DURHAM, N.H. — New England’s dairy industry continues to evolve in response to significant market challenges that include a decreased demand for milk and higher production and land costs. However, there is also ongoing evidence that organic dairy farming can provide environmental benefits — such as reducing methane emissions — which could further differentiate their products as well as help qualify farms for new government initiatives to reduce methane through innovative management practices. Researchers from the University of New Hampshire collaborated with researchers in Maine to find evidence that nearly half of organic dairy farmers would be willing to pay a little extra for methane-reducing seaweed-based feed but would only consider if it was cost effective, aligned with existing feeding practices and would qualify them for government policies and subsidies.

“Dairy farmers aim to run their farms as lucrative enterprises,” said Andre Brito, associate professor of dairy cattle nutrition and management and a scientist at UNH’s New Hampshire Agricultural Experiment Station. “The additional cost would require serious considerations, as well as more data and an effective implementation of carbon markets in the future.”

In the study published in Frontiers in Veterinary Science, researchers surveyed 35 Maine organic dairy farmers, all of whom were familiar with seaweed-based feeds and a third of whom were already using such feeds on their farms. Nearly half of respondents reported a willingness to pay, on average, an additional 64 cents per cow per day for methane-reducing seaweed-based feed.

As part of the study, the researchers conducted a feeding trial in Maine’s Wolfe’s Neck Center for Agriculture & the Environment, where they fed 22 cows a diet containing 6% red seaweed (C. crispus) — locally harvested from the Maine coastline — from February through May of 2021. The results of the trial showed that adding this seaweed to the cows’ diet reduced methane production by 13.9% without affecting milk production and quality.

“Maine is the birthplace of temperate seaweed farming in the United States and also supports organic certification of seaweeds,” said Nichole Price, a senior research scientist with the Bigelow Laboratory for Ocean Sciences and the director of the Bigelow Center for Seafood Solutions. “The close proximity of the nascent seaweed industry to organic dairy farms makes Maine the perfect testbed for this exciting line of inquiry.”
The survey also revealed that 93% of the farmers were more concerned about issues like labor shortages, infrastructure problems, rising costs and unstable supply chains, rather than climate change and regulation. This means that farmers would only consider using seaweed in their cows’ diets if it is cost-effective and has additional benefits, while also aligning with existing feeding practices and receiving support from government policies and subsidies.

Funding was provided by USDA National Institute of Food and Agriculture and the N.H. Agricultural Experiment Station.

Co-authors include lead author Diana Reyes, UNH; Jennifer Meredith, Colby College; Leah Puro, Wolfe’s Neck Center for Agriculture and the Environment; Katherine Berry, Wolfe’s Neck Center for Agriculture and the Environment; Richard Kersbergen, University of Maine Cooperative Extension; Kathy Soder, USDA; Charlotte Quigley, Bigelow Laboratory for Ocean Sciences; Michael Donihue, Colby College; and Dorn Cox, Wolfe’s Neck Center for Agriculture and the Environment.

Founded in 1887, the NH Agricultural Experiment Station ([https://nam12.safelinks.protection.outlook.com/?url=https%3A%2F%2Fcolsa.unh.edu%2Fnhwashington-agricultural-experiment-station&data=05%7C02%7Ckeith.testa%40unh.edu%7C7Cee6c038b3a64a48e2e808dc5333ca68%7C6d241893512d46dc8d2bbe47e25f5666%7C0%7C0%7C6384767806!](https://nam12.safelinks.protection.outlook.com/?url=https%3A%2F%2Fcolsa.unh.edu%2Fnhwashington-agricultural-experiment-station&data=05%7C02%7Ckeith.testa%40unh.edu%7C7Cee6c038b3a64a48e2e808dc5333ca68%7C6d241893512d46dc8d2bbe47e25f5666%7C0%7C0%7C6384767806!)) the UNH College of Life Sciences and Agriculture is UNH’s first research center and an elemental component of New Hampshire’s land-grant university heritage and mission. We steward federal and state funding, including support from the USDA National Institute of Food and Agriculture, to provide unbiased and objective research concerning diverse aspects of sustainable agriculture and foods, aquaculture, forest management, and related wildlife, natural resources, and rural community topics. We maintain the Woodman and Kingman agronomy and horticultural research farms, the Macfarlane Research Greenhouses, the Fairchild Dairy Teaching and Research Center, and the Organic Dairy Research Farm. Additional properties also provide forage, forests, and woodlands in direct support to research, teaching, and outreach.

