Proving Efficiency

Measuring residual feed intake allows producers to select for more efficient animals.

by Sara Gugelmeyer

It’s a simple concept. If an animal eats less and gains more in a production setting, it’s a superior animal. That, in essence, is what the RFI (residual feed intake) value measures.

And, what more and more beef cattle producers are discovering is that an animal that is more efficient, or has a “good” RFI value, benefits everyone in the production chain.

For example, a more efficient cow helps the cow-calf guy by weaning a more efficient, bigger calf on less feed. The more efficient calf eats less and gains more all the way to the packinghouse, making more money for the stocker, backgrounder and feeder, which in some cases is all the same person. Now, wouldn’t it be smart to be that person?

That’s what cattlemen like Alex Mih and Tom Krauss think, anyway.

Testing for efficiency

Alex Mih is the co-owner of MM Ranch, Chanute, Kan., and has been collecting RFI data on some of his calves since 2005. “The data itself allows us to select individual animals who are very efficient without necessarily selecting for excessive mature cow size,” Mih explains.

The MM Ranch herd consists of about 1,200 cows and started testing bulls for RFI in 2005, then added heifers to the test in 2006. Mih now has data on more than 700 females and 100 bulls and even bought a GrowSafe system so he could test calves himself.

Tom Krauss, Russell, Kan., runs about 150 cows, part of which are registered Herefords. He sells registered Hereford bulls and females as well as commercial females. He’s tested about 50 head a year for the last three years for RFI data because efficiency is important to him and his customers. “The whole reason we started doing RFI is because feed efficiency and cost of gain is a prime driver on feeding cattle and cow maintenance costs,” Krauss says.

Although Krauss tests most of his cattle at the University of Wyoming facility near Lingle, many other bull tests offer RFI testing as well. Green Springs Bull Test, Nevada, Mo., was the first bull test to use the GrowSafe technology back in 2005. According to Kent Abele, owner and manager, demand for RFI testing has increased, and the facility has doubled its capacity to accommodate. Green Springs can now test up to 260 head at a time and usually tests about 1,000 head a year.

“Breeders want this data because they realize that about 65% of the variable costs in their operation is feed cost,” Abele says. “Efficiency is the one area that we can genetically make the biggest gains in regard to the bottom line.”

Not a single trait selection tool

Although it’s tempting to simply select for the most efficient cattle or cull the least efficient, it’s important to not use RFI as a single trait selection tool. “We need to find the cattle that do several things well,” Abele says. “Not all efficient cattle grow well or have good carcass data. We need to find cattle that move several traits in the right direction.”

Mih says, “RFI complements everything else we measure. If we have a bull that is good on birth weight, carcass and rate of gain, among others, and also has a highly negative residual feed intake, indicating a very efficient animal, that is highly desirable, so we want to multiply that animal. To us it’s valuable because it allows us to add input in addition to all the other criteria we think are important in breeding stock.”

Krauss also says not to get too focused on the actual RFI value but to consider the measurements that are used to calculate that number. “I don’t get too hung up on the RFI number itself. I think what is important is the gain and intake and conversion data that ultimately means cost of gain.”

Because the technology to test for RFI is relatively new, Mih and Krauss base their progress on somewhat limited data, but both agree selecting for efficient cattle has helped their operations. The heritability of efficiency is about the same as carcass traits, which is defined as moderate or about a .39 to .45.

Krauss says he culls anything that falls out of a desirable range for efficiency. “I cull anything that totally falls out of bed in terms of RFI data,” he says. “Replacement...
heifers that don’t gain but intake is through the roof have to go. Also anything that really gained but really didn’t drink or didn’t even go to the window. It doesn’t matter how much milk, you can throw it all out the window. He prefers a cow with moderate milk and weaning management style. If there are changes to come to the top of the bunch, he will likely be within an acceptable range. We are seeing a higher proportion of calves that are more efficient. We are eliminating the variance.

RFI value, at least in Krauss’ operation, has proven to correlate to a more efficient cow. He prefers a cow with moderate milk, but he will likely be within an acceptable range. We are seeing a higher proportion of calves that are more efficient. We are eliminating the variance.

RFI value, at least in Krauss’ operation, has proven to correlate to a more efficient cow. He prefers a cow with moderate milk, but he will likely be within an acceptable range. We are seeing a higher proportion of calves that are more efficient. We are eliminating the variance.

