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Feeding behavior traits may be an indicator of feed efficiency in Holstein cows

New research in the Journal of Dairy Science® shows a slower eating rate is correlated with feed efficiency

Philadelphia, September 28, 2022 – Genetic selection is a powerful tool to improve livestock production, given that genetic gains are cumulative and permanent, and feeding behavior in cows may be used as an indicated trait for feed efficiency. In a [new report](#) in the [Journal of Dairy Science®](#), published by FASS Inc. and Elsevier, eight researchers from the University of Wisconsin (Madison, WI), Council on Dairy Cattle Breeding (Bowie, MD), and Michigan State University (East Lansing, MI) concluded that measures of feeding behavior could be useful indicators of dairy cow feed efficiency, and individual cows that eat at a slower rate may be more feed efficient.

Due to the lack of feeding behavior genetic studies in lactating dairy cattle and the potential for using these traits as indicators of feed efficiency, the objective of this study was to investigate different feeding behavior traits and their genetic associations with feed efficiency traits in lactating US Holstein cows. Researchers estimated genetic parameters for feeding behavior traits using daily records.

“Interestingly, some feeding behavior traits were strongly genetically correlated with feed efficiency,” said lead researcher Ligia Cavani, PhD, Department of Animal and Dairy Sciences, University of Wisconsin. The research team found that feeding rate showed a strong positive genetic correlation with dry matter intake, metabolic body weight, and residual feed intake in particular.

The researchers used data from daily feeding behavior records of 1,328 Holstein cows in 31 experiments conducted from 2009 to 2020 in a facility at the University of Wisconsin-Madison Emmons Blaine Dairy

Cattle Research Center (Arlington, WI). The facility used an automated intake recording system, which permits one animal to access the feeder at a given time. The feeding behavior traits considered included number of feeder visits per day, number of meals per day, duration of each feeder visit, duration of each meal, total duration of feeder visits, intake per visit, intake per meal, feeding rate per visit, and feeding rate per meal.



Caption: New research on Holstein cows published in the *Journal of Dairy Science* finds that measures of feeding behavior could be useful indicators of dairy cow feed efficiency, and individual cows that eat at a slower rate may be more feed efficient (Credit: Ken Olson, PhD, PAS).

“Overall, our results suggest that measures of feeding behavior could be useful indicators of dairy cow feed efficiency and that individual cows that eat at a slower rate may be more feed efficient,” said Cavani.

Notes for editors

The article is “Estimates of genetic parameters for feeding behavior traits and their associations with feed efficiency in Holstein cows,” by Ligia Cavani, William E. Brown, Kristen L. Parker Gaddis, Robert J. Tempelman, Michael J. VandeHaar, Heather M. White, Francisco Peñagaricano, and Kent A. Weigel (<https://doi.org/10.3168/jds.2022-22066>). It appears in the *Journal of Dairy Science*, volume 105, issue 9 (September 2022), published by FASS Inc. and [Elsevier](#).

The article is openly available at [https://www.journalofdairyscience.org/article/S0022-0302\(22\)00399-X/fulltext](https://www.journalofdairyscience.org/article/S0022-0302(22)00399-X/fulltext).

Full text of the article is also available to credentialed journalists upon request. Contact Eileen Leahy at +1 732 238 3628 or jdsmedia@elsevier.com to obtain copies. Journalists wishing to interview the authors should contact the corresponding author, Michael J. VandeHaar, Department of Large Animal Clinical Sciences, Michigan State University, at mikevh@msu.edu.

About the *Journal of Dairy Science*

The *Journal of Dairy Science*® (JDS), an official journal of the American Dairy Science Association®, is co-published by Elsevier and FASS Inc. for the American Dairy Science Association. It is the leading general dairy research journal in the world. JDS readers represent education, industry, and government agencies in more than 70 countries, with interests in biochemistry, breeding, economics, engineering, environment, food science, genetics, microbiology, nutrition, pathology, physiology, processing, public health, quality assurance, and sanitation. JDS has a 2021 Journal Impact Factor of 4.225 and five-year Journal Impact Factor of 4.987 according to Journal Citation Reports™ (Source: Clarivate™ 2022).

www.journalofdairyscience.org

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