HOW RFI VALUES INFLUENCE PROFITABILITY

BY MONTE KERLEY, PROFESSOR, UNIVERSITY OF MISSOURI – COLUMBIA

The recent availability of equipment that allows individual feed intake to be measured in cattle, along with increased feed costs, have created explosive interest by cattlemen in measuring feed efficiency in cattle. The measure of efficiency is termed Residual Feed Intake (RFI). RFI is calculated as the actual feed intake of a calf minus its expected intake. The expected intake is calculated as the average intake for the contemporary group with a similar body weight and average daily gain.

An RFI value of -2.5 would mean that the calf with this value consumed 2.5 pounds per day less feed than the average of all animals in the test group, or was a more efficient calf. Cattle producers are interested in how selecting for feed-efficient genetics can benefit their operation and increase their profitability.

University of Missouri conducted an RFI study using a herd of fall-calving cows. They compared forage intake differences between the one-third most efficient and one-third least efficient cows. When the cows were not lactating, the efficient group consumed 20 percent less forage than the inefficient group, and they consumed 12 percent less forage when they were lactating. Additionally, the study measured a 20 percent difference in feed intake of feedlot calves when comparing the one-third most and least efficient animals. For example, in each group of calves tested for RFI, the range in intake is approximately 1.4-fold. So, the least efficient calves consumed 1.4 times more feed than the most efficient calves in the test group. This amounts to approximately 1,100 pounds of feed in the feedlot or over $120 per head at current feed prices.

A collaborative experiment conducted by Dr. Gene Felton at West Virginia University and the University of Missouri compared progeny of a negative RFI bull (efficient) compared to a positive RFI bull. The calves out of the negative RFI bull consumed almost $70 less feed per head from 950 to 1,350 pounds. For example, if the negative RFI bull was used for a three-year period to cover 40 cows per year, it would cost $8,400 less in feed costs for those cattle than if an inefficient bull was used.

There are few technologies available to cattlemen that can impact profitability as much as RFI testing. However, it's important to point out that single-trait selection or overemphasis on RFI can be disastrous for a cattle breed or individual breeder. While every opportunity should be taken to make RFI one of the selection criteria, it has to be part of a balanced genetic selection program.

Efficiency is rapidly becoming an industry priority. Its impact on profitability is tremendous, and its heritability allows rapid progress. Our data to date has shown that selecting for efficiency has immediate impact, and the impact is on the cow herd as well as in the feedlot.