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Science and Strategy

A Missouri cattleman focuses on making his cow herd efficient and sustainable.

Photo by Makayla Reynolds

by **Macey Mueller**

Mainstream conversations about beef industry sustainability are frequently focused on environmental or animal welfare issues — which are certainly valid — but any rancher will tell you that managing a sustainable operation also includes making it economically viable.

Financial security is often a result of implementing strategies promoting efficiency, identifying conservation practices that maximize resources and leveraging data to make selection and management decisions — all actions that can simultaneously impact environmental and livestock stewardship efforts.

“Whether it’s grazing cover crops that also benefit their farming operations or using high-level data to make sound management decisions, most producers are implementing valuable sustainability tools that can positively impact the environment and our bottom lines,” said Mike John, partner and general manager at John Ranch Inc.

Forage first

In addition to soybeans, wheat and alfalfa, John’s family-owned, diversified farming and ranching operation near Huntsville, Mo., utilizes the region’s suitable environmental conditions to run a forage-based cow herd on tall fescue.

“To me, Missouri wouldn’t be the number two or three cow state if it weren’t for fescue,” he said. “It does have to be managed properly to avoid some of the toxicity issues, but if you’re fortunate to have enough acres and enough rainfall to stockpile it in the fall, it’s a very valuable feedstuff and saves an awful lot of hay feeding.”

Not only is fescue ideal for cow-calf production, but research has also shown the large amount of biomass it produces as a perennial grass makes it an ideal crop for capturing and holding carbon dioxide.

“Carbon sequestration is an important aspect of reducing the beef industry’s overall environmental impact,” John said. “One of our biggest responsibilities is managing our grass to not only ensure a continued healthy source of nutrients for our cattle but also to allow the plant to effectively use photosynthesis to secure carbon.”

For the past several years, the Johns have also started planting cover crops to improve soil compatibility and water retention for their farming operation and utilize the resulting forage for their cattle.

“The cover crop component of our farm has changed a lot of things and made cattle operations in fescue country, in my opinion,

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a little more tenable,” John said. “Using these crops as additional forage provides an option that is very valuable not only for the cattle, but for the soil in our fields.

“We’ve been able to extend our grazing season and also produce some really high value hay.”

Fertility at the forefront

In addition to maximizing their land use, John and longtime friend and ranch foreman Matt Reynolds have worked together over the years to produce an efficient and productive cowherd that thrives on the operation’s available forages. Reynolds and his family’s operation, Reynolds Herefords, a multigenerational Hereford seedstock enterprise in Huntsville, have supplied John Ranch Inc. with clean-up sires for several years.

Replacement heifer selection is especially important to John, who prefers heifers that are born in the first 21 to 30 days to keep his calving window tight.

“The geneticists will tell you that fertility is not that heritable, but I still believe that all the things that create fertility are,” he said. “If you’re selecting those heifers out of the cows that obviously conceived in that first cycle, then you can’t get much closer to selecting for fertility.

“There is not a single trait in a cowherd that can increase profitability more than fertility.”

A few years ago, John and Reynolds took a very scientific approach to produce a set of ideal black baldy females with strong maternal traits. The idea stemmed from a 2016 conversation John had with geneticist Mark Allan, who was with Trans Ova at the time, about an 18-year-old cow that had recently come up open.



Fertility was at the forefront of Mike John's decision to create an ideal set of Hereford-sired black baldy females.

“I’ll never forget her number — it was 8026 — and in my numbering system that meant the first number was a year, so I thought she must be a 2008 model,” he said. “But I got to thinking that can’t be because we’ve used the Beef Improvement Federation letter code since 2004, so that meant she was a 1998 model.

“The only way she could have still been in our herd was to have a calf on time and at least in the middle of the calving index every year — and she had given us 16 — so I started talking to Mark about how to recreate her.”

The plan involved identifying a herd of medium-framed Angus cows with specific reproductive efficiency criteria, including tremendous conception rates and a tight calving window. Hereford sires were vetted for strong maternal traits like longevity, soundness, udder quality and even pigmentation around the eyes.

After collecting oocytes from the Angus herd, sexed Hereford semen was used to create the embryos.

“We transferred 116 embryos to my cows, and we got 54 heifer calves,” he said. “Fifty percent is a pretty average success rate, so that’s just almost right on the money.”

The set of baldy females is now on their third calf, and John said he could not ask for a better scenario.

“These cows have been superstars from the beginning,” he said. “They were early maturing, with nearly a 100% conception rate two years in a row and have been really good mamas.

“They are moderate-framed cows and keep good flesh, which is important in our part of the country.”

“There’s no doubt the cattle industry is paying a lot more attention to sustainability today, and ranchers have a great sustainability story to tell.”

— Mike John

Healthy and efficient

In an effort to best match forage resources with the nutrient requirements of those moderate-framed cows, John Ranch Inc. starts calving in August and is done by the end of September.

“Fall calving allows us to take advantage of the grass at its best in September and October and hopefully even in November and December if we get enough rain,” John said. “The grass doesn’t have near the moisture content that it does in the spring so it’s a lot stronger and very nutritious, and that’s when those cows really need a lot of nutrients.”

Hay tests are used to determine necessary supplementation in the winter, whether it’s dry feed, wet feed or cubes, and then calves are weaned early enough in the spring to give cows a chance to get off the supplement and firm back up before summer.

John has devoted much of his professional career to building and directing MFA Health Track, a value-added VAC 45 preconditioning verification program, and he has strong opinions about the importance of overall herd health and its impact on longevity and sustainability.

“I really believe that a solid whole herd vaccination program is critical,” he said. “If you’re talking about building a healthy calf, you’ve got to start with a healthy mom who can offer valuable antibodies in her colostrum.”

As part of the MFA Health Track protocol, John’s calves get two complete rounds of shots, including a modified-live viral, a clostridial and a Pasteurella vaccination, and calves are castrated and dehorned if necessary.

“I think animal health programs are a vital piece to the sustainability puzzle,” he said. “Healthy animals have higher production efficiencies and less impact on the environment.”

Steered by science

As evidenced by the baldy heifer project, John is also passionate about using research and technology to direct and validate production practices and marketing opportunities. He has retained ownership of his calves since the early 1990s and recently worked with Tom Brink, founder and owner of Top Dollar Angus and CEO of the Red Angus Association of America, to test the accuracy of growth EPDs. Utilizing the set of baldy heifers, John used a bull with high EPD growth traits and one with low growth values to produce a calf crop. DNA testing was used to determine each calf’s sire and the cattle were fed, harvested and evaluated, with results indicating the EPDs were accurate.

In his role with MFA, John is currently working with a blockchain developer to create a centralized platform that digitizes data and tracks animal health and performance through the supply chain and essentially helps producers promote various sustainability practices associated with their operation.

“Consumers are more interested than ever in knowing how their food is raised and what possible implications those production practices have on the environment,” he said. “By using a technology like blockchain to share our story, we are able to better communicate our efforts and successes.”

With a long history of industry leadership, including serving as president of the National Cattlemen’s Beef Association in 2006, John said the sustainability conversation has certainly evolved over the past 15 to 20 years.

“There’s no doubt the cattle industry is paying a lot more attention to sustainability today, and ranchers have a great sustainability story to tell,” he said. “I think we need to rely on science to tell us the best way to continue to provide a high-quality, nutrient-dense source of protein for the world, and I think cattle are one of the few species that can do that and do it very sustainably.” **HW**

Editor’s note: This is the final installment in a series of four articles that highlight the conversations, the practices and the outcomes related to ensuring a long-term food supply and a positive environmental impact.