Field Day: Mitigating methane emissions in dairy cattle through genetics and nutrition: the need for improved forages

AG2PI
Agricultural Genome to Phenome Initiative

Iowa State University · The University of Arizona · University of Idaho · University of Nebraska Lincoln

Omics Tools to Mitigate Enteric Methane Emissions from Dairy Cattle

There is a critical need to develop new practices and technologies that enable a sustainable decrease in enteric methane emissions from dairy cattle. Selective breeding is one of the strategies to achieve permanent and cost-effective reductions in methane emissions. This seminar will present some of the challenges and opportunities in this field, including phenotyping, trait definition, the development of a reference population, the use of milk mid-infrared spectra as a non-invasive approach, and the manipulation of the rumen microbiome.

Presenter:

Francisco Peñagaricano is Assistant Professor at the Department of Animal and Dairy Sciences, University of Wisconsin-Madison. His research program focuses on developing and applying methods to dissect the genetic basis of relevant traits in dairy cattle. His research involves gene mapping, genomic prediction, multi-omics data integration, and network modeling.

Mitigation of Enteric Methane Emissions through Nutritional Intervention

Ruminant livestock are an important source of anthropogenic methane. Research in the area of enteric methane mitigation has grown exponentially in the last 2 decades, with various strategies for enteric methane abatement being investigated. The talk will address strategies including production intensification, dietary manipulation such as supplementation and processing of concentrates and lipids, and management of forage and pastures, and rumen manipulation (supplementation of ionophores, 3-nitrooxypropanol, macroalgae, alternative electron acceptors, and phytochemicals).

Presenter:

Ermias Kebreab is Associate Dean and Sesnon Endowed Chair in Sustainable Agriculture at the University of California, Davis. He conducts research in animal nutrition, mathematical modeling of biological systems and impact of livestock on the environment.

February 8, 2023

10:30 AM–12:00 PM

(Central Time, UTC–6)

Purpose: Explore how breeding and diet can reduce methane emissions by dairy cattle, with implications and opportunities for choice and improvement of forages.

Register for this Zoom virtual meeting:

https://tinyurl.com/AG2PI-FD24

Upon registration, you will receive a confirmation email with information about joining the meeting.

A recording will be available at a later date at: ag2pi.org/

USDA

Agricultural Genome to Phenome Initiative (AG2PI) is funded by USDA-NIFA awards 2020-70412-32615, 2021-70412-35233, and 2022-70412-38454.