RFI value, at least in Krauss’ operation, has proven to correlate to a more efficient cow. He prefers a cow with moderate milk, but he will likely be within an acceptable range. We are seeing a higher proportion of calves that are more efficient. We are eliminating the variance.

Residual feed intake, or RFI as it is commonly called, is the difference between actual feed intake and predicted feed intake based on the requirements for production and maintenance of body weight. The predicted feed intake is calculated by considering the feed intake, average body weight and average daily gain of all the calves in the group. University of Missouri animal scientist Monty Kerley has focused his research on cattle efficiency. He explains, ‘Right now the topic is new and some of our customers are interested in it.’ Mih says, ‘There is maybe some confusion about it and it’s not known by everyone.’ Krauss has now offered RFI data on three bull crops for sale and admits most of his bull customers retain ownership of their calves and the majority considers RFI when purchasing. ‘They were somewhat hesitant, but customers that bought RFI-tested bulls and are now getting milk herself out of pregnancy in my program.’

Where’s the value? But, these two cattlemen are seedstock producers, so are buyers also looking for a proven efficient animal? The problem is many people still don’t understand RFI values, Mih and Krauss say. Krauss has now offered RFI data on three bull crops for sale and admits most of his bull customers retain ownership of their calves and the majority considers RFI when purchasing. ‘They were somewhat hesitant, but customers that bought RFI-tested bulls and are now getting milk herself out of pregnancy in my program.’

Where’s the value? But, these two cattlemen are seedstock producers, so are buyers also looking for a proven efficient animal? The problem is many people still don’t understand RFI values, Mih and Krauss say. ‘Right now the topic is new and some of our customers are interested in it,’ Mih says. ‘There is maybe some confusion about it and it’s not known by everyone.’ Krauss has now offered RFI data on three bull crops for sale and admits most of his bull customers retain ownership of their calves and the majority considers RFI when purchasing. ‘They were somewhat hesitant, but customers that bought RFI-tested bulls and are now getting milk herself out of pregnancy in my program.’

Where’s the value? But, these two cattlemen are seedstock producers, so are buyers also looking for a proven efficient animal? The problem is many people still don’t understand RFI values, Mih and Krauss say. ‘Right now the topic is new and some of our customers are interested in it,’ Mih says. ‘There is maybe some confusion about it and it’s not known by everyone.’ Krauss has now offered RFI data on three bull crops for sale and admits most of his bull customers retain ownership of their calves and the majority considers RFI when purchasing. ‘They were somewhat hesitant, but customers that bought RFI-tested bulls and are now getting milk herself out of pregnancy in my program.’

Where’s the value? But, these two cattlemen are seedstock producers, so are buyers also looking for a proven efficient animal? The problem is many people still don’t understand RFI values, Mih and Krauss say. ‘Right now the topic is new and some of our customers are interested in it,’ Mih says. ‘There is maybe some confusion about it and it’s not known by everyone.’ Krauss has now offered RFI data on three bull crops for sale and admits most of his bull customers retain ownership of their calves and the majority considers RFI when purchasing. ‘They were somewhat hesitant, but customers that bought RFI-tested bulls and are now getting milk herself out of pregnancy in my program.’

Where’s the value? But, these two cattlemen are seedstock producers, so are buyers also looking for a proven efficient animal? The problem is many people still don’t understand RFI values, Mih and Krauss say. ‘Right now the topic is new and some of our customers are interested in it,’ Mih says. ‘There is maybe some confusion about it and it’s not known by everyone.’ Krauss has now offered RFI data on three bull crops for sale and admits most of his bull customers retain ownership of their calves and the majority considers RFI when purchasing. ‘They were somewhat hesitant, but customers that bought RFI-tested bulls and are now getting milk herself out of pregnancy in my program.’

Where’s the value? But, these two cattlemen are seedstock producers, so are buyers also looking for a proven efficient animal? The problem is many people still don’t understand RFI values, Mih and Krauss say. ‘Right now the topic is new and some of our customers are interested in it,’ Mih says. ‘There is maybe some confusion about it and it’s not known by everyone.’ Krauss has now offered RFI data on three bull crops for sale and admits most of his bull customers retain ownership of their calves and the majority considers RFI when purchasing. ‘They were somewhat hesitant, but customers that bought RFI-tested bulls and are now getting milk herself out of pregnancy in my program.’