SCALING
METHANE PHENOTYPING IN BEEF CATTLE

Vytelle SENSE

This study demonstrated that integrating methane sensors into automated feed intake nodes enables scalable, high-throughput methane phenotyping during normal feeding behavior. The approach delivers accurate methane and feed intake data in commercial settings, supporting genetic selection for more feed-efficient, lower-emission cattle.

25,000+
Feeding Events
(Methane + Feed Intake concurrently)

2
Independent
Trial Sites

30 DAYS
to 0.80 Accuracy

STUDY HIGHLIGHTS

- Evaluated in **two independent beef production** environments
- **25,000+ feeding events** analyzed after quality control
- Simultaneous collection of methane concentration and feed intake data
- Measurements captured during normal feeding behavior—no separate methane station required

KEY FINDINGS

- **Accuracy:** Achieved 0.80 phenotypic accuracy in just 28–30 days.
- **Biologically Meaningful Results:** Methane phenotypes were positively associated with average daily feed intake, supporting the validity of the measurement approach.
- **Higher Data Density:** Collecting methane measurements during every meal generated more frequent observations than traditional methods.

WHY IT MATTERS

Integrating methane sensors directly into automated feed intake systems provides a practical, scalable approach for collecting high-quality methane and feed intake data under commercial conditions.

This technology supports more accurate genetic evaluations, enabling producers to select cattle that are both **feed efficient** and **environmentally sustainable**.

Feed efficiency is more than gain and feed intake. Methane represents energy lost during digestion, making it an important part of the overall feed efficiency equation.

By measuring feed intake and methane concurrently, producers and genetic programs gain a more complete understanding of how cattle utilize energy, supporting selection for more efficient, lower-emission animals.

Study summary based on research by Thekkoot, Gillespie, Powell, and Osterstock (2025). Full paper available here.

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