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Efficient or Inefficient – RFI

The 113th K-State Cattlemen's Day did not disappoint, both in the beautiful new facility of the Bilbrey Family Event Center and more importantly the quality of presentations given. Topics around mature cow weights, carcass weights and dry matter intake were all on the table. From that event, I traveled to a cattle sale that puts a focus on feed efficient cattle. As the industry continues to struggle with the definition of "efficient" and the antagonism between smaller cows and demand for larger carcasses, residual feed intake is a term that producers need to be familiar with.

Residual feed intake, or RFI, is defined as the difference between the expected intake of the animal and what they consume. Another definition is the feed required to maintain body weight and allow for additional growth. An animal with a low or negative RFI value is very feed efficient while an animal with a high RFI value will be less efficient than its counterpart.

Heritability of residual feed intake is fair to moderate, so it is a trait where changes can be made through selection. However, there are many factors that affect individual RFI values and RFI alone does not paint the entire picture without evaluating rate of gains as well. RFI values vary dramatically among different breeds, so it is important to understand the way in which your breed of interest evaluates and reports RFI. The largest impact for ranchers when using RFI values in a selection program is reduced feed costs. This occurs because cattle with low RFI values consume less feed.

It has been demonstrated in numerous studies that by selecting for lower RFI a decrease in feed intake by young cattle and cows can be seen, with no detrimental effects on growth or mature size of the animal. The benefits of this are twofold. Not only will cattle consume less, but at market time they will still stand up to market conditions and standards. There are challenges that come with testing for RFI, mostly the equipment, time, and cost of doing this testing. Questions about research done in feedlot settings and if they translate to grazing cowherd situations also circulate within the industry.

Work at Oklahoma State University, partly done by one of K-State's newer beef specialists Dr. Emma Briggs, has boiled down feed efficiency to a practical level for the commercial cattlemen to control cow feed cost by implementing the following concepts: Post weaning forage evaluation of replacement animals, by evaluating average daily gain over a 70-to-100-day post-weaning period, grazing moderate quality forage/hay to select animals who perform well on forage. Emphasizing practical selection methods already in place, such as selecting fertility in cattle challenged with forage-based diets. Using sires with moderate Mature Weight, Dry Matter Intake and Milk EPDs. Finally, purchase sires from breeders reporting cow weights and doing feed intake efficiency testing.

To summarize, residual feed intake values can prove to be very useful as a selection tool in a breeding program looking to reduce cow cost. Ranchers with range cattle must be careful with low RFI value animals because the cattle may not do as well in foraging situations. RFI values are simply another option to utilize during selection. Each producer must analyze individual situations to determine if this tool will be beneficial. Residual feed intake values are another means of selection but should not be the only criteria utilized to select sires and dams.