

It's Proven!

Efficiency Proven Genetics offer you up to 20% more savings on the cow herd... and 20% more savings in the feedlot. It doesn't cost you any more than making sure you're using the right bulls and the right semen.

Many of you have asked, how do I know if RFI selection really works in my cow herd? This issue is dedicated to providing the research and papers that have worked to quantify the value of RFI selection to the cow herd and the industry.

When you look at this industry and evaluate what is the primary reason we even exist as cattle producers, it is the ability of cattle, being ruminants, to convert grass and roughages to a highly nutritious, protein dense product that is loved world wide – Beef! It is well understood that we sell our grasses and roughages through the production of cattle.

The cow is our primary income driver with 90% of the genetics introduced to the cowherd coming from the bulls we use, whether it's fertility, durability, longevity, weaning weight or efficiency.

**Midland Bull Test Sale
April 5-6, 2018**

**McDonnell BEEF Country Sale
Nov. 29, 2017**

120 Fall & Coming 2's, Columbus, MT

May 2, 2018

100 Yearlings, Bowman, ND



McDonnell steers at Noble Foundation, OK. In 2013 we had 150 steers enrolled in the largest grass efficiency test to date.

BENEFITS & VALUES OF RFI

- 38-40% Heritability which is high in production traits.
- 90% correlation between how a tested bull does and how his daughters do.
- Independent trait with no correlation to other traits such as fertility, milkability, performance, frame size, body condition, etc. — which means you can select for this trait without having a negative impact on other traits.
- Efficiency benefits are found both in cow herd and in the feedlot.
- There is a potential to improve efficiency up to 20-25%.
- Feed & grass costs are the #1 expense in raising cattle, after fixed costs.
- 70% of feed is used just for maintenance – improving feed efficiency can have a big economic impact.

The Most Proven Efficiency Program in the West

MIDLAND BULL TEST

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The greatest opportunity for ranchers long term profitability lies in our ability to efficiently and productively convert grass to pounds and profitability. To do that it takes a fertile, sound, efficient, productive cow with longevity ... **“IT’S THAT EASY!”**

- Efficient cattle are quieter cattle
- Research has shown that young bulls tested for feed intake and RFI will have a genetic correlation of .90 for the same genetic improvement in the daughters retained for in herd use.
- Research has shown that the most efficient 1/3 of cows in your herd will consume up to 20% less forage than the least efficient 1/3 of cows in your herd.
- Size doesn't matter – just because a cow is small or fat doesn't mean she is efficient in her feed utilization, it just means she's small or fat.
- There is a strong, positive genetic correlation between post-weaning RFI and feed intake as a mature cow. **(Herd-2000, Niewolf-1992)*
- Cows at the Bair ranch measured for RFI as calves, showed the same efficiency as producing cows with a 30% variance in feed intake as first & second calvers.* Accounting for today's costs that a \$50 difference in wintering costs alone.**(Patterson, MSU 2000)*
- Studies in Australia on 284 four-year-old cows that had been RFI tested as calves found that cows who were efficient as weaned calves required less feed as mature cows with no compromise in the weaning weight of their calves.
- At West Virginia University, they took steers from a low RFI sire and from a high RFI sire, and measured their intake on pasture through the summer. This particular summer saw a drought develop, and as the drought got stronger the negative RFI steers excelled even more. No surprise here, as it only makes sense that cattle who metabolize their feed better will excel on limited feed/pasture conditions.

UNIV. OF ARIZONA REPORTED

Recently, we measured forage intake on cows that have survived under Arizona range conditions at the UA V-V ranch. The low RFI cows consumed hay at 1.9% of body weight while the high RFI cows consumed hay at 2.4% of BW. This is a field observation of only 40 cows, but it suggests that RFI may be useful in selecting cows that survive under arid range conditions.

