Effects of feeding level on efficiency of high and low residual feed intake beef steers.

ASAS EDITORIAL

Feed is a major cost factor in beef production. **Cattle that metabolize feed more efficiently can therefore improve profits and reduce resource use.**

Climate change is expected to exacerbate disruptions in feed supply (e.g., via drought), therefore there is interest in selecting the most efficient animals. However, **it is unclear whether steers with a low RFI (residual feed intake—a measure of the animal's baseline feed efficiency) also remain more efficient when feed is restricted.**

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The energy requirements of high RFI and low RFI steers were compared after a period of free access to feed followed by a period of restricted feed intake:

After feed was restricted, both groups used less energy, however the low RFI steers decreased their energy requirements more than the high RFI steers.

Steers with better feed efficiency remain more efficient even when feed is restricted. These findings can help beef producers reduce costs and resource use under a changing climate.

INFOGRAPHIC

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The physiological basis for differences in beef cattle feed efficiency, as defined by residual feed intake (RFI), has been explored extensively. Divergent RFI may be partially explained by differences in nutrient digestibility and rumen volatile fatty acid production (Johnson et al., 2019), feeding behavior (Parsons et al., 2020), and intestinal microbiome composition (Welch et al., 2020). With increasing concerns regarding climate change and narrow profit margins, a recent paper examined efficiency parameters in feed-restricted beef steers (Andreini et al., 2020). Results point to conserved mechanisms underlying low RFI which may be a cost benefit for producers experiencing fewer feed resources.

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