

Natural Systems



From Research to Ranch: Improving Emissions Intensity in Sustainable Beef



New research from the University of Saskatchewan is shedding light on a promising methane-reduction pathway within the beef sector. Led by Dr. Gabriel Ribeiro, the study examined 64 Black Angus-cross heifers to understand why some cows break down forage more effectively than others. Cattle that digest fibre more effectively were compared with those that were less efficient, using measures such as feed use, weight gain and methane output.

The findings revealed that more efficient cattle can eat more forage and gain weight at the same rate as other cattle, while producing fewer gases per unit of feed digested. This reduced methane intensity suggests that improving digestive efficiency could play a major role in improving the emissions intensity of beef production.

This work was funded by Natural Sciences and Engineering Research Council of Canada, Beef Cattle Research Council, Alberta Beef Producers and Saskatchewan Cattle Association. Future work aims to expand research to a larger number of animals and identify genetic markers that enable producers to select animals with naturally high feed efficiency and low methane intensity.

Why It Matters

This research strengthens resilience by identifying a practical, biological pathway to reduce methane intensity in beef production. By selecting cattle that naturally emit less methane per unit of feed, producers can improve emissions intensity without sacrificing productivity or increasing costs. With better understanding of genetic markers, could offer a long-term, herd-wide mitigation strategy that embeds methane reduction directly into breeding and production practices.

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