Cow of the Future Research Priorities Lay Out Opportunities to Further Reduce Greenhouse Gas Emissions

Rosemont, Ill. — The Innovation Center for U.S. Dairy® in affiliation with the Dairy Research Institute announced the release of the Cow of the Future Research Priorities white paper, which introduces eight focus areas for research and development of new technologies and practices that will help reduce greenhouse gas (GHG) emissions produced by dairy cows. Implementing strategies such as feed improvements, natural additives, genetic improvements and management practices is not only good for the environment but also can increase feed efficiency and herd productivity.

The document is an effort of Cow of the Future, one of 10 projects initiated by the Innovation Center for U.S. Dairy to further reduce GHG emissions for fluid milk by 25 percent by 2020. The project aims to identify opportunities to reduce enteric methane, which is produced by the dairy cow’s rumen stomach and is a significant contributor to the dairy industry’s carbon footprint.

The research priorities were first presented by researchers on July 12 at the joint meeting of the American Dairy Science Association and American Society of Animal Science in New Orleans.

"This living document is intended to extend awareness of the industry's goal to reduce enteric methane and stimulate the conversation among researchers about the means by which we achieve the goal," said Juan Tricarico, Ph.D., director, Cow of the Future project for the Innovation Center for U.S. Dairy, which was established with the leadership of America’s dairy farmers in 2008. “The dairy industry has a history of caring for the land and providing nutrient-rich dairy foods and has committed to continuous improvement in its own production methods as well as to meet the needs of a growing population.”

In late 2010, the Innovation Center convened an advisory group for the Cow of the Future. The advisory group includes key leaders in rumen microbiology, dairy cattle nutrition, animal genetics and dairy herd management from across the U.S. who are associated with land-grant universities and livestock industries. Support for the project has been generously provided by the David and Lucile Packard Foundation.

Aided by input from other U.S. researchers, the advisory group has identified an initial eight areas for future research in methane mitigation.

- Six research areas focus on different levels of biological organization and include ruminal microbial genomics and ecology, rumen function modifiers, feed quality and use, cow genetic selection, and management practices on individual cows and herds.
- A seventh area focuses on refining techniques for methane emission measurements.
- The eighth area integrates knowledge and understanding in a quantitative framework or mathematical model.

In addition to reductions in methane emissions, the advisory group believes that innovations in the priority areas have the potential to lead to even greater improvements in dairy productivity, environmental
sustainability, consumer perception of dairy production practices and products, and animal health and welfare.

"The Cow of the Future Research Priorities paper is intended to focus science and innovation on opportunities with the most potential for reducing enteric methane," Tricarico said. "A coordinated approach will reduce redundancy, improve research efficiency and increase the overall impact of the research to the dairy industry."

For more information about the Cow of the Future project or the Innovation Center for U.S. Dairy, go to: USDairy.com/Sustainability.

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