GrowSafe RFI Quick Facts

FREQUENTLY ASKED QUESTIONS

What are the benefits of selecting for low residual feed intake (RFI) animals*:

- Reduction of overall feed intake by up to 12% while maintaining the same level of production
- Reduction in the maintenance requirements of the herd by 9-10%
- Improvements in the feed conversion rates of calves of from 9-15%
- Reduction of manure NPK production by 17% and greenhouse gas emissions such as methane, by 30%

What does this mean for a cow herd?

By selecting for RFI, or introducing several low RFI bulls into your herd, feed-related savings will continue to increase. Several years of genetic selection will improve the baseline feed efficiency of the ranch and savings will continue to transfer to the cow herd as replacement heifers are retained.

What is Residual Feed Intake (RFI)?

Residual feed intake (RFI) is a measure of feed efficiency that is calculated as the difference between an animal's actual feed intake and it's expected feed intake. RFI is independent of body weight and size. Differences in the trait cannot be detected by physically looking at an animal, it requires accurate and simultaneous measurement of an animal's feed intake and body weight. Animals with low RFI values are more efficient than those with high RFI values.

What is the heritability of RFI?

RFI is a moderately heritable trait (26-58%), and when used as a selection tool, will result in progeny that consume less feed for the same level of production. RFI is independent of growth, body size and other performance traits, meaning that selection for animals with low RFI will lead to reduced feed intake and improved feed efficiency without compromising body size or growth.

Does selection for low RFI animals, that eat less, result in reduced performance and average daily gain (ADG)?

No, selection for RFI does not result in cattle with reduced performance and ADG. Efficient and inefficient cattle can have both high and low ADGs. To prevent a decline in performance, it is important to select for low RFI animals with sufficient ADG. GrowSafe does not recommend single trait selection.

How is RFI calculated?

RFI is calculated as the difference between an animal's actual feed intake and their expected feed intake. An animal's expected feed intake depends on its body size and growth rate. The calculation for expected feed intake is comprised of data from the entire contemporary group using the animals' dry matter intake, mid-test metabolic body weight and average daily gain data. The GrowSafe data analysts use the data captured automatically and continuously by the Feed Intake technology to determine each individual animal's actual feed intake, which is compared to their expected feed intake. Concurrently, the highly accurate partial body weights collected from the GrowSafe Beef® technology are used to determine each individual animal's average daily gain and body weight. Example:

	Expected Intake	Actual Intake
Animal A	8.5	10
Animal B	10	9.5

- Animal A: RFI = 10 – 8.5 = 1.5
- Animal B: RFI = 9.5 – 10 = -0.5

Animal B is more efficient because it has a lower RFI value and because it eats less than expected for its size and level of production.

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