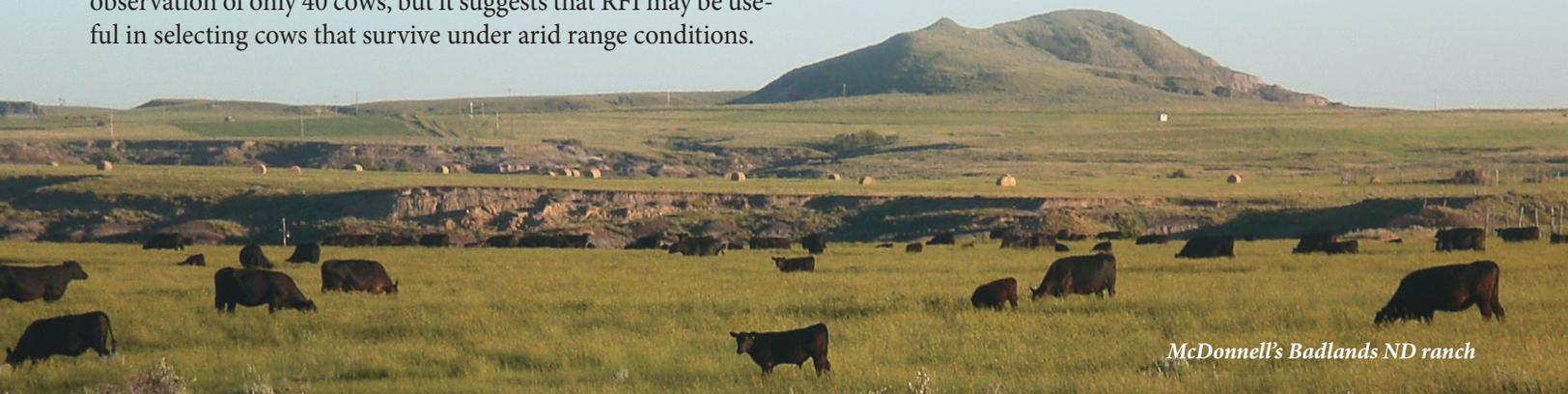


What excited us about RFI is it is the first time in recent years that we have been given a selection tool that is about the cow/cowherd. The benefit of selecting for RFI means better utilization of grass, more drought resistant females and improved nutrition utilization. These benefits compound to ultimately result in improved fertility and longevity while not compromising weaning weight.

MAY 10, 2010 THE UNIV. OF UTAH REPORTED

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. Another point in favor of low RFI values is progeny from low RFI value parents. It has been demonstrated that low RFI value sires and dams are more likely to produce low RFI value progeny *(Richardson et al., 2001)*. This links back to how heritable the trait is.

“In a world of growing population and limited land availability, you can not talk about sustainability without incorporating the efficient use of land resources and feed.”



IN 2010 DR MONTY KERLEY, UNIV. OF MISSOURI PUBLISHED

Our goal in animal selection is to identify and propagate animals near biological maximum for efficiency of consumed energy use, and RFI provides a phenotype for that purpose. . . Intake among calves similar in body weight and daily gain will vary by 40%. . . Contrasting the one-third most efficient against the one-third least efficient calves can reduce feed costs 20% or more. . . The one-third most efficient cows consumed 20% less forage when nonlactating and 12% less forage when milking compared to the one-third least efficient cows. Impact of selecting for efficiency has always been important but now more than ever.

We have conducted two experiments to determine effect of heifer RFI phenotype on forage intake as cows. Cows were bred to calve during fall and intake measurements were made while grazing pasture prior to calving (late May to early August) and while lactating (late February to late April).

Initial BCS (body condition score) was not different between efficiency groups for the three-month summer grazing period. Body weight loss was similar between efficiency groups and, consequently BCS change was also similar between efficiency groups. Intake by efficient cows was 27 lbs per day and by inefficient cows was 34 lbs per day. Intake by efficient cows was 21% lower than by inefficient cows. These data agreed with other research that reported a reduced forage intake by negative RFI cows. Difference in intake between negative and positive RFI cows was greater during the nonlactating compared to the lactating period. . . . Regardless of lactation stage, selection for efficient cows reduced forage need by the herd, with intake by efficient cows being 10 to 20% less through the year than inefficient cows without any differences in weight change or body condition score during the year (*Meyer et al, 2008*).

Few management techniques can be offered to beef producers that yield a 10 to 15% improvement in production efficiency. By stacking generations selected for RFI improvement greater than 20% in production efficiency can be achieved.

