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NEWS

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Photos of Retallick and Faulkner available upon request

Reach for the starch

Producers aiming for high-quality beef, take note: starch is a key at every step in the life of cattle.

A recent study from the University of Illinois shows the level of starch in both growing and finishing diets can affect overall performance and final carcass merit.

“We saw improvements in terms of marbling when we looked at those cattle that were fed higher levels of starch,” says Keela Retallick, an Illinois graduate student who is mentored by well-known animal scientist Dan Faulkner.

She presented an abstract on the topic at the American Society of Animal Science meetings in Des Moines earlier this year.

“A lot of previous studies on starch in the growing phase have fed the cattle a common finishing diet,” she says. “We varied the level of starch in the finishing phase as well.”

Nearly 250 head were early-weaned at an average of 65 days and then entered one of three treatments where they were fed intermediate, low or very low levels of starch.

After 111 days, the cattle were ultrasound scanned, which showed slight differences in marbling score. The 82 head in the highest starch group had a score of 429, compared to 395 for the lowest level.

Performance measures were very similar across all growing treatments.

“In the beginning, the only thing we saw that was affected by level of starch was marbling,” Retallick says.

As the cattle moved into the finishing phase, they were redistributed so there were nine different combinations of growing and finishing diets.

“In the finishing phase, there was a linear tendency to the effect of the marbling score,” she says.

The cattle on the 50% corn diet went nearly 77% Choice, while 32.4% had enough marbling to meet the *Certified Angus Beef*[®] (CAB) brand specifications. The low starch diet reduced Choice grading cattle to 70.5%, but the level of premium Choice was cut in half to 16.1%. Those numbers slid even further for those on the very low starch diet, at 56.8% Choice and 13.6% premium Choice.

Faulkner notes that even the highest level of starch probably does not reflect the industry “norm.”

“That was not a real high starch diet because of the level of protein we needed for those young calves,” he says. They are currently doing work that will look at the differences with diets containing 70% to 80% corn.

Retallick says they expected to see an interaction between level of starch in each phase.

“We didn’t see any effect of that combination,” she says. “Really we just saw the main effect of either the growing or the finishing diet. The cattle that were on the higher level of starch all the way through had the most desirable carcass endpoints in terms of marbling.”

Faulkner says this is consistent with other research across the country.

“Clearly the level of starch has an impact on getting that adipocyte differentiation or marbling in those cattle,” he says. “For these long-fed calves, starch early on is important to get quality in those calves and get additional value out of those carcasses.”

Retallick put dollar-figures to the findings. Although they weren’t statistically different, numerically the economics favor higher starch diets.

“They were more profitable by close to \$20 per hundredweight (cwt.),” she says, noting that was using a five-year average for costs. “Using \$5 corn, it was closer to \$9.”

The performance advantage during the finishing phase, along with carcass quality premiums, defined that profit.

“The feed costs were higher (with intermediate starch) but they were eating less than those on the lower levels,” Retallick says.

The higher starch cattle gained 4.32 pounds (lb.) per day, while the lowest group were at 4.01 lb./day.

The underlying message, Retallick says, is that producers can successfully feed young calves to a higher quality endpoint, and make more dollars doing it.

“If you’re marketing on a grid, you’re definitely going to see some profitability advantages with early weaning in combination with strategically feeding the amount and source of the energy in the diet,” she says.

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