Project Title: Understanding the physiology behind changes in feed efficiency throughout the finishing period

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Background

Feed efficiency and cost of gain strongly impact feedlot profitability. Feed efficiency is thought to decline with advancing days on feed, though factors contributing to this are unclear. Understanding changes in feed efficiency over the course of the finishing period may identify opportunities to further improve feedlot production efficiencies.

Objectives

To improve our understanding of how digestive physiology, nutrient absorption, and post-absorptive nutrient utilization vary over the feeding period.

What they will do

Several studies will evaluate whether diet (varying in starch and fat content), days on feed, and their interaction affect apparent total tract digestibility, short-chain fatty acid absorption from the reticulo-rumen, and post-absorptive nutrient utilization by cattle. Basic knowledge obtained from initial tightly controlled metabolism studies will be used to identify periods during the growth curve where feeds varying in energy content, substrate, and cost may be used to improve feed efficiency. These strategies will be tested with applied feeding trials in small pen studies, then validated in large-scale commercial study that will evaluate production economics under industry-relevant conditions.
Implications

This research will help to identify potential strategies to optimize feed efficiency, animal health, and cost of production.

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