grain bin allows for an easy flow of cattle. Joe French, manager of UPRS, did want to pass along one piece of advice if you are building your working facilities from recycled parts…always set your pivot first and then build the rest of your system around it. UPRS has a 63% pregnancy rate, even with not consistently using one protocol. They are constantly trying different protocols to test their efficacy. One thing they always do each time a cow comes through the chute as part of their proactive management style is to take body condition scores.

Our next stop was the new GrowSafe System facility. The GrowSafe feed intake system, which looks similar to a regular feed trough system, has individual feed bunks that allow only one animal to feed at a time. When an animal enters a bunk, GrowSafe recognizes that animal specifically through a special electronic ear tag, then relays information back to a central computer. The system is so advanced that it starts sending data as soon as an animal crosses the feed trough threshold. It knows the start weight of the feed bunk, how often an animal eats, what times, how much active eating an animal does versus time just standing over the trough, etc. Each bunk sits on weigh bars, so every bite is calculated. The system can also be a tool to monitor animal health. If an animal decreases feed intake, GrowSafe will alert you. 62 heifers, divided into two groups make up this project at UPRS. These heifers will be in this system for 45-60 days, saving a month of feeding and labor to collect data. In talking to other producers using this system, hay feeding has also decreased. On the reproduction side of things, the heifers in the GrowSafe system are replacement heifers. They have more area to roam within the system. This means no confinement or hindering their joints.

The team has faced a few environmental challenges since putting in the GrowSafe system. A week after installation, lightning from a storm fried the computer board. Shortly after, tornados ripped through the area and even touched down directly across the road in another area of the farm.

The automatic waterers on the GrowSafe system are also helping to measure efficiency. The waterer is divided by a fence, so it is accessible to both pens of heifers. Underneath the concrete, is a set of scales that measures the animal's front body weight. The water intake can then be calculated by using a conversion equation. In the Spring, water intake data will be collected on a set of heifers at UPRS. The team hopes to be on the cutting edge of water intake efficiency studies.

The data being collected through GrowSafe is helping researchers understand animal feeding efficiency and eating behavior. They are measuring growth EPDs into the American Angus Association database. Dr. Poole did note that they must have phenotypes to have the genomic tests valid and accurate. He stressed the importance of not single trait selecting. If we only focus on dry matter intake, we could be left with unproductive cattle. It is very much a balancing act. The research conducted through this system is very impressive. It allows precision data to be collected at lightning speed and is made possible through contributions by North Carolina Cattleman's Association, North Carolina Department of Agriculture and Consumer Services, NC State University College of Agriculture and Life Sciences, and NC State University Department of Animal Science. Dr. Poole also thanked the NC Angus Association for their continued support, making projects like this possible.

After the tour, we headed across the road to enjoy a delicious lunch featuring Biltmore Beef hamburgers. A special thank you to Kyle Mayberry for supplying them and coordinating the meal with Joe French.

After lunch, we received updates on research projects being conducted by NC State University graduate students. Benjamin Rajo began by giving us an update on his study of developing methods to identify fescue tolerant animals. Through his research at UPRS, he found that fescue tolerant cows had almost a 30% higher pregnancy rate than susceptible cows. He suggested that breeders can select for fescue tolerance by utilizing hair shedding score, body temperature, body condition score, and birth weight. The two EPDs that will benefit breeders the most in the Southeast United States when selecting for tolerance is hair coat shedding and pulmonary arterial pressure (PAP) score.

Next up was Katie Williams' presentation on deworming protocols in mature cattle and comparing current practices to future needs. Research suggests herds are developing a resistance to dewormers from overuse. Currently, most producers operate on a traditional calendar or convenience based deworming strategy. Katie suggests a more strategic deworming protocol based on stage of production and herd needs would be more effective. By taking samples and recording fecal egg counts (FEC) from April to July at UPRS, her team found an average herd FEC of 172 in virgin heifers and an average herd FEC of 3 in mature cows. Mature cows develop some level of immunity to gastro-intestinal parasites whereas younger animals are susceptible to infection. Some solutions to this problem include rotationally grazing animals or even co-grazing different species to decrease parasite load in pastures; avoid over-grazing pastures as the lower cattle graze to the ground, the higher risk they are at for ingesting parasites; and managing manure on pastures by exposing it to heat and sunlight by dragging fields or harvesting hay.

Nicole Valliere then gave an update on the multi-species grazing project conducted at the NCSU Small Ruminant Educational Unit from July-September. The objective of the study was to demonstrate perennial and annual forage establishment and renovation focusing on management, forage selection, and economics. The study also illustrated the potential benefits of including sheep in cattle grazing systems. Some opportunities to multi-species grazing are decreasing parasitism since parasites are species specific. Another benefit is small ruminant productivity. Calf weight relative to cow body weight

is 40-60% where litter weight relative to ewe body weight is 50-100%. Data collection for this project included botanical composition, forage heights and quality, fecal egg counts, body condition scores (pre and post project), and weights (pre and post project).

Dr. Andrew Weaver then explained lamb feed efficiency and how it relates to the data collected from the GrowSafe system at UPRS. The system was used to feed out a group of 27 ewe lambs and 20 ram lambs from NCSU's campus Katahdin flock. The lambs were fed using the GrowSafe system for 53 days. Equipment had to be modified a bit to accommodate the size difference. The average daily feed intake was less for the low residual feed intake group throughout the feeding period despite similar weight gains. Dr. Weaver also explained feed efficiency metrics (intake, feed gain, and residual feed intake) and compared the pros and cons of measuring and comparing them.

Dr. Daniel Poole then gave an update on the latest in reproductive research and strategies. After touching on the science behind estrous synchronization, Dr. Poole highlighted pros and cons of many of the protocols being used today, including the 7&7 Synch which has resulted in a 72% pregnancy rate to artificial insemination (AI) at UPRS. He broke down drug costs, number of trips through the chute, and heat detection times for each protocol. The biggest takeaway was that not one protocol fits everyone's operation. He stressed that you must critically evaluate your own operation to determine which type of breeding protocol fits you best based on production costs, your need for improved genetics, and your management capabilities. Then you must clearly define the goal you hope to achieve. One resource that he finds helpful is the Estrus Synchronization Planner, which can be downloaded for free from Iowa Beef Center (http://iowabeefcenter.org/estrus_synch.html). The planner features recommended systems for cows and heifers, and you can select systems by type (heat detection and AI systems, heat detection and cleanup AI systems, and fixed-timed AI systems). It also provides a list of daily activities, generates a barn calendar, calculates cost per AI pregnancy, and support materials.

Lastly, we learned about the research station's involvement in the Select Sires Young Sires program from Mark Wilburn. Mark noted that over 9,000 units of semen have been donated to 26 herds across the country, 25 of those being land grant herds. Through this program, proven sires are being tested against young sires. The matings are completely random to ensure unbiased data collection and reporting by research professionals. Mark says they are learning data quickly and learning data early. The program is a huge benefit to both parties. All 62 heifers being fed in the GrowSafe system are products of the Young Sires program.

A special thank you to Joe French and crew at the Upper Piedmont Research Station for hosting our Field Day and all their hard work in preparing for the day, along with Mark Wilburn, NCAA Field Day committee chairman, for planning the day. If you are interested in learning more about industry related issues, the latest in research projects being conducted, educational opportunities, and networking with fellow producers, be sure to join our next Field Day. The technological advances of the Angus breed combined with our wonderful NC State University resources provide a unique opportunity to those seeking advancements in their herd.


GrowSafe


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