The University of New Hampshire ([https://nam12.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.unh.edu%2F&data=05%7C02%7Ckeith.testa%40unh.edu%7Cee6c038b3a64a48e2e808dc5333ca68%7C6d241893512d46dc8d2bbe47e25f5666%7C0%7C0%7C6384767806!](https://nam12.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.unh.edu%2F&data=05%7C02%7Ckeith.testa%40unh.edu%7Cee6c038b3a64a48e2e808dc5333ca68%7C6d241893512d46dc8d2bbe47e25f5666%7C0%7C0%7C6384767806!)) innovation and transforms lives in our state, nation, and world. More than 16,000 students from 49 states and 82 countries engage with an award-winning faculty in top-ranked programs in business, engineering, law, health and human services, liberal arts and the sciences across more than 200 programs of study. A Carnegie Classification R1 institution, UNH partners with NASA, NOAA, NSF and NIH, and received over $210 million in competitive external funding in FY23 to further explore and define the frontiers of land, sea, and space.

PHOTO AVAILABLE FOR DOWNLOAD

https://colsa.unh.edu/sites/default/files/media/2024-03/unh-organic-dairy-cows-in-pasture.jpg ([https://nam12.safelinks.protection.outlook.com/?url=https%3A%2F%2Fcolsa.unh.edu%2Fsites%2Fdefault%2Ffiles%2Fmedia%2F2024-03%2Funh-organic-dairy-cows-in-pasture.jpg&data=05%7C02%7Ckeith.testa%40unh.edu%7C7Cee6c038b3a64a48e2e808dc5333ca68%7C6d241893512d46dc8d2bbe47e25f5666%7C0%7C0%7C6384767806!](https://nam12.safelinks.protection.outlook.com/?url=https%3A%2F%2Fcolsa.unh.edu%2Fsites%2Fdefault%2Ffiles%2Fmedia%2F2024-03%2Funh-organic-dairy-cows-in-pasture.jpg&data=05%7C02%7Ckeith.testa%40unh.edu%7C7Cee6c038b3a64a48e2e808dc5333ca68%7C6d241893512d46dc8d2bbe47e25f5666%7C0%7C0%7C6384767806!))

Caption: New research led by the University of New Hampshire examines the receptiveness of organic dairy farmers across Maine to pay an average of 64 cents more per cow per day to use methane-reducing seaweed-based feed to their cows, similar to those shown here.

Photo Credit: UNH

Media Contact
Robbin Ray ’82 ([/unhtoday/contributor/robbin-ray-82]) | UNH Marketing | robbin.ray@unh.edu (mailto:robbin.ray@unh.edu) | 603-862-4864

LATEST NEWS

University of New Hampshire Announces Class of 2024 Graduates ([/unhtoday/news/release/2024/05/17/university-new-hampshire-announces-class-2024-graduates])
May 17, 2024

UNH Receives $8M NSF Grant to Advance New Hampshire’s Science and Technology Leadership ([/unhtoday/news/release/2024/05/14/unh-receives-8m-nsf-grant-advance-new-hampshires-science-and-technology])
May 14, 2024

The University of New Hampshire names 21st President ([/unhtoday/news/release/2024/05/07/university-new-hampshire-names-21st-president])
May 7, 2024

Research Finds Pronoun Use Not Only Shaped By Language But Also Beliefs ([/unhtoday/news/release/2024/04/26/research-finds-pronoun-use-not-only-shaped-language-also-beliefs])
April 26, 2024