2013 UNIV. OF FLORIDA RESEARCH PAPER

When forage is limited small improvements in efficiency can make a large improvement in cowherd maintenance. Therefore, selection of replacement heifers becomes important. When cow performance was assessed based on heifer feed efficiency rank, cows which were most efficient as heifers had significantly lower DMI (Dry Matter Intake) than their counterparts and consumed 2.6 or 2.8 lb/d less than cows that were Medium and High heifers. Interestingly, DMI was the only parameter that significantly differed; therefore, the most efficient heifers subsequently became cows that were phenotypically similar, but consumed less feed than cows that were considered less efficient as heifers.



A STUDY OUT OF TEXAS A&M BY HAFLA, CARSTENS AND OTHERS FOUND

Females with low RFI as heifers consumed 17% less ($P < 0.01$) forage compared to females with high RFI as heifers but maintained the same BW, BW gain, and body composition. Likewise, RFI classification did not affect calving date. Results indicate that heifers identified as having low postweaning RFI have greater efficiency of forage utilization as pregnant females, with minimal impacts on growth, body composition, calving date, and calf birth BW, compared to their high-RFI counterparts.

DAN SHIKE UNIV. OF ILLINOIS REPORTED

Results from this study suggest that heifers that are more efficient based off of RFI will consume less dry matter than cows, with no differences in cow or calf performance or reproduction,” he said. . . “The relationship between heifer intake and cow intake is encouraging.”

Speaking during the 2014 Beef Improvement Federation symposium in Lincoln, Neb., June 19, Shike admitted that little progress has been made in improving beef cow feed efficiency. That’s because the industry has focused more on increasing output, with increased input requirements as a consequence. However, Shike said studies suggest that the feed intake of a developing heifer is a likely indicator of her intake requirement as a mature cow.

Shike described a study that evaluated groups of heifers for RFI, residual body weight gain and only dry-matter intake, respectively, from their development period, through breeding and delivery of their first calves, and up until heifers in each group were bred for a second time. The GrowSafe feeding system was used to measure feed intake.

“Heifers with a favorable RFI (ate less than expected) also ate less as cows, but there were no significant differences in mature size, reproductive performance or calf performance,” explained Shike.

When evaluated for intake, heifers exhibiting low intake during development weighed less at 2 years of age and their feed intake remained lower. There were no differences in rebreeding rates between low and high-intake heifers as 2-year-olds.

Can you tell which bull offers you over **\$17,000** more in progeny value?



Bull A: ADG: 3.47 Dry Matter Intake 28.73 lbs/day
Feed to Gain Ratio 8.28 lbs of feed/lb of gain RFI 3.90



Bull B: ADG: 3.26 Dry Matter Intake 22.45 lbs/day
Feed to Gain Ratio 6.90 lbs of feed/lb of gain RFI -2.77
21% less feed for the same production.

There are a lot of folks claiming to have efficient cattle.

But, we all know you can't select for a trait if you don't actually measure it.

For Example . . .

Bulls A & B were both tested at Midland and both came off the efficiency test at 1,100 lbs. Bull B is eating 6.28 less feed per day on a dry matter basis.

That's an \$80-\$120/head savings in the feedlot and \$60-\$80/year savings on daughters retained in the cow herd without impacting any weights of their calves.

Here's the math, figuring 3 calf crops:

45 steers & 15 heifers to the
feedlot x \$80/head = \$4,800

30 heifers retained in the herd
x 7 years x \$60/head/year = \$12,600

Total Value = \$17,000

(and that's the low side)

In 2013 we fed 200 steers at Decatur Feeders in Kansas where They set a new record for feed conversion!



efficiency sires have consistently excelled against these breed leaders by as much as 17% in feed savings while maintaining or excelling in performance.

Since then our steers have excelled wherever they are fed. In 2017 their cost of gain was 11% better than the average of the feedlot where we test.

Included in every progeny test are leading AI sires in the Angus breed. Our effi-



For the Record

We believe if your in the seedstock business you should constantly be validating your genetics. Every year we progeny test our efficiency